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

Date: 05-22-2017
EMAX Batch No.: 17E031

ATTN: MARLON CARTIN

ASSET LABS
3151 W. POST ROAD
LAS VEGAS NV 89118

Subject: Laboratory Report
Project: PG&E

Enclosed is the Laboratory report for samples received on 05/04/17.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-55-120-Q217	E031-01	05/02/17	WATER	CHROMIUM HEXAVALENT BY IC
				DISSOLVED CHROMIUM
MW-55-045-EB-Q217	E031-02	05/02/17	WATER	CHROMIUM HEXAVALENT BY IC
				DISSOLVED CHROMIUM
MW-55-045-Q217	E031-03	05/02/17	WATER	CHROMIUM HEXAVALENT BY IC
				DISSOLVED CHROMIUM

The results are summarized on the following pages.

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

Sincerely yours,

Caspar J. Pang
Laboratory Director

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

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

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

17E031

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

CHAIN-OF-CUSTODY RECORD

QC Level: Level IV

Subcontractor:

EMAX Laboratories
1835 205th Street
Torrance, CA 90501

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

Field Sampler: SIGNED

03-May-17

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests EPA 218.6	EPA 3010A	EPA 6020
1	N024073-001A / MW-55-120-Q217	Groundwater	5/2/2017 2:18:00 PM	8OZP	1		
	N024073-001B / MW-55-120-Q217	Groundwater	5/2/2017 2:18:00 PM	16OZP		1	1
2	N024073-002A / MW-55-045-EB-Q217	Groundwater	5/2/2017 2:35:00 PM	8OZP	1		
	N024073-002B / MW-55-045-EB-Q217	Groundwater	5/2/2017 2:35:00 PM	16OZP		1	1
3	N024073-003A / MW-55-045-Q217	Groundwater	5/2/2017 3:08:00 PM	8OZP	1		
	N024073-003B / MW-55-045-Q217	Groundwater	5/2/2017 3:08:00 PM	16OZP		1	1

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

Please use PO#:N24073A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please see attached document for requested test.

Temp. 3.0°

GSO #: 535987135

		Date/Time			Date/Time
Relinquished by:		5/3/2017 17:00	**Received by:**		5/4/17 09:00
Relinquished by:			**Received by:**		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

CHAIN OF CUSTODY RECORD

Page 1 of 1

17E031

ARCUS02 C: 5/16/2017 12:00 AM
FOLDER R: 5/2/2017
N024073-004A 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 Fax:		
Signature: Date:	Sampled By: Jason Marks		
I hereby authorize ASSET Labs to perform the tests indicated below	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*		
Project Name: PG&E Topock - AZ GMP	Signature:	Date: 5/2/17	
Project Number: RC000753.0801			

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

EDD Req.

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

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

Sample Temp: 0.6 C

Courier:

Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 501 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 502 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03); H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		MW-55-120-Q217	5/2/2017	1418			X				X			E	3	P	BN	Send to EMAX
2		MW-55-045-EB-Q217	5/2/2017	1435		X					X			E	2	P	BN	Send to EMAX
3		MW-55-045-Q217	5/2/2017	1508			X				X			E	3	P	BN	Send to EMAX
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	5/2/17		5/2/17 1655
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	5/2/17 1654		5/2/17 1657
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

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

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

Special Instruction:

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

Preservatives:

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

Container Type:

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

White=Laboratory Copy
Yellow=Customer's Copy

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 17E031
☐ Fedex ☐ UPS ☑ GSO ☐ Others	535987135	Recipient Cecilia Crowell
☐ EMAX Courier ☐ Client Delivery		Date 5/4/17 Time 0900

COC INSPECTION

☑ Client Name	☐ Client PM/FC	☑ Sampler Name	☑ Sampling Date/Time	☑ Sample ID	☑ Matrix
☑ Address	☑ Tel # / Fax #	☐ Courier Signature	☑ Analysis Required	☐ Preservative (if any)	☑ TAT

Safety Issues (if any) ☐ High concentrations expected ☐ From Superfund Site ☐ Rad screening required

Note: 2 pages of COC. 2nd page contains information checked above

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 3.0 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	A - S/N 130528505	B - S/N 150555522	C - S/N 140252067	(D) S/N 150555630	FRM 11/7/16

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

Note:

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
2	5	D22	*	R1
1-3	3,5,8	D2	●	R1 - page 2
2	4	D23	★	R1

5/4/17

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

NOTES/OBSERVATIONS: *Label states Sample is not filtered, COC states that sample is for 6020A dissolved analysis ● 1st page of COC requests test 3010A, this is not indicated on container Labels

★Chromium 6 is not filtered, all other Chromium samples are filtered

LEGEND:

☐ **Continue to next page.**

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

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

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

REVIEWS:

Sample Labeling Date 5/4/17 5/4/17

SRF Date 5/4/17

PM Date 5/4/17

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

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

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

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

Delivery Instructions:

Signature Type: REQUIRED

Tracking #: 535987135

CPS



LAX **F**

TORRANCE

D90501A



66336873

Print Date: 5/3/2017 3:39 PM

LABEL INSTRUCTIONS:

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

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

REPORTING CONVENTIONS

DATA QUALIFIERS:

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

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

ACRONYMS AND ABBREVIATIONS:

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

DATES

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

LABORATORY REPORT FOR

ASSET LABS

PG&E

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

SDG#: 17E031

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E

SDG : 17E031

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

A total of three (3) water samples were received on 05/04/17 to be analyzed for Dissolved Chromium by ICP-MS in accordance with Method SW6020A and project specific requirements.

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME013WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IME013WL/IME013WC were within LCS limits. Refer to LCS summary form for details.

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

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

LAB CHRONICLE
DISSOLVED CHROMIUM BY ICP-MS

Client : ASSET LABS
Project : PG&E

SDG NO. : 17E031
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Data FN	Prep. Batch	Notes
MBLK1W	IME013WB	1.00	NA	05/18/1718:35	05/16/1711:50	F6E01018	F6E01016	IME013W	Method Blank
LCS1W	IME013WL	1.00	NA	05/18/1718:40	05/16/1711:50	F6E01019	F6E01016	IME013W	Lab Control Sample (LCS)
LCD1W	IME013WC	1.00	NA	05/18/1718:44	05/16/1711:50	F6E01020	F6E01016	IME013W	LCS Duplicate
MW-55-120-Q217	E031-01	1.00	NA	05/18/1718:49	05/16/1711:50	F6E01021	F6E01016	IME013W	Field Sample
MW-55-045-Q217	E031-03	1.00	NA	05/18/1718:58	05/16/1711:50	F6E01023	F6E01016	IME013W	Field Sample
MW-55-045-EB-Q217	E031-02N	1.00	NA	05/18/1719:11	05/16/1711:50	F6E01026	F6E01024	IME013W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/02/17 14:18
Project	: PG&E	Date Received:	05/04/17
SDG NO.	: 17E031	Date Extracted:	05/16/17 11:50
Sample ID:	MW-55-120-Q217	Date Analyzed:	05/18/17 18:49
Lab Samp ID:	E031-01	Dilution Factor:	1
Lab File ID:	F6E01021	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01016	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Chromium	8.2	1.00	0.200

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

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

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/02/17 14:35
Project	: PG&E	Date Received:	05/04/17
SDG NO.	: 17E031	Date Extracted:	05/16/17 11:50
Sample ID:	MW-55-045-EB-Q217	Date Analyzed:	05/18/17 19:11
Lab Samp ID:	E031-02N	Dilution Factor:	1
Lab File ID:	F6E01026	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01024	Instrument ID:	F6

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

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

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

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/02/17 15:08
Project	: PG&E	Date Received:	05/04/17
SDG NO.	: 17E031	Date Extracted:	05/16/17 11:50
Sample ID:	MW-55-045-Q217	Date Analyzed:	05/18/17 18:58
Lab Samp ID:	E031-03	Dilution Factor:	1
Lab File ID:	F6E01023	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01016	Instrument ID:	F6

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

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

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

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E	Date Received:	NA
SDG NO.	: 17E031	Date Extracted:	05/16/17 11:50
Sample ID	: MBLK1W	Date Analyzed:	05/18/17 18:35
Lab Samp ID	: IME013WB	Dilution Factor:	1
Lab File ID	: F6E01018	Matrix:	WATER
Ext Btch ID	: IME013W	% Moisture:	NA
Calib. Ref.	: F6E01016	Instrument ID:	F6

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

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

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E031
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IME013WB	IME013WL	IME013WC
LAB FILE ID	: F6E01018	F6E01019	F6E01020
DATE PREPARED	: 05/16/17 11:50	05/16/17 11:50	05/16/17 11:50
DATE ANALYZED	: 05/18/17 18:35	05/18/17 18:40	05/18/17 18:44
PREP BATCH	: IME013W	IME013W	IME013W
CALIBRATION REF	: F6E01016	F6E01016	F6E01016

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Chromium	ND	30	30.2	101	30	29.4	98	3	85-115	20

ICP-MS QC CHECK TABLE

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

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

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

Start Date: 5/18/17 17:28

End Date: 5/18/17 20:44 5/19/17

Comments:

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

Filter Lot #: NA

Book #:	AF6-018
Instrument No.:	F6
Analytical Batch:	IF6E01
Analytical Sequence:	F6E01
Method File:	EM6QUAL2
Micropipette ID:	☐ 142781004
Micropipette ID:	☐ ICP-06
Micropipette ID:	☐ 339362028
Micropipette ID:	☐ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☐ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

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

STANDARDS ID		STANDARDS ID	
S0	SMCB011-02.01	MRL1 (1)	SMCB011-03.04
S1	↓ -02.04	MRL2 (0.5)	↓ -03.05
S2	-02.05	MRL3 (0.2)	↓ -04.01
S3	-03.01	MRL4	NA
S4	↓ -03.02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SMCB10-50-06
S7	↓	Post-Spike 1	SMCA-087-04-06
ICV	SMCB011-01.01	Post-Spike 2	↓ 04.07
CCV	↓ 03.03	Post-Spike 3	NA
ICSA	↓ 06.06	Post-Spike 4	↓
ICSAB	↓ 06.07		
6020 TUNE SOLN.	SMCB10-44.04		
200.8 TUNE SOLN.	↓ 44.05		

Analyzed By: CW

Date: 5/18/17

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17E031
Method : METHOD SW6020A
Sequence : IF6E01
InstrumentID: F6

		ICV				ICSA			ICSAB		
Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		F6E01009				F6E01013			F6E01014		
DateAnalyed :		05/18/1717:55				05/18/1718:12			05/18/1718:17		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		29.53	30	0.38	98	.3431	0	<2.0	20.92	20	105
Beryllium		29.15	30	1.44	97	.01297	0	<1.0	20.97	20	105
Boron		26.87	30	2.34	90	.6373	0	<10	19.58	20	98
Sodium		28530	30000	0.47	95	99210	100000	99	96560	100000	97
Magnesium		29170	30000	0.96	97	96660	100000	97	93470	100000	93
Aluminum		29010	30000	1.02	97	94270	100000	94	91980	100000	92
Silicon		2948	3000	0.99	98	6.615	0	<50	201.4	200	101
Phosphorus		282.1	300	0.96	94	96860	100000	97	93800	100000	94
Potassium		30050	30000	1.18	100	100800	100000	101	103200	100000	103
Calcium		28710	30000	0.97	96	100200	100000	100	98590	100000	99
Titanium		301.5	300	0.66	100	2136	2000	107	2126	2000	106
Vanadium		286.5	300	1.22	96	-.01236	0	<1.0	20.02	20	100
Chromium	T	279.2	300	1.66	93	1.234	0	>.2	20.48	20	102
Manganese		1801	2000	1.48	90	.1811	0	<1.0	19.77	20	99
Iron		28640	30000	0.83	95	97500	100000	98	97780	100000	98
Cobalt		260.1	300	0.85	87*	.2198	0	<1.0	18.24	20	91
Nickel		278.2	300	1.21	93	.1843	0	<1.0	19.22	20	96
Copper		262.5	300	1.22	88*	.6322	0	<1.0	18.41	20	92
Zinc		291.5	300	1.66	97	1.841	0	<20	20.25	20	101
Arsenic		290.2	300	0.52	97	.1865	0	<1.0	20.51	20	103
Selenium		292.9	300	0.83	98	.0811	0	<1.0	21.93	20	110
Strontium		281.9	300	1.71	94	.6183	0	<2.0	19.43	20	97
Zirconium		20.49	30	2.43	68*	.2546	0	<5.0	5.588	20	28*
Molybdenum		309.9	300	1.14	103	2132	2000	107	2149	2000	107
Silver		28.13	30	0.82	94	.02247	0	<1.0	19.29	20	96
Cadmium		295.5	300	0.60	98	.2196	0	<1.0	19.97	20	100
Tin		302.8	300	0.41	101	.04191	0	<1.0	20.42	20	102
Antimony		61.66	60	0.76	103	.05455	0	<1.0	20.57	20	103
Barium		303.7	300	1.71	101	.1051	0	<1.0	20.72	20	104
Tungsten		28.73	30	0.72	96	.1204	0	<2.0	18.58	20	93
Thallium		281.5	300	0.89	94	.007655	0	<1.0	19.03	20	95
Lead		283.3	300	1.43	94	.2065	0	<1.0	19.44	20	97
Uranium		287.6	300	1.57	96	.006068	0	<1.0	19.31	20	97

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

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17E031
Method : METHOD SW6020A
Sequence : IF6E01
Instrument ID: F6

		CCV1			CCV2			CCV3		
CCV SampleID										
CCV DataFileID		F6E01016			F6E01024			F6E01032		
CCV DateTime		05/18/17 18:26			05/18/17 19:02			05/18/17 19:39		
PARAMETER		CCV EV RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25 25.9	103	0.14	26.0	104	0.83	26.1	104	2.44
Beryllium		25 26.2	105	1.21	25.4	101	0.36	26.6	106	1.94
Boron		50 50.4	101	1.07	51.7	103	1.56	50.5	101	0.85
Sodium		25000 23800	95	0.89	24300	97	0.37	24000	96	1.11
Magnesium		25000 24500	98	0.60	24800	99	1.31	23600	94	1.31
Aluminum		25000 23900	96	2.63	24400	98	1.95	23600	95	0.91
Silicon		2500 2420	97	1.03	2600	104	0.57	2510	100	1.47
Phosphorus		250 231	92	1.24	244	97	0.90	234	94	0.94
Potassium		25000 25300	101	0.78	25600	102	0.27	25700	103	0.60
Calcium		25000 24300	97	0.15	24700	99	0.58	24900	99	1.12
Titanium		250 252	101	0.26	259	103	1.44	250	100	1.31
Vanadium		250 253	101	0.92	250	100	1.54	252	101	0.75
Chromium	T	250 243	97	1.97	244	98	1.10	243	97	1.01
Manganese		1500 1470	98	1.44	1460	97	0.66	1450	97	1.60
Iron		25000 24800	99	1.87	24500	98	0.94	25000	100	0.83
Cobalt		250 231	92	2.02	231	92	0.12	228	91	0.89
Nickel		250 244	98	1.12	245	98	1.35	243	97	1.56
Copper		250 232	93	1.33	227	91	1.81	230	92	0.72
Zinc		250 251	100	1.55	248	99	0.48	249	99	0.79
Arsenic		250 251	101	0.42	252	101	0.41	251	100	0.64
Selenium		250 253	101	0.22	251	100	0.50	253	101	0.83
Strontium		250 250	100	1.76	245	98	0.83	253	101	0.87
Zirconium		25 17.0	68*	2.81	16.7	67*	0.78	17.1	68*	0.61
Molybdenum		250 261	104	2.55	268	107	0.46	263	105	0.89
Silver		25 25.3	101	0.55	25.3	101	0.69	24.7	99	0.80
Cadmium		250 255	102	0.12	251	100	0.31	252	101	0.31
Tin		250 257	103	1.65	259	104	0.45	258	103	1.14
Antimony		50 51.2	102	1.52	51.6	103	0.43	51.9	104	1.28
Barium		500 515	103	2.25	520	104	0.79	516	103	0.79
Tungsten		25 24.8	99	1.51	24.4	98	0.91	24.5	98	0.71
Thallium		250 252	101	1.46	244	98	0.35	244	97	1.50
Lead		250 252	101	0.20	242	97	0.50	244	98	1.44
Uranium		250 246	98	0.58	239	96	0.84	241	96	0.37

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

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17E031
Method : SW6020A
Sequence : IF6E01
Instrument ID: F6

CB SampleID	: ICB	CCB1	CCB2	CCB3
CB DataFileID	: F6E01010	F6E01017	F6E01025	F6E01033
CB DateTime	: 05/18/1717:59	05/18/1718:30	05/18/1719:06	05/18/1719:43

PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		2.0	0.1	<2.0	0.10	<2.0	0.05	<2.0	0.03	<2.0
Beryllium		1.0	0.00007	<1.0	0.001	<1.0	0.002	<1.0	0.0008	<1.0
Boron		10	0.1	<10	0.2	<10	2	<10	0.4	<10
Sodium		100	4	<100	8	<100	50	<100	20	<100
Magnesium		100	0.7	<100	0.8	<100	0.6	<100	0.8	<100
Aluminum		100	0.5	<100	0.5	<100	0.4	<100	0.5	<100
Silicon		50	2	<50	1	<50	1	<50	1	<50
Phosphorus		50	0.2	<50	1	<50	1	<50	0.9	<50
Potassium		100	7	<100	5	<100	6	<100	2	<100
Calcium		100	2	<100	1	<100	0.8	<100	2	<100
Titanium		2.0	0.03	<2.0	0.03	<2.0	0.02	<2.0	0.04	<2.0
Vanadium		1.0	0.01	<1.0	0.03	<1.0	0.04	<1.0	0.07	<1.0
Chromium	T	.2	0.03	<.2	0.03	<.2	0.07	<.2	0.07	<.2
Manganese		1.0	0.07	<1.0	0.03	<1.0	0.02	<1.0	0.01	<1.0
Iron		100	4	<100	4	<100	3	<100	4	<100
Cobalt		1.0	0.002	<1.0	0.0002	<1.0	0.00003	<1.0	0.0007	<1.0
Nickel		1.0	0.007	<1.0	0.004	<1.0	0.0003	<1.0	0.007	<1.0
Copper		1.0	0.07	<1.0	0.03	<1.0	0.10	<1.0	0.1	<1.0
Zinc		20	0.010	<20	0.008	<20	0.008	<20	0.006	<20
Arsenic		1.0	0.06	<1.0	0.03	<1.0	0.04	<1.0	0.02	<1.0
Selenium		1.0	0.07	<1.0	0.03	<1.0	0.03	<1.0	0.04	<1.0
Strontium		2.0	0.005	<2.0	0.004	<2.0	0.006	<2.0	0.003	<2.0
Zirconium		5.0	0.04	<5.0	0.05	<5.0	0.05	<5.0	0.05	<5.0
Molybdenum		2.0	0.1	<2.0	0.1	<2.0	0.07	<2.0	0.2	<2.0
Silver		1.0	0.004	<1.0	0.0008	<1.0	0.00009	<1.0	0.00000	<1.0
Cadmium		1.0	0.003	<1.0	0.002	<1.0	0.00009	<1.0	0.0009	<1.0
Tin		1.0	0.1	<1.0	0.07	<1.0	0.06	<1.0	0.06	<1.0
Antimony		1.0	0.01	<1.0	0.02	<1.0	0.03	<1.0	0.02	<1.0
Barium		1.0	0.004	<1.0	0.01	<1.0	0.008	<1.0	0.01	<1.0
Tungsten		2.0	0.02	<2.0	0.01	<2.0	0.009	<2.0	0.008	<2.0
Thallium		1.0	0.03	<1.0	0.01	<1.0	0.01	<1.0	0.01	<1.0
Lead		1.0	0.04	<1.0	0.005	<1.0	0.0009	<1.0	0.002	<1.0
Uranium		1.0	0.03	<1.0	0.02	<1.0	0.02	<1.0	0.02	<1.0

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

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6E01001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6E01002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1101	F6E01003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1201	F6E01004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1104	F6E01005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1105	F6E01006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1106	F6E01007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1107	F6E01008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICV1	1204	F6E01009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICB	1201	F6E01010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6E01011	MRLE1801	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1306	F6E01012	MRLE1802	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6E01013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6E01014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1207	F6E01015	MRLD1803	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E01016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E01017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	2101	F6E01018	IME013WB		1.000				
24	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2102	F6E01019	IME013WL		1.000				
25	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2103	F6E01020	IME013WC		1.000				
26	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2104	F6E01021	E031-01		1.000				
27	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6E01022	E031-02 IS fail-6		1.000				
28	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2106	F6E01023	E031-03		1.000				
29	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E01024	CCV2		1.000				
30	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E01025	CCB2		1.000				
31	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6E01026	E031-02N		1.000				
32	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2107	F6E01027	E058-01		1.000				
33	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2108	F6E01028	E058-04		1.000				
34	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2109	F6E01029	E058-06		1.000				
35	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6E01030	ICSA2		1.000				
36	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6E01031	ICSAB2		1.000				
37	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E01032	CCV3		1.000				
38	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E01033	CCB3		1.000				
39	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2110	F6E01034	E058-02		1.000				
40	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2111	F6E01035	E058-03		1.000				
41	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2112	F6E01036	E058-05		1.000				
42	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2201	F6E01037	E058-07		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
43	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2202	F6E01038	E058-08		1.000				
44	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2203	F6E01039	E058-09		1.000				
45	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6E01040	ICSA3		1.000				
46	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6E01041	ICSAB3		1.000				
47	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E01042	CCV4		1.000				
48	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E01043	CCB4		1.000				
49	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1101	F6E01044	BLANK		1.000				
50	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1101	F6E01045	BLANK		1.000				
51	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1101	F6E01046	BLANK		1.000				
52		Keyword		StandBy							
53		Keyword		SMPLEND	End of SMPL						
54		Keyword		End	End of Sequence						
55		Keyword		BLKBEG	Start of BLANK						
56		Keyword		BLKEND	End of BLANK						
57		Keyword		ERRBEG	Start of ERRTERM						
58		Keyword		ERREND	End of ERRTERM						

Last Calib: May 18, 2017 05:53 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

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

	Data File	Sample Name	Date Acquired
1	c:\data\if62017\e\if6e01.b\f6e01004.d\f6e01004.d#	S0	May 18 2017 05:33 pm
2	c:\data\if62017\e\if6e01.b\f6e01005.d\f6e01005.d#	S1 0.5	May 18 2017 05:37 pm
3	c:\data\if62017\e\if6e01.b\f6e01006.d\f6e01006.d#	S2 50	May 18 2017 05:42 pm
4	c:\data\if62017\e\if6e01.b\f6e01007.d\f6e01007.d#	S3 250	May 18 2017 05:46 pm
5	c:\data\if62017\e\if6e01.b\f6e01008.d\f6e01008.d#	S4 500	May 18 2017 05:51 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - C:\DATA\IF62017\E\IF6E01.B\EM6020R2.C

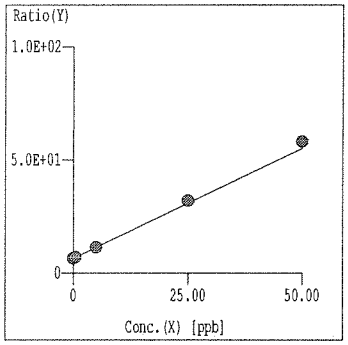
=== ISTD Table ===

Fix ISTD Conc: ON

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

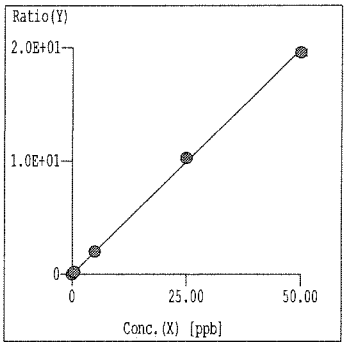
=== Graph Detail ===

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



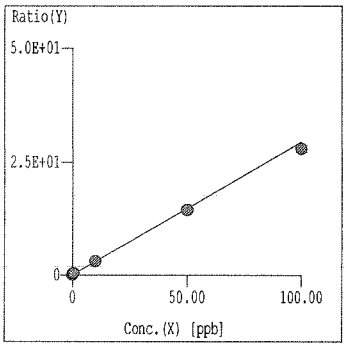
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.726E-001*X +6.448E+000
X = 1.028E+000*Y -6.629E+000
DL = 8.139E-02 ppb
BEC = 6.629 ppb

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



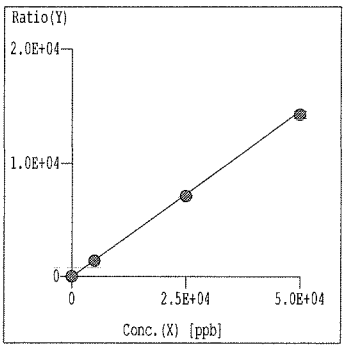
Curve Fit: Y=aX+b
r = 0.9997
Y = 3.974E-001*X +8.278E-004
X = 2.517E+000*Y -2.083E-003
DL = 1.019E-03 ppb
BEC = 2.083E-03 ppb

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



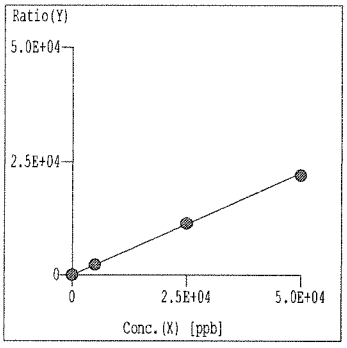
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.937E-001*X +1.120E-001
X = 3.404E+000*Y -3.812E-001
DL = 3.985E-02 ppb
BEC = 3.812E-01 ppb

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



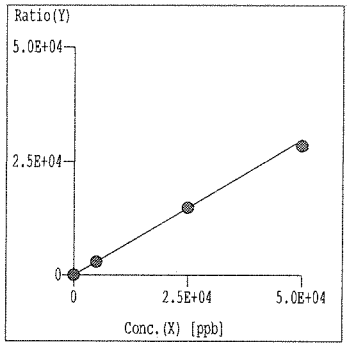
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.919E-001*X +2.868E+000
X = 3.426E+000*Y -9.825E+000
DL = 2.632E-01 ppb
BEC = 9.825 ppb

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



Curve Fit: Y=aX+b
r = 0.9998
Y = 4.515E-001*X +6.432E-002
X = 2.215E+000*Y -1.425E-001
DL = 2.078E-02 ppb
BEC = 1.425E-01 ppb

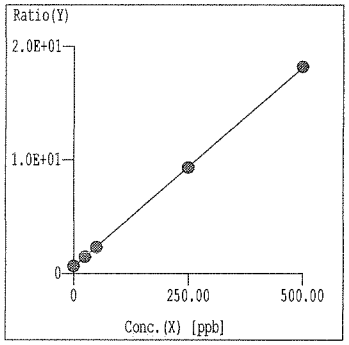
Step Mass Element (3) 27 Al | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9997
Y = 5.957E-001*X +8.332E-002
X = 1.679E+000*Y -1.399E-001
DL = 2.414E-03 ppb
BEC = 1.399E-01 ppb

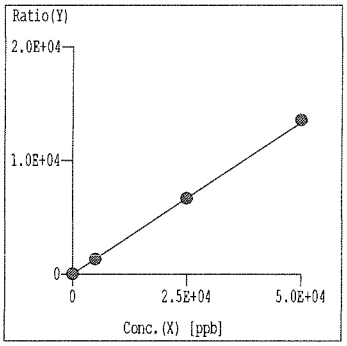
=== Graph Detail ===

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



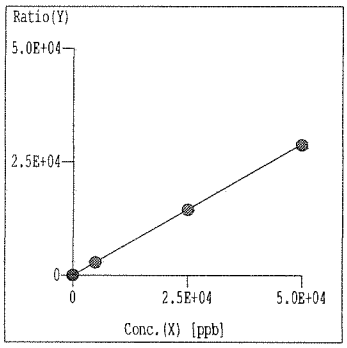
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.507E-002*X +6.077E-001
X = 2.852E+001*Y -1.733E+001
DL = 1.610 ppb
BEC = 17.33 ppb

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



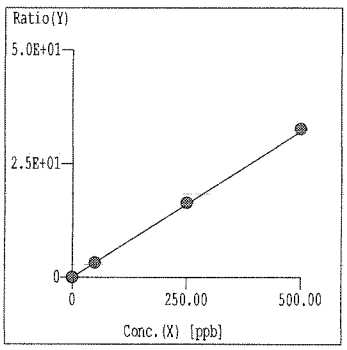
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.662E-001*X +2.673E+001
X = 3.757E+000*Y -1.004E+002
DL = 2.246 ppb
BEC = 100.4 ppb

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



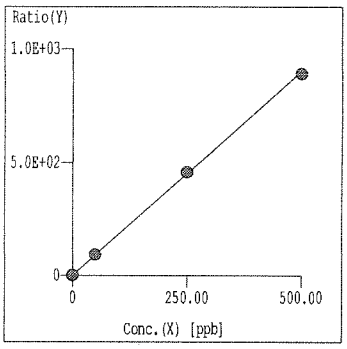
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.800E-001*X +1.766E+000
X = 1.724E+000*Y -3.044E+000
DL = 1.412E-02 ppb
BEC = 3.044 ppb

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



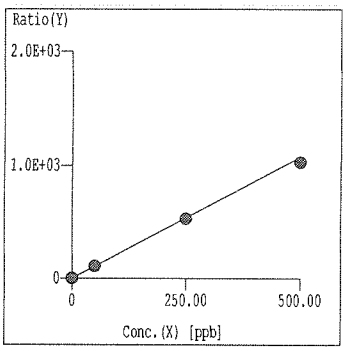
Curve Fit: Y=aX+b
r = 1.0000
Y = 6.417E-002*X +2.584E-003
X = 1.558E+001*Y -4.027E-002
DL = 1.378E-02 ppb
BEC = 4.027E-02 ppb

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



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.806E+000*X +8.311E-001
X = 5.537E-001*Y -4.602E-001
DL = 1.955E-02 ppb
BEC = 4.602E-01 ppb

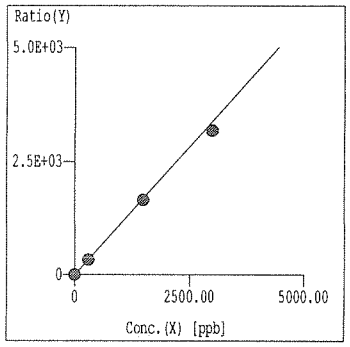
Step Mass Element (2) 52 Cr | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 2.150E+000*X +5.613E-001
X = 4.652E-001*Y -2.611E-001
DL = 6.534E-03 ppb
BEC = 2.611E-01 ppb

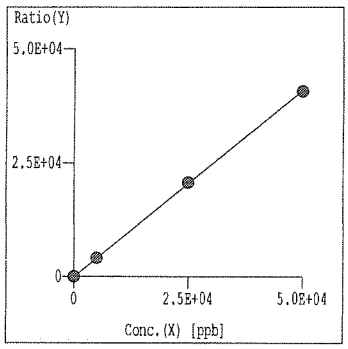
=== Graph Detail ===

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



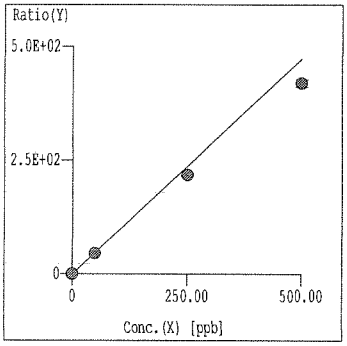
Curve Fit: Y=aX+b
r = 0.9998
Y = 1.126E+000*X +8.236E-002
X = 8.883E-001*Y -7.316E-002
DL = 4.897E-03 ppb
BEC = 7.316E-02 ppb

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



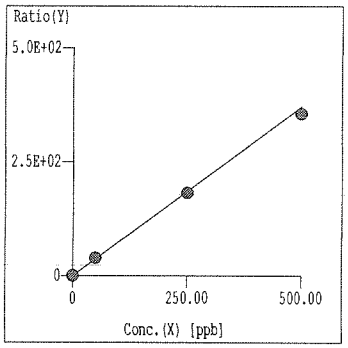
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.183E-001*X +2.036E-001
X = 1.222E+000*Y -2.488E-001
DL = 2.183E-02 ppb
BEC = 2.488E-01 ppb

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



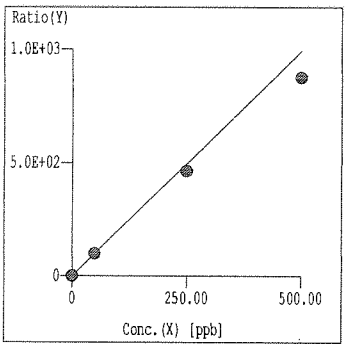
Curve Fit: Y=aX+b
r = 0.9998
Y = 9.455E-001*X +5.624E-003
X = 1.058E+000*Y -5.949E-003
DL = 2.456E-03 ppb
BEC = 5.949E-03 ppb

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



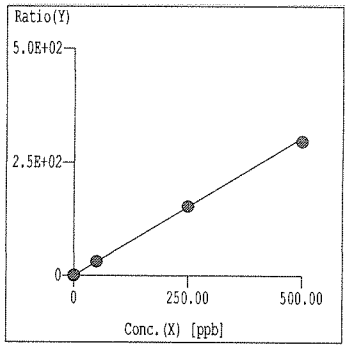
Curve Fit: Y=aX+b
r = 0.9999
Y = 7.405E-001*X +1.752E-002
X = 1.350E+000*Y -2.366E-002
DL = 5.004E-03 ppb
BEC = 2.366E-02 ppb

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



Curve Fit: Y=aX+b
r = 0.9996
Y = 1.982E+000*X +8.271E-002
X = 5.045E-001*Y -4.173E-002
DL = 2.714E-03 ppb
BEC = 4.173E-02 ppb

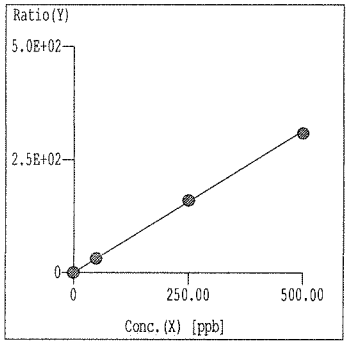
Step Mass Element (3) 66 Zn | ISTD 72 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.091E-001*X +9.836E-002
X = 1.642E+000*Y -1.615E-001
DL = 2.145E-02 ppb
BEC = 1.615E-01 ppb

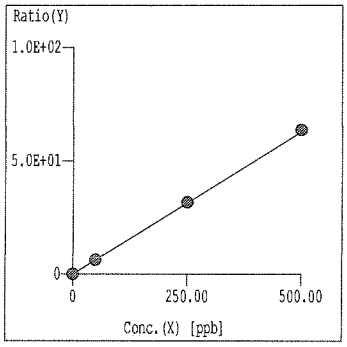
=== Graph Detail ===

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



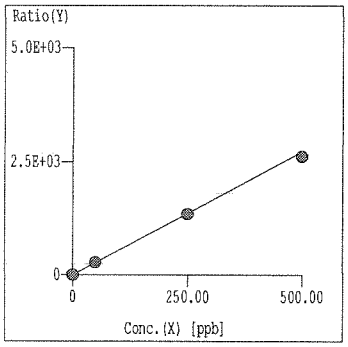
Curve Fit: Y=aX+b
r = 0.9998
Y = 6.288E-001*X +5.313E-002
X = 1.590E+000*Y -8.449E-002
DL = 2.073E-02 ppb
BEC = 8.449E-02 ppb

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



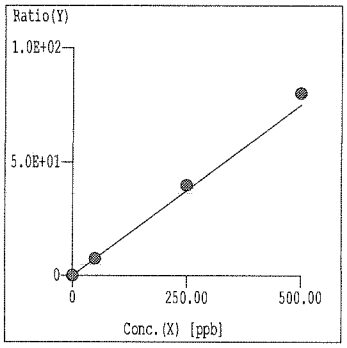
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.256E-001*X +1.240E-003
X = 7.964E+000*Y -9.879E-003
DL = 6.331E-03 ppb
BEC = 9.879E-03 ppb

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



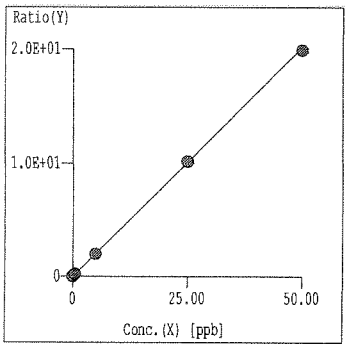
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.448E+000*X +5.744E-002
X = 1.835E-001*Y -1.054E-002
DL = 2.870E-03 ppb
BEC = 1.054E-02 ppb

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



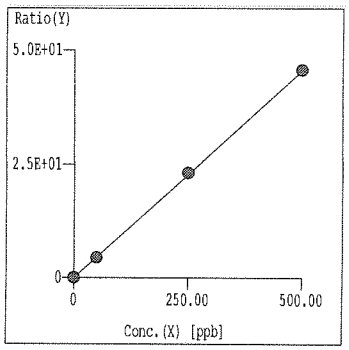
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.501E-001*X +8.453E-004
X = 6.663E+000*Y -5.632E-003
DL = 2.020E-03 ppb
BEC = 5.632E-03 ppb

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



Curve Fit: Y=aX+b
r = 1.0000
Y = 4.036E-001*X +1.144E-003
X = 2.478E+000*Y -2.834E-003
DL = 5.795E-04 ppb
BEC = 2.834E-03 ppb

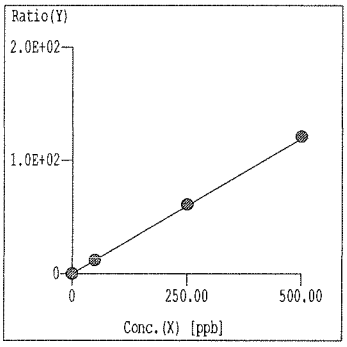
Step Mass Element (3) 111 Cd | ISTD 115 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 9.099E-002*X +3.325E-004
X = 1.099E+001*Y -3.655E-003
DL = 1.202E-02 ppb
BEC = 3.655E-03 ppb

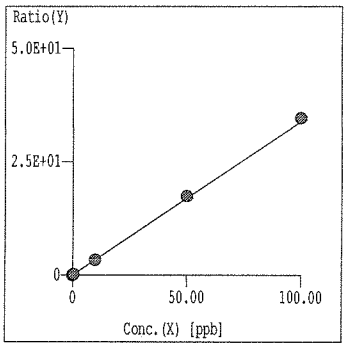
=== Graph Detail ===

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



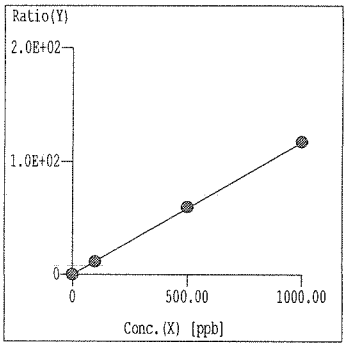
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.386E-001*X +2.225E-003
X = 4.192E+000*Y -9.326E-003
DL = 4.014E-03 ppb
BEC = 9.326E-03 ppb

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



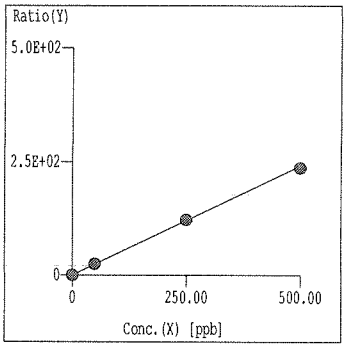
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.386E-001*X +5.271E-003
X = 2.953E+000*Y -1.557E-002
DL = 4.298E-03 ppb
BEC = 1.557E-02 ppb

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



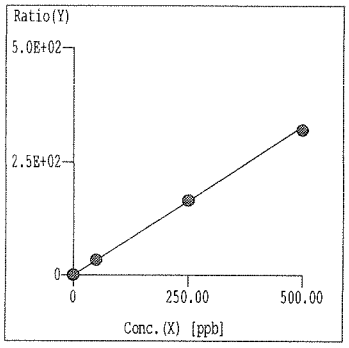
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.167E-001*X +1.342E-003
X = 8.568E+000*Y -1.150E-002
DL = 2.893E-03 ppb
BEC = 1.150E-02 ppb

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



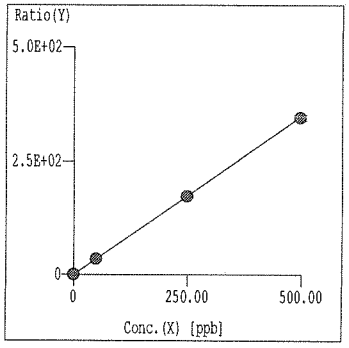
Curve Fit: Y=aX+b
r = 0.9999
Y = 4.826E-001*X +1.618E-003
X = 2.072E+000*Y -3.352E-003
DL = 1.852E-03 ppb
BEC = 3.352E-03 ppb

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



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.568E-001*X +1.056E-002
X = 1.523E+000*Y -1.608E-002
DL = 3.858E-03 ppb
BEC = 1.608E-02 ppb

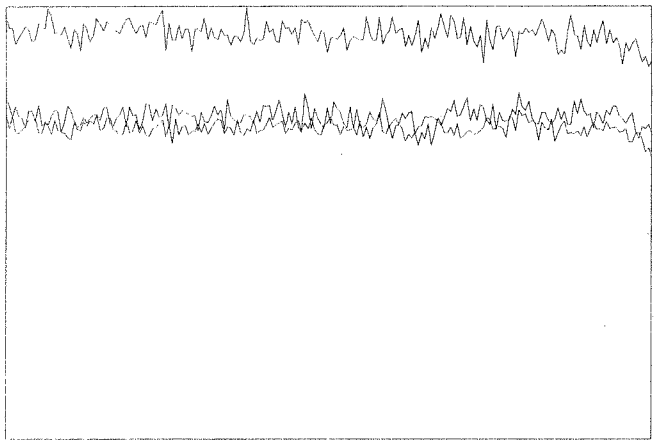
Step Mass Element (3) 238 U | ISTD 159 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.997E-001*X +6.144E-004
X = 1.429E+000*Y -8.782E-004
DL = 2.963E-04 ppb
BEC = 8.782E-04 ppb

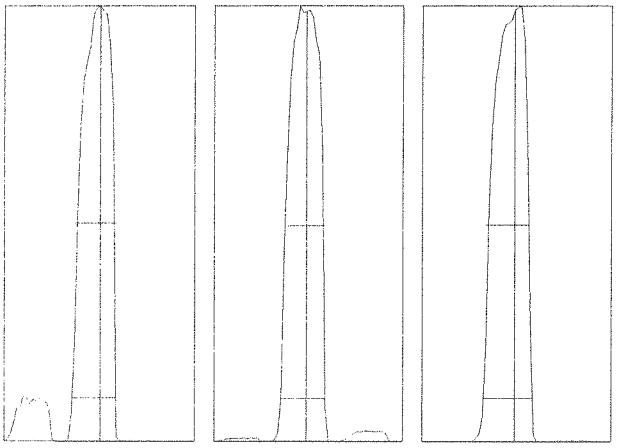
Tune Report

Tune File : NORM.U
Comment : 1FEB01 cem 5/19/17



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.272%
Doubly Charged:	70/140	0.891%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	14129.0	14915.8	2.70	3.00
89	100,000	65269.0	71667.4	2.40	3.90
205	50,000	43720.0	46783.8	2.74	8.50
156/140	2	1.280%	1.312%	5.68	
70/140	2	0.832%	0.842%	5.38	



m/z:	7	89	205
Height:	4,573	20,653	12,955
Axis:	7.05	89.00	205.00
W-50%:	0.65	0.65	0.70
W-10%:	0.700	0.700	0.800

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : May 18, 2017 13:46:50
Printed : May 18, 2017 13:46:52

Tune Report

Tune File : NORM.U
Comment : 17E031 CR 9/1/17

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.69 V	Extract 2	:	-110 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	0.9995
Torch-H	:	-1 mm	Omega Lens-ce	:	1.6 V	Axis Offset	:	-0.02
Torch-V	:	-0.4 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.12 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2100 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1380 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

===Reaction Cell===

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

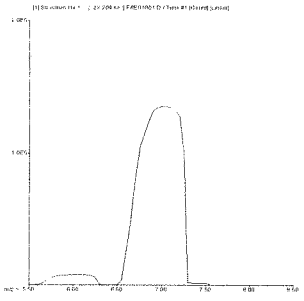
Generated : May 18, 2017 13:46:50
Printed : May 18, 2017 13:46:54

6020 QC Tune Report

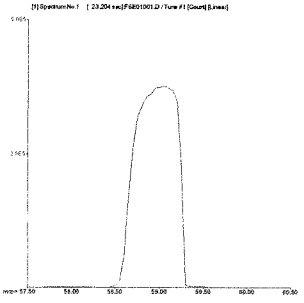
Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01001.D
Date Acquired: May 18 2017 05:19 pm
Acq. Method: TN6020_C.M
Operator: CCapul
Sample Name: 6020tunchk
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

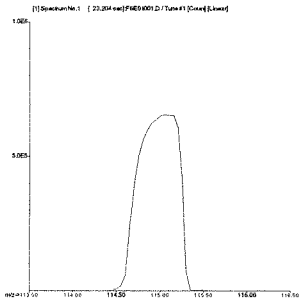
Element	Actual	Required	Flag
7 Li	3.88	5.00	
59 Co	3.48	5.00	
115 In	1.63	5.00	
205 Tl	3.21	5.00	



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



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



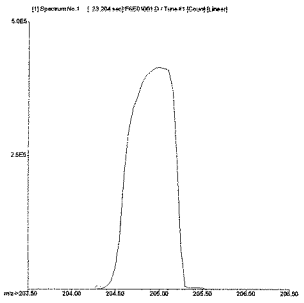
115 In

Mass Calib.

Actual:	115.05	
Required:	114.90 -	115.10
Flag:		

Peak Width-10%

Actual:	0.65
Limit	0.90
Flag:	



205 Tl

Mass Calib.

Actual:	205.00	
Required:	204.90 -	205.10
Flag:		

Peak Width-10%

Actual:	0.65
Limit	0.90
Flag:	

Calibration Blank QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01003
Date Acquired:	May 18 2017 05:28 pm
Operator:	CCapul
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	May 18 2017 05:31 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1548327.00	A	26010.00	1.68
7	Li	99226.22	P	852.00	0.86
9	Be	43.33	P	8.82	20.35
11	B	7143.01	P	71.87	1.01
23	Na	87842.30	P	677.30	0.77
24	Mg	19059.29	P	293.40	1.54
27	Al	20593.54	P	554.10	2.69
28	Si	7777.95	P	2222.00	28.57
31	P	28628.54	P	227.10	0.79
39	K	170112.09	P	1463.00	0.86
40	Ca	143516.20	P	1077.00	0.75
45	Sc	2631872.00	A	90910.00	3.45
45	Sc	635278.63	P	6151.00	0.97
45	Sc	4546191.00	A	21430.00	0.47
47	Ti	124.45	P	15.03	12.08
51	V	5177.15	P	23.45	0.45
52	Cr	3554.00	P	100.30	2.82
55	Mn	4511.96	P	30.99	0.69
56	Fe	23599.57	P	1604.00	6.80
59	Co	294.46	P	5.09	1.73
60	Ni	137.11	P	11.34	8.27
63	Cu	732.69	P	42.73	5.83
66	Zn	3358.27	P	55.42	1.65
72	Ge	681861.81	P	8779.00	1.29
72	Ge	334988.91	P	2121.00	0.63
72	Ge	1113686.00	A	5501.00	0.49
75	As	167.11	P	7.95	4.76
78	Se	11.56	P	5.18	44.81
88	Sr	1233.43	P	29.63	2.40
90	Zr	1755.72	P	53.57	3.05
95	Mo	147.78	P	5.09	3.45
107	Ag	108.89	P	7.70	7.07
111	Cd	46.39	P	25.15	54.21
115	In	7719022.00	A	109500.00	1.42
118	Sn	315.57	P	38.49	12.20
121	Sb	474.47	P	38.49	8.11
137	Ba	1222.32	P	37.91	3.10
159	Tb	9870292.00	A	91600.00	0.93
182	W	243.34	P	38.44	15.80
205	Tl	400.02	P	29.63	7.41
208	Pb	1727.89	P	27.15	1.57
209	Bi	5903612.00	A	26790.00	0.45
235	U	8.89	P	1.93	21.66
238	U	267.79	P	23.41	8.74

Calibration Blank QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01004
Date Acquired:	May 18 2017 05:33 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	May 18 2017 05:31 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1477556.00	A	11440.00	0.77
7	Li	95805.32	P	1021.00	1.07
9	Be	12.22	P	1.93	15.75
11	B	1314.55	P	62.04	4.72
23	Na	70796.24	P	575.10	0.81
24	Mg	2771.46	P	120.80	4.36
27	Al	3599.44	P	20.10	0.56
28	Si	3567.22	P	49.12	1.38
31	P	28086.55	P	865.70	3.08
39	K	161837.20	P	274.00	0.17
40	Ca	44207.33	P	190.70	0.43
45	Sc	2504049.00	A	7709.00	0.31
45	Sc	599608.88	P	3406.00	0.57
45	Sc	4320355.00	A	47380.00	1.10
47	Ti	106.67	P	12.02	11.27
51	V	5025.32	P	87.39	1.74
52	Cr	3302.61	P	19.83	0.60
55	Mn	3283.81	P	105.10	3.20
56	Fe	5088.83	P	133.40	2.62
59	Co	165.56	P	35.33	21.34
60	Ni	91.78	P	7.90	8.61
63	Cu	430.68	P	8.51	1.98
66	Zn	1000.07	P	33.83	3.38
72	Ge	646366.69	P	5600.00	0.87
72	Ge	316483.00	P	1445.00	0.46
72	Ge	1049262.00	A	18770.00	1.79
75	As	166.22	P	14.30	8.60
78	Se	8.00	P	1.76	22.05
88	Sr	588.92	P	64.76	11.00
90	Zr	1375.67	P	100.10	7.28
95	Mo	62.22	P	6.94	11.15
107	Ag	83.34	P	5.77	6.93
111	Cd	16.48	P	26.60	161.42
115	In	7320842.00	A	78570.00	1.07
118	Sn	161.12	P	21.69	13.46
121	Sb	380.02	P	35.28	9.28
137	Ba	97.78	P	8.39	8.58
159	Tb	9222371.00	A	176400.00	1.91
182	W	174.45	P	19.53	11.20
205	Tl	147.78	P	27.15	18.37
208	Pb	945.60	P	60.03	6.35
209	Bi	5547617.00	A	28970.00	0.52
235	U	8.89	P	5.09	57.28
238	U	56.67	P	6.67	11.77

Calibration Standard QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01005.D\F6E01005.D#
Date Acquired: May 18 2017 05:37 pm
Operator: CCapul
Sample Name: S1 0.5
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:36 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1501663.00	A	28420.00	1.89
7 Li	104508.80	P	603.20	0.58
9 Be	3009.27	P	73.38	2.44
11 B	6589.42	P	129.50	1.97
23 Na	462781.31	P	1778.00	0.38
24 Mg	1072573.00	A	10430.00	0.97
27 Al	1358299.00	A	3563.00	0.26
28 Si	202669.09	P	1140.00	0.56
31 P	63906.63	P	659.00	1.03
39 K	245883.59	P	890.70	0.36
40 Ca	842482.19	M	5159.00	0.61
45 Sc	2591384.00	A	21400.00	0.83
45 Sc	618802.13	P	1421.00	0.23
45 Sc	4420084.00	A	21720.00	0.49
47 Ti	1800.17	P	91.67	5.09
51 V	10532.21	P	129.00	1.22
52 Cr	10368.30	P	57.69	0.56
55 Mn	29604.81	P	297.70	1.01
56 Fe	1140987.00	A	13590.00	1.19
59 Co	21183.57	P	110.10	0.52
60 Ni	2546.90	P	27.36	1.07
63 Cu	7231.58	P	30.15	0.42
66 Zn	8745.13	P	210.80	2.41
72 Ge	673675.38	P	3013.00	0.45
72 Ge	323057.69	P	956.10	0.30
72 Ge	1053043.00	A	16390.00	1.56
75 As	1187.39	P	4.67	0.39
78 Se	436.01	P	14.11	3.24
88 Sr	30205.65	P	503.20	1.67
90 Zr	135918.41	P	1963.00	1.44
95 Mo	5532.37	P	119.40	2.16
107 Ag	15594.54	P	190.30	1.22
111 Cd	3598.85	P	132.70	3.69
115 In	7391781.00	A	25460.00	0.34
118 Sn	9318.96	P	317.80	3.41
121 Sb	13016.39	P	179.00	1.38
137 Ba	4662.06	P	179.40	3.85
159 Tb	9530817.00	A	168400.00	1.77
182 W	10417.69	P	384.60	3.69
205 Tl	23701.61	P	297.40	1.25
208 Pb	33916.91	P	692.40	2.04
209 Bi	5699715.00	A	48920.00	0.86
235 U	265.57	P	15.75	5.93
238 U	33451.18	P	265.80	0.79

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1501663.00	1.89	1477556.10	101.6	60 - 125	
45 Sc	2591383.80	0.83	2504048.50	103.5	60 - 125	
45 Sc	618802.06	0.23	599608.94	103.2	60 - 125	
45 Sc	4420084.00	0.49	4320355.00	102.3	60 - 125	
72 Ge	673675.44	0.45	646366.69	104.2	60 - 125	
72 Ge	323057.72	0.30	316482.97	102.1	60 - 125	
72 Ge	1053043.40	1.56	1049262.10	100.4	60 - 125	
115 In	7391780.50	0.34	7320841.50	101.0	60 - 125	
159 Tb	9530817.00	1.77	9223372.00	103.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01006.D\F6E01006.D#
Date Acquired: May 18 2017 05:42 pm
Operator: CCapul
Sample Name: S2 50
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:40 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1510991.00	A	7066.00	0.47
7 Li	170674.00	P	725.50	0.43
9 Be	29963.23	P	79.48	0.27
11 B	46562.83	P	431.50	0.93
23 Na	35098392.00	A	399500.00	1.14
24 Mg	100196600.00	A	1120000.00	1.12
27 Al	129139500.00	A	498700.00	0.39
28 Si	1022816.00	A	9978.00	0.98
31 P	101240.00	P	1484.00	1.47
39 K	7948099.00	A	150800.00	1.90
40 Ca	70981536.00	A	1216000.00	1.71
45 Sc	2537495.00	A	23470.00	0.92
45 Sc	596682.38	P	4862.00	0.81
45 Sc	4416851.00	A	9841.00	0.22
47 Ti	141143.70	P	620.20	0.44
51 V	551496.31	P	6868.00	1.25
52 Cr	645644.19	P	4249.00	0.66
55 Mn	14603160.00	A	129900.00	0.89
56 Fe	104196100.00	A	2154000.00	2.07
59 Co	2003372.00	A	28100.00	1.40
60 Ni	231117.00	P	2342.00	1.01
63 Cu	590014.81	P	1883.00	0.32
66 Zn	325214.59	P	2187.00	0.67
72 Ge	651865.13	P	2696.00	0.41
72 Ge	312451.31	P	769.10	0.25
72 Ge	1056904.00	A	19980.00	1.89
75 As	97072.11	P	413.00	0.43
78 Se	40730.82	P	151.90	0.37
88 Sr	2895050.00	A	26210.00	0.91
90 Zr	362231.81	P	2261.00	0.62
95 Mo	544005.63	P	1365.00	0.25
107 Ag	144426.91	P	2496.00	1.73
111 Cd	322093.31	P	3876.00	1.20
115 In	7272377.00	A	19120.00	0.26
118 Sn	867139.38	P	3502.00	0.40
121 Sb	241003.09	P	1705.00	0.71
137 Ba	831820.19	P	10030.00	1.21
159 Tb	9222096.00	A	77250.00	0.84
182 W	103207.20	P	915.70	0.89
205 Tl	2262306.00	A	21030.00	0.93
208 Pb	3066317.00	A	14440.00	0.47
209 Bi	5462950.00	A	33230.00	0.61
235 U	23015.24	P	387.30	1.68
238 U	3210639.00	A	17800.00	0.55

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1510991.40	0.47	1477556.10	102.3	60 - 125	
45 Sc	2537494.50	0.92	2504048.50	101.3	60 - 125	
45 Sc	596682.44	0.81	599608.94	99.5	60 - 125	
45 Sc	4416851.00	0.22	4320355.00	102.2	60 - 125	
72 Ge	651865.13	0.41	646366.69	100.9	60 - 125	
72 Ge	312451.31	0.25	316482.97	98.7	60 - 125	
72 Ge	1056903.60	1.89	1049262.10	100.7	60 - 125	
115 In	7272377.50	0.26	7320841.50	99.3	60 - 125	
159 Tb	9222096.00	0.84	9222372.00	100.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01007.D\F6E01007.D#
Date Acquired: May 18 2017 05:46 pm
Operator: CCapul
Sample Name: S3 250
Misc Info:
Vial Number: 1106
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:45 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1506865.00	A	8890.00	0.59
7 Li	480402.19	P	6363.00	1.32
9 Be	154459.59	P	1578.00	1.02
11 B	217491.20	P	2975.00	1.37
23 Na	182870500.00	A	2182000.00	1.19
24 Mg	518930590.00	A	7466000.00	1.44
27 Al	675125310.00	A	5403000.00	0.80
28 Si	5256352.00	A	101700.00	1.93
31 P	421925.50	P	5673.00	1.34
39 K	40826752.00	A	407200.00	1.00
40 Ca	369495620.00	A	6419000.00	1.74
45 Sc	2572992.00	A	29460.00	1.15
45 Sc	612197.00	P	9220.00	1.51
45 Sc	4537549.00	A	77420.00	1.71
47 Ti	742240.88	P	5476.00	0.74
51 V	2802892.00	A	24490.00	0.87
52 Cr	3238614.00	A	18090.00	0.56
55 Mn	74748952.00	A	1257000.00	1.68
56 Fe	531144290.00	A	1656000.00	0.31
59 Co	9848143.00	A	80470.00	0.82
60 Ni	1110942.00	A	9801.00	0.88
63 Cu	2834362.00	A	23430.00	0.83
66 Zn	1652635.00	A	5244.00	0.32
72 Ge	645254.00	P	3867.00	0.60
72 Ge	313035.19	P	1008.00	0.32
72 Ge	1081023.00	A	9405.00	0.87
75 As	499258.41	P	1509.00	0.30
78 Se	204233.91	P	2007.00	0.98
88 Sr	14547040.00	A	130000.00	0.89
90 Zr	928444.00	M	24050.00	2.59
95 Mo	2773971.00	A	31870.00	1.15
107 Ag	707554.88	P	5433.00	0.77
111 Cd	1612764.00	A	830.90	0.05
115 In	6979480.00	A	108300.00	1.55
118 Sn	4239882.00	A	13240.00	0.31
121 Sb	1209559.00	A	16520.00	1.37
137 Ba	4159357.00	A	37000.00	0.89
159 Tb	8950726.00	A	143200.00	1.60
182 W	511366.31	P	7774.00	1.52
205 Tl	10888400.00	A	61230.00	0.56
208 Pb	14780770.00	A	117400.00	0.79
209 Bi	5168475.00	A	25440.00	0.49
235 U	114659.80	P	470.20	0.41
238 U	15518140.00	A	49020.00	0.32

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1506864.90	0.59	1477556.10	102.0	60 - 125	
45 Sc	2572991.80	1.15	2504048.50	102.8	60 - 125	
45 Sc	612197.00	1.51	599608.94	102.1	60 - 125	
45 Sc	4537549.00	1.71	4320355.00	105.0	60 - 125	
72 Ge	645254.06	0.60	646366.69	99.8	60 - 125	
72 Ge	313035.25	0.32	316482.97	98.9	60 - 125	
72 Ge	1081022.80	0.87	1049262.10	103.0	60 - 125	
115 In	6979480.00	1.55	7320841.50	95.3	60 - 125	
159 Tb	8950726.00	1.60	9222372.00	97.1	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01008.D\F6E01008.D#
Date Acquired: May 18 2017 05:51 pm
Operator: CCapul
Sample Name: S4 500
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:49 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1635514.00	A	26430.00	1.62
7 Li	949971.88	A	22580.00	2.38
9 Be	319791.91	P	3117.00	0.97
11 B	457229.69	P	6882.00	1.51
23 Na	395063710.00	A	8425000.00	2.13
24 Mg	1103345000.00	A	9536000.00	0.86
27 Al	1423319000.00	A	8731000.00	0.61
28 Si	11174430.00	A	280000.00	2.51
31 P	911993.13	A	13320.00	1.46
39 K	89150152.00	A	161600.00	0.18
40 Ca	795019070.00	A	19650000.00	2.47
45 Sc	2772372.00	A	33290.00	1.20
45 Sc	657843.13	P	4494.00	0.68
45 Sc	5012377.00	A	82350.00	1.64
47 Ti	1636536.00	A	17350.00	1.06
51 V	5861907.00	A	34940.00	0.60
52 Cr	6751076.00	A	32220.00	0.48
55 Mn	158993410.00	A	757600.00	0.48
56 Fe	1126402000.00	A	10470000.00	0.93
59 Co	20989250.00	A	134600.00	0.64
60 Ni	2333117.00	A	4938.00	0.21
63 Cu	5754211.00	A	40960.00	0.71
66 Zn	3461046.00	A	28710.00	0.83
72 Ge	671805.19	P	15270.00	2.27
72 Ge	330426.00	P	2161.00	0.65
72 Ge	1170594.00	A	23690.00	2.02
75 As	1017595.00	A	8841.00	0.87
78 Se	426913.59	P	5158.00	1.21
88 Sr	30579600.00	A	103700.00	0.34
90 Zr	2127858.00	A	15930.00	0.75
95 Mo	5831212.00	A	70400.00	1.21
107 Ag	1448055.00	A	8424.00	0.58
111 Cd	3321886.00	A	10740.00	0.32
115 In	7281542.00	A	34800.00	0.48
118 Sn	8809607.00	A	126100.00	1.43
121 Sb	2519229.00	A	36110.00	1.43
137 Ba	8532069.00	A	106800.00	1.25
159 Tb	9298069.00	A	158300.00	1.70
182 W	1069926.00	A	12680.00	1.19
205 Tl	21947310.00	A	289500.00	1.32
208 Pb	29743620.00	A	241000.00	0.81
209 Bi	5247071.00	A	15780.00	0.30
235 U	235606.41	P	184.10	0.08
238 U	32099030.00	A	285800.00	0.89

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1635513.60	1.62	1477556.10	110.7	60 - 125	
45 Sc	2772372.30	1.20	2504048.50	110.7	60 - 125	
45 Sc	657843.06	0.68	599608.94	109.7	60 - 125	
45 Sc	5012376.50	1.64	4320355.00	116.0	60 - 125	
72 Ge	671805.19	2.27	646366.69	103.9	60 - 125	
72 Ge	330425.97	0.65	316482.97	104.4	60 - 125	
72 Ge	1170594.00	2.02	1049262.10	111.6	60 - 125	
115 In	7281541.50	0.48	7320841.50	99.5	60 - 125	
159 Tb	9298069.00	1.70	9222372.00	100.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

ICV QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01009.D\F6E01009.D#
Date Acquired:	May 18 2017 05:55 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	29.53	ppb	552688.1	0.38	30.00	90 - 110	
9 Be	29.15	ppb	182014.6	1.44	30.00	90 - 110	
11 B	26.87	ppb	125761.6	2.34	30.00	90 - 110	Fail
23 Na	28530.00	ppb	226525600.0	0.47	30000.00	90 - 110	
24 Mg	29170.00	ppb	621722180.0	0.96	30000.00	90 - 110	
27 Al	29010.00	ppb	815752830.0	1.02	30000.00	90 - 110	
28 Si	2948.00	ppb	6377449.0	0.99	3000.00	90 - 110	
31 P	282.10	ppb	495715.6	0.96	300.00	90 - 110	
39 K	30050.00	ppb	50765840.0	1.18	30000.00	90 - 110	
40 Ca	28710.00	ppb	452798210.0	0.97	30000.00	90 - 110	
47 Ti	301.50	ppb	913510.5	0.66	300.00	90 - 110	
51 V	286.50	ppb	3278685.0	1.22	300.00	90 - 110	
52 Cr	279.20	ppb	3800340.0	1.66	300.00	90 - 110	
55 Mn	1801.00	ppb	95692968.0	1.48	2000.00	90 - 110	
56 Fe	28640.00	ppb	637275010.0	0.83	30000.00	90 - 110	
59 Co	260.10	ppb	11607470.0	0.85	300.00	90 - 110	Fail
60 Ni	278.20	ppb	1303297.0	1.21	300.00	90 - 110	
63 Cu	262.50	ppb	3291686.0	1.22	300.00	90 - 110	Fail
66 Zn	291.50	ppb	1979912.0	1.66	300.00	90 - 110	
75 As	290.20	ppb	581117.8	0.52	300.00	90 - 110	
78 Se	292.90	ppb	242817.1	0.83	300.00	90 - 110	
88 Sr	281.90	ppb	17116450.0	1.71	300.00	90 - 110	
90 Zr	20.49	ppb	1159609.0	2.43	30.00	90 - 110	Fail
95 Mo	309.90	ppb	3308789.0	1.14	300.00	90 - 110	
107 Ag	28.13	ppb	807642.1	0.82	30.00	90 - 110	
111 Cd	295.50	ppb	1912878.0	0.60	300.00	90 - 110	
118 Sn	302.80	ppb	5139427.0	0.41	300.00	90 - 110	
121 Sb	61.66	ppb	1485467.0	0.76	60.00	90 - 110	
137 Ba	303.70	ppb	2521649.0	1.71	300.00	90 - 110	
182 W	28.73	ppb	604794.4	0.72	30.00	90 - 110	
205 Tl	281.50	ppb	12504870.0	0.89	300.00	90 - 110	
208 Pb	283.30	ppb	17129680.0	1.43	300.00	90 - 110	
235 U	1.96	ppb	133937.2	1.61	2.20	90 - 110	Fail
238 U	287.60	ppb	18524540.0	1.57	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1571522.1	1.03	1477556.10	106.4	60 - 125	
45 Sc	2719253.3	1.28	2504048.50	108.6	60 - 125	
45 Sc	632662.7	1.74	599608.94	105.5	60 - 125	
45 Sc	4720672.5	1.02	4320355.00	109.3	60 - 125	
72 Ge	660280.8	0.69	646366.69	102.2	60 - 125	
72 Ge	318358.2	0.82	316482.97	100.6	60 - 125	
72 Ge	1114678.8	1.64	1049262.10	106.2	60 - 125	
115 In	7113384.0	0.63	7320841.50	97.2	60 - 125	
159 Tb	9205111.0	0.71	9222372.00	99.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes:	Fail
ISTD:	Pass

ICB QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01010.D\F6E01010.D#
Date Acquired:	May 18 2017 05:59 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1405	ppb	105350.5	4.47	0.20	
9 Be	-0.0001	ppb	13.3	733.53	0.10	
11 B	0.1220	ppb	2466.9	8.27	5.00	
23 Na	4.0080	ppb	108382.0	7.89	40.00	
24 Mg	0.6530	ppb	17288.3	18.16	10.00	
27 Al	0.4947	ppb	18189.4	23.31	20.00	
28 Si	1.5870	ppb	7202.7	18.83	20.00	
31 P	0.2229	ppb	29662.4	137.86	10.00	
39 K	7.3860	ppb	184188.8	18.83	20.00	
40 Ca	1.6060	ppb	72395.5	4.52	25.00	
47 Ti	0.0252	ppb	202.2	50.30	0.50	
51 V	-0.0136	ppb	5176.3	37.61	0.50	
52 Cr	-0.0256	ppb	3248.6	6.32	0.20	
55 Mn	0.0716	ppb	7846.8	17.00	0.20	
56 Fe	3.7750	ppb	88345.5	6.63	10.00	
59 Co	0.0025	ppb	383.4	31.45	0.20	
60 Ni	0.0067	ppb	144.4	41.15	0.20	
63 Cu	0.0658	ppb	1367.9	3.07	0.40	
66 Zn	0.0098	ppb	1176.8	194.19	2.00	
75 As	0.0575	ppb	289.3	9.82	0.20	
78 Se	0.0709	ppb	70.0	30.07	0.20	
90 Zr	-0.0363	ppb	1194.5	3.42	2.00	
95 Mo	0.1050	ppb	1304.6	10.75	0.40	
107 Ag	0.0038	ppb	211.1	18.87	0.20	
111 Cd	0.0032	ppb	48.7	126.12	0.20	
118 Sn	0.1295	ppb	2602.6	11.61	0.20	
121 Sb	0.0134	ppb	771.2	25.53	0.40	
137 Ba	0.0044	ppb	145.6	132.92	0.20	
182 W	0.0230	ppb	691.2	18.94	1.00	
205 Tl	0.0315	ppb	1641.3	6.79	0.20	
208 Pb	0.0356	ppb	3308.1	7.65	0.10	
235 U	0.0002	ppb	24.4	113.07	1.00	
238 U	0.0321	ppb	2251.4	6.36	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1669284.5	0.78	1477556.10	113.0	60 - 125	
45 Sc	2684273.8	1.02	2504048.50	107.2	60 - 125	
45 Sc	641803.1	0.76	599608.94	107.0	60 - 125	
45 Sc	4819006.5	1.24	4320355.00	111.5	60 - 125	
72 Ge	691410.8	1.11	646366.69	107.0	60 - 125	
72 Ge	324150.3	1.07	316482.97	102.4	60 - 125	
72 Ge	1128845.0	1.13	1049262.10	107.6	60 - 125	
115 In	7856978.0	0.76	7320841.50	107.3	60 - 125	
159 Tb	9756542.0	0.71	9222372.00	105.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01011.D\F6E01011.D#
Date Acquired: May 18 2017 06:03 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: MRLE1801
Misc Info: 1/100/10 ppb
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	115941.7	0.0000	0.8129	ppb	9.75	50.00	
9 Be	# 3	6	6153.7	0.0000	0.9649	ppb	2.57	50.00	
11 B	# 3	6	47547.1	0.0000	9.7240	ppb	1.11	100.00	
23 Na	# 1	45	841217.3	0.0000	102.8000	ppb	1.64	50000.00	
24 Mg	# 3	45	2184337.0	0.0000	106.5000	ppb	1.20	50000.00	
27 Al	# 3	45	2775182.0	0.0000	102.5000	ppb	0.66	50000.00	
28 Si	# 1	45	10500.7	0.0000	3.3740	ppb	4.94	5000.00	
31 P	# 3	45	106913.8	0.0000	49.8400	ppb	0.55	500.00	
39 K	# 2	45	344159.2	0.0000	109.8000	ppb	1.73	50000.00	
40 Ca	# 1	45	1628670.0	0.0000	106.7000	ppb	1.48	50000.00	
47 Ti	# 3	45	3342.7	0.0000	1.1070	ppb	2.48	500.00	
51 V	# 2	45	16458.0	0.0000	1.0220	ppb	0.81	500.00	
52 Cr	# 2	45	16458.7	0.0000	0.9840	ppb	0.04	500.00	
55 Mn	# 3	45	58903.5	0.0000	1.0800	ppb	1.08	3000.00	
56 Fe	# 1	45	2210930.0	0.0000	105.4000	ppb	0.98	50000.00	
59 Co	# 3	45	42356.1	0.0000	0.9811	ppb	1.40	500.00	
60 Ni	# 2	45	4886.8	0.0000	1.0500	ppb	1.35	500.00	
63 Cu	# 2	45	13717.5	0.0000	1.0840	ppb	0.91	500.00	
66 Zn	# 3	72	70926.9	0.0000	10.5300	ppb	0.89	500.00	
75 As	# 2	72	2137.1	0.0000	0.9997	ppb	2.16	500.00	
78 Se	# 1	72	842.7	0.0000	1.0070	ppb	3.73	500.00	
88 Sr	# 3	72	124578.4	0.0000	2.0880	ppb	0.31	500.00	
90 Zr	# 3	72	107291.1	0.0000	1.8880	ppb	1.80	50.00	
95 Mo	# 3	115	11823.0	0.0000	1.0330	ppb	1.41	500.00	
107 Ag	# 3	115	30708.2	0.0000	1.0000	ppb	0.63	50.00	
111 Cd	# 3	115	6748.0	0.0000	0.9740	ppb	2.30	500.00	
118 Sn	# 3	115	19291.5	0.0000	1.0560	ppb	1.61	500.00	
121 Sb	# 3	115	25588.2	0.0000	0.9806	ppb	0.47	500.00	
137 Ba	# 3	115	8785.3	0.0000	0.9808	ppb	1.38	1000.00	
182 W	# 3	159	40854.3	0.0000	1.8730	ppb	2.05	50.00	
205 Tl	# 3	159	47681.1	0.0000	1.0370	ppb	1.73	500.00	
208 Pb	# 3	159	65819.6	0.0000	1.0390	ppb	1.57	500.00	
235 U	# 3	159	426.7	0.0000	0.0059	ppb	3.34	30.00	
238 U	# 3	159	63965.2	0.0000	0.9615	ppb	1.76	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1601747.00	1.02	1477556.10	108.4	60 - 125	
45 Sc # 1	2557975.00	0.41	2504048.50	102.2	60 - 125	
45 Sc # 2	614908.69	0.97	599608.94	102.6	60 - 125	
45 Sc # 3	4539034.00	1.24	4320355.00	105.1	60 - 125	
72 Ge # 1	659933.63	0.85	646366.69	102.1	60 - 125	
72 Ge # 2	313486.94	0.93	316482.97	99.1	60 - 125	
72 Ge # 3	1089456.80	1.38	1049262.10	103.8	60 - 125	
115 In # 3	7586306.50	1.35	7320841.50	103.6	60 - 125	
159 Tb # 3	9500368.00	1.82	9222372.00	103.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01012.D\F6E01012.D#
Date Acquired: May 18 2017 06:08 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: MRLE1802
Misc Info: 0.5/50/4 ppb
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	114037.8	0.0000	0.4605	ppb	12.53	50.00	
9 Be	# 3	6	3273.8	0.0000	0.4961	ppb	1.82	50.00	
11 B	# 3	6	7284.2	0.0000	1.1180	ppb	2.91	100.00	
23 Na	# 1	45	500179.4	0.0000	53.7800	ppb	2.20	50000.00	
24 Mg	# 3	45	1195723.0	0.0000	55.2600	ppb	1.92	50000.00	
27 Al	# 3	45	1513568.0	0.0000	53.0100	ppb	1.81	50000.00	
28 Si	# 1	45	18392.8	0.0000	6.7960	ppb	0.28	5000.00	
31 P	# 3	45	29453.6	0.0000	0.2386	ppb	175.15	500.00	
39 K	# 2	45	264304.0	0.0000	49.8500	ppb	6.68	50000.00	
40 Ca	# 1	45	904004.5	0.0000	54.8000	ppb	0.81	50000.00	
47 Ti	# 3	45	1671.3	0.0000	0.5044	ppb	6.98	500.00	
51 V	# 2	45	11688.4	0.0000	0.5192	ppb	1.74	500.00	
52 Cr	# 2	45	10380.3	0.0000	0.4696	ppb	1.40	500.00	
55 Mn	# 3	45	33391.9	0.0000	0.5473	ppb	2.51	3000.00	
56 Fe	# 1	45	1204054.0	0.0000	54.3600	ppb	1.06	50000.00	
59 Co	# 3	45	23333.5	0.0000	0.5103	ppb	1.65	500.00	
60 Ni	# 2	45	2753.2	0.0000	0.5391	ppb	2.46	500.00	
63 Cu	# 2	45	7930.2	0.0000	0.5638	ppb	2.63	500.00	
66 Zn	# 3	72	31358.5	0.0000	4.3380	ppb	1.44	500.00	
75 As	# 2	72	1277.8	0.0000	0.5208	ppb	4.99	500.00	
78 Se	# 1	72	461.8	0.0000	0.5218	ppb	1.15	500.00	
88 Sr	# 3	72	32831.3	0.0000	0.5160	ppb	1.85	500.00	
90 Zr	# 3	72	4131.8	0.0000	0.0141	ppb	22.54	50.00	
95 Mo	# 3	115	6437.2	0.0000	0.5364	ppb	3.82	500.00	
107 Ag	# 3	115	4812.1	0.0000	0.1478	ppb	3.35	50.00	
111 Cd	# 3	115	3600.0	0.0000	0.4961	ppb	4.34	500.00	
118 Sn	# 3	115	10384.2	0.0000	0.5406	ppb	0.38	500.00	
121 Sb	# 3	115	14152.0	0.0000	0.5125	ppb	0.86	500.00	
137 Ba	# 3	115	4976.6	0.0000	0.5272	ppb	0.80	1000.00	
182 W	# 3	159	327.8	0.0000	0.0064	ppb	9.45	50.00	
205 Tl	# 3	159	25597.4	0.0000	0.5313	ppb	1.78	500.00	
208 Pb	# 3	159	36378.5	0.0000	0.5423	ppb	1.58	500.00	
235 U	# 3	159	290.0	0.0000	0.0038	ppb	18.32	30.00	
238 U	# 3	159	34981.9	0.0000	0.5031	ppb	1.74	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1653746.50	0.10	1477556.10	111.9	60 - 125	
45 Sc # 1	2694831.80	2.69	2504048.50	107.6	60 - 125	
45 Sc # 2	660887.19	1.93	599608.94	110.2	60 - 125	
45 Sc # 3	4781466.00	1.37	4320355.00	110.7	60 - 125	
72 Ge # 1	691704.88	1.67	646366.69	107.0	60 - 125	
72 Ge # 2	335879.81	1.23	316482.97	106.1	60 - 125	
72 Ge # 3	1144380.60	0.27	1049262.10	109.1	60 - 125	
115 In # 3	7915452.50	1.42	7320841.50	108.1	60 - 125	
159 Tb # 3	9920749.00	0.77	9222372.00	107.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01013.D\F6E01013.D#
Date Acquired:	May 18 2017 06:12 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.34	ppb	94585.4	24.90	---	
9 Be	0.01	ppb	83.3	22.01	---	
11 B	0.64	ppb	4172.9	2.25	---	
23 Na	99210.00	ppb	752911230.0	1.30	120000.00	
24 Mg	96660.00	ppb	1994388000.0	2.56	120000.00	
27 Al	94270.00	ppb	2566875900.0	0.95	120000.00	
28 Si	6.62	ppb	17366.3	1.53	---	
31 P	96860.00	ppb	155276190.0	1.74	---	
39 K	100800.00	ppb	171145100.0	1.16	120000.00	
40 Ca	100200.00	ppb	1510938000.0	0.58	120000.00	
47 Ti	2136.00	ppb	6265738.0	0.32	2400.00	
51 V	-0.01	ppb	5150.9	10.76	---	
52 Cr	1.23	ppb	20470.5	0.05	---	
55 Mn	0.18	ppb	13084.0	2.40	---	
56 Fe	97500.00	ppb	2073764000.0	0.25	120000.00	
59 Co	0.22	ppb	9752.5	3.42	---	
60 Ni	0.18	ppb	980.9	4.07	---	
63 Cu	0.63	ppb	8507.8	1.27	---	
66 Zn	1.84	ppb	13765.8	2.59	---	
75 As	0.19	ppb	544.2	2.66	---	
78 Se	0.08	ppb	72.9	18.16	---	
88 Sr	0.62	ppb	38665.6	0.16	---	
90 Zr	0.25	ppb	17815.9	2.89	---	
95 Mo	2132.00	ppb	21864900.0	1.07	2400.00	
107 Ag	0.02	ppb	697.8	1.69	---	
111 Cd	0.22	ppb	1388.6	5.06	---	
118 Sn	0.04	ppb	835.6	10.83	---	
121 Sb	0.05	ppb	1622.4	4.27	---	
137 Ba	0.11	ppb	930.1	3.62	---	
182 W	0.12	ppb	2597.0	3.84	---	
205 Tl	0.01	ppb	470.0	5.69	---	
208 Pb	0.21	ppb	12935.1	1.00	---	
235 U	0.00	ppb	26.7	57.93	---	
238 U	0.01	ppb	430.0	6.41	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1394811.8	0.69	1477556.10	94.4	60 - 125	
45 Sc	2599083.8	1.46	2504048.50	103.8	60 - 125	
45 Sc	636885.4	0.54	599608.94	106.2	60 - 125	
45 Sc	4571475.0	1.68	4320355.00	105.8	60 - 125	
72 Ge	636934.8	2.20	646366.69	98.5	60 - 125	
72 Ge	319337.3	0.61	316482.97	100.9	60 - 125	
72 Ge	1128497.3	0.55	1049262.10	107.6	60 - 125	
115 In	6832432.0	1.10	7320841.50	93.3	60 - 125	
159 Tb	8849205.0	1.26	9222372.00	96.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01014.D\F6E01014.D#
Date Acquired:	May 18 2017 06:17 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSAB
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.92	ppb	344328.5	1.25	20.00	80 - 120	
9 Be	20.97	ppb	107088.5	1.22	20.00	80 - 120	
11 B	19.58	ppb	75349.0	0.71	20.00	80 - 120	
23 Na	96560.00	ppb	724989180.0	1.09	100000.00	80 - 120	
24 Mg	93470.00	ppb	1911249000.0	0.28	100000.00	80 - 120	
27 Al	91980.00	ppb	2481486100.0	0.67	100000.00	80 - 120	
28 Si	201.40	ppb	415364.1	1.31	200.00	80 - 120	
31 P	93800.00	ppb	148994000.0	0.74	100000.00	80 - 120	
39 K	103200.00	ppb	167590700.0	1.00	100000.00	80 - 120	
40 Ca	98590.00	ppb	1470479000.0	2.20	100000.00	80 - 120	
47 Ti	2126.00	ppb	6177513.0	1.16	2000.00	80 - 120	
51 V	20.02	ppb	225431.3	0.97	20.00	80 - 120	
52 Cr	20.48	ppb	271816.3	1.57	20.00	80 - 120	
55 Mn	19.77	ppb	1011675.0	0.35	20.00	80 - 120	
56 Fe	97780.00	ppb	2057822000.0	0.47	100000.00	80 - 120	
59 Co	18.24	ppb	781246.0	0.91	20.00	80 - 120	
60 Ni	19.22	ppb	86873.7	0.75	20.00	80 - 120	
63 Cu	18.41	ppb	222918.8	1.62	20.00	80 - 120	
66 Zn	20.25	ppb	139076.4	0.50	20.00	80 - 120	
75 As	20.51	ppb	40288.0	0.65	20.00	80 - 120	
78 Se	21.93	ppb	17167.9	0.54	20.00	80 - 120	
88 Sr	19.43	ppb	1184769.0	1.46	20.00	80 - 120	
90 Zr	5.59	ppb	319716.0	1.45	20.00	80 - 120	Fail
95 Mo	2149.00	ppb	22018700.0	1.84	2000.00	80 - 120	
107 Ag	19.29	ppb	531349.0	1.13	20.00	80 - 120	
111 Cd	19.97	ppb	124061.9	0.45	20.00	80 - 120	
118 Sn	20.42	ppb	332627.6	0.96	20.00	80 - 120	
121 Sb	20.57	ppb	475807.5	0.83	20.00	80 - 120	
137 Ba	20.72	ppb	165177.7	1.86	20.00	80 - 120	
182 W	18.58	ppb	377947.1	1.27	20.00	80 - 120	
205 Tl	19.03	ppb	816749.7	1.58	20.00	80 - 120	
208 Pb	19.44	ppb	1136769.0	0.92	20.00	80 - 120	
235 U	0.13	ppb	8836.6	3.27	0.14	80 - 120	
238 U	19.31	ppb	1201509.0	1.63	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1285259.8	0.84	1477556.10	87.0	60 - 125	
45 Sc	2571724.5	0.71	2504048.50	102.7	60 - 125	
45 Sc	609586.6	1.30	599608.94	101.7	60 - 125	
45 Sc	4528793.0	0.53	4320355.00	104.8	60 - 125	
72 Ge	623244.1	1.78	646366.69	96.4	60 - 125	
72 Ge	311054.6	0.87	316482.97	98.3	60 - 125	
72 Ge	1118666.4	1.02	1049262.10	106.6	60 - 125	
115 In	6826248.0	0.67	7320841.50	93.2	60 - 125	
159 Tb	8894826.0	0.64	9222372.00	96.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01016.D\F6E01016.D#
Date Acquired: May 18 2017 06:26 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:53 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.86 ppb	0.14	25.00	90 - 110	
9 Be	26.23 ppb	1.21	25.00	90 - 110	
11 B	50.43 ppb	1.07	50.00	90 - 110	
23 Na	23750.00 ppb	0.89	25000.00	90 - 110	
24 Mg	24540.00 ppb	0.60	25000.00	90 - 110	
27 Al	23880.00 ppb	2.63	25000.00	90 - 110	
28 Si	2425.00 ppb	1.03	2500.00	90 - 110	
31 P	230.60 ppb	1.24	250.00	90 - 110	
39 K	25310.00 ppb	0.78	25000.00	90 - 110	
40 Ca	24310.00 ppb	0.15	25000.00	90 - 110	
47 Ti	251.60 ppb	0.26	250.00	90 - 110	
51 V	253.50 ppb	0.92	250.00	90 - 110	
52 Cr	242.80 ppb	1.97	250.00	90 - 110	
55 Mn	1468.00 ppb	1.44	1500.00	90 - 110	
56 Fe	24820.00 ppb	1.87	25000.00	90 - 110	
59 Co	230.70 ppb	2.02	250.00	90 - 110	
60 Ni	244.30 ppb	1.12	250.00	90 - 110	
63 Cu	232.00 ppb	1.33	250.00	90 - 110	
66 Zn	250.50 ppb	1.55	250.00	90 - 110	
75 As	251.30 ppb	0.42	250.00	90 - 110	
78 Se	252.80 ppb	0.22	250.00	90 - 110	
88 Sr	249.70 ppb	1.76	250.00	90 - 110	
90 Zr	16.96 ppb	2.81	25.00	90 - 110	Fail
95 Mo	261.20 ppb	2.55	250.00	90 - 110	
107 Ag	25.29 ppb	0.55	25.00	90 - 110	
111 Cd	255.10 ppb	0.12	250.00	90 - 110	
118 Sn	256.70 ppb	1.65	250.00	90 - 110	
121 Sb	51.18 ppb	1.52	50.00	90 - 110	
137 Ba	514.60 ppb	2.25	500.00	90 - 110	
182 W	24.81 ppb	1.51	25.00	90 - 110	
205 Tl	252.30 ppb	1.46	250.00	90 - 110	
208 Pb	251.80 ppb	0.20	250.00	90 - 110	
235 U	1.72 ppb	0.49	1.80	90 - 110	
238 U	246.20 ppb	0.58	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1360392.10	1.03	1477556.10	92.1	60 - 125	
45 Sc	2627157.80	1.67	2504048.50	104.9	60 - 125	
45 Sc	603661.69	0.85	599608.94	100.7	60 - 125	
45 Sc	4670890.00	1.76	4320355.00	108.1	60 - 125	
72 Ge	649646.38	0.75	646366.69	100.5	60 - 125	
72 Ge	308793.91	0.53	316482.97	97.6	60 - 125	
72 Ge	1133491.00	2.80	1049262.10	108.0	60 - 125	
115 In	7498926.50	1.69	7320841.50	102.4	60 - 125	
159 Tb	9734387.00	0.45	9222372.00	105.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01017.D\F6E01017.D#
Date Acquired:	May 18 2017 06:30 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	CCB1
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0994	ppb	88277.4	71.11	0.20	
9 Be	0.0013	ppb	18.9	53.73	0.10	
11 B	0.1599	ppb	2209.1	19.02	5.00	
23 Na	7.7100	ppb	128959.8	5.81	40.00	
24 Mg	0.7659	ppb	18466.3	9.75	10.00	
27 Al	0.5380	ppb	18187.1	13.40	20.00	
28 Si	1.0380	ppb	5662.4	5.91	20.00	
31 P	-1.1240	ppb	25567.2	15.37	10.00	
39 K	4.8240	ppb	165506.2	21.41	20.00	
40 Ca	1.2760	ppb	63123.8	6.80	25.00	
47 Ti	0.0297	ppb	202.2	24.84	0.50	
51 V	0.0339	ppb	5271.0	23.73	0.50	
52 Cr	-0.0295	ppb	2939.9	21.52	0.20	
55 Mn	0.0330	ppb	5375.6	11.85	0.20	
56 Fe	3.5100	ppb	77479.7	6.39	10.00	
59 Co	0.0002	ppb	262.2	140.40	0.20	
60 Ni	0.0045	ppb	123.1	15.76	0.20	
63 Cu	0.0349	ppb	897.4	7.83	0.40	
66 Zn	0.0082	ppb	1140.1	117.12	2.00	
75 As	0.0263	ppb	215.6	19.94	0.20	
78 Se	0.0327	ppb	34.9	15.54	0.20	
88 Sr	0.0045	ppb	902.3	27.75	0.20	
90 Zr	-0.0460	ppb	627.8	2.12	2.00	
95 Mo	0.1183	ppb	1460.1	8.10	0.40	
107 Ag	0.0008	ppb	116.7	63.22	0.20	
111 Cd	0.0020	ppb	40.6	47.97	0.20	
118 Sn	0.0688	ppb	1462.4	3.52	0.20	
121 Sb	0.0246	ppb	1067.9	13.86	0.40	
137 Ba	0.0125	ppb	220.0	19.90	0.20	
182 W	0.0107	ppb	432.2	22.14	1.00	
205 Tl	0.0114	ppb	720.0	16.16	0.20	
208 Pb	0.0051	ppb	1404.5	21.68	0.10	
235 U	0.0003	ppb	28.9	44.77	1.00	
238 U	0.0223	ppb	1634.6	13.90	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1390022.8	0.88	1477556.10	94.1	60 - 125	
45 Sc	2519835.5	1.43	2504048.50	100.6	60 - 125	
45 Sc	590730.6	0.87	599608.94	98.5	60 - 125	
45 Sc	4499722.0	1.38	4320355.00	104.2	60 - 125	
72 Ge	653567.0	0.47	646366.69	101.1	60 - 125	
72 Ge	309446.9	0.73	316482.97	97.8	60 - 125	
72 Ge	1103030.8	0.98	1049262.10	105.1	60 - 125	
115 In	7847228.0	0.50	7320841.50	107.2	60 - 125	
159 Tb	10094537.0	0.30	9222372.00	109.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01018.D\F6E01018.D#
Date Acquired:	May 18 2017 06:35 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	IME013WB
Misc Info:	
Vial Number:	2101
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	MBW
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0274	ppb	87728.9	427.84	1.00	
9 Be	0.0024	ppb	24.4	40.59	0.50	
11 B	0.3845	ppb	3072.6	2.42	5.00	
23 Na	13.5200	ppb	168175.8	2.73	50.00	
24 Mg	2.4150	ppb	51950.3	8.46	50.00	
27 Al	2.6660	ppb	75189.9	1.00	50.00	
28 Si	2.3230	ppb	8065.7	4.65	25.00	
31 P	-0.6311	ppb	26342.8	50.75	25.00	
39 K	1.4630	ppb	160966.2	171.77	50.00	
40 Ca	22.0800	ppb	359659.6	0.89	50.00	
47 Ti	0.0983	ppb	400.0	5.69	1.00	
51 V	0.0587	ppb	5561.7	8.74	0.50	
52 Cr	-0.0221	ppb	3048.6	26.45	0.50	
55 Mn	0.1052	ppb	9033.0	1.27	0.50	
56 Fe	3.1490	ppb	68612.4	1.10	50.00	
59 Co	-0.0009	ppb	215.6	80.81	0.50	
60 Ni	0.0340	ppb	253.3	15.73	0.50	
63 Cu	0.1162	ppb	1857.7	2.43	0.50	
66 Zn	1.0730	ppb	8360.4	1.10	10.00	
75 As	0.0134	ppb	190.9	78.77	0.50	
78 Se	0.0138	ppb	19.1	21.22	0.50	
88 Sr	0.0549	ppb	3965.1	4.71	1.00	
90 Zr	-0.0427	ppb	821.2	1.57	2.50	
95 Mo	0.0552	ppb	723.4	2.23	1.00	
107 Ag	0.0004	ppb	103.3	182.75	0.50	
111 Cd	-0.0022	ppb	10.4	28.28	0.50	
118 Sn	0.0347	ppb	832.3	10.72	0.50	
121 Sb	0.0431	ppb	1573.5	6.55	0.50	
137 Ba	0.1154	ppb	1173.4	5.45	0.50	
182 W	0.0025	ppb	241.1	47.24	1.00	
205 Tl	0.0041	ppb	362.2	23.29	0.50	
208 Pb	0.0273	ppb	2852.5	3.63	0.50	
235 U	0.0000	ppb	13.3	269.17	---	
238 U	0.0071	ppb	558.9	8.00	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1366135.1	1.10	1477556.10	92.5	60 - 125	
45 Sc	2468033.5	0.89	2504048.50	98.6	60 - 125	
45 Sc	593597.0	1.49	599608.94	99.0	60 - 125	
45 Sc	4499041.5	0.37	4320355.00	104.1	60 - 125	
72 Ge	642891.1	0.30	646366.69	99.5	60 - 125	
72 Ge	310410.9	1.22	316482.97	98.1	60 - 125	
72 Ge	1112052.1	1.38	1049262.10	106.0	60 - 125	
115 In	7923518.0	0.79	7320841.50	108.2	60 - 125	
159 Tb	10010376.0	0.05	9222372.00	108.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01019.D\F6E01019.D#
Date Acquired:	May 18 2017 06:40 pm
Operator:	CCapul
Sample Name:	IME013WL
Misc Info:	
Vial Number:	2102
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	471340.41	30.41	ppb	0.49	30.00	80 - 120	
9 Be	162678.30	31.29	ppb	1.44	30.00	80 - 120	
11 B	113905.30	29.26	ppb	1.02	30.00	80 - 120	
23 Na	20008200.00	2836.00	ppb	0.74	3000.00	80 - 120	
24 Mg	58176192.00	2892.00	ppb	1.46	3000.00	80 - 120	
27 Al	73773360.00	2780.00	ppb	0.89	3000.00	80 - 120	
28 Si	13738.96	5.39	ppb	8.43	3000.00	80 - 120	Fail
31 P	27177.18	0.07	ppb	568.91	300.00	80 - 120	Fail
39 K	4781627.00	3024.00	ppb	1.14	3000.00	80 - 120	
40 Ca	41050300.00	2936.00	ppb	0.83	3000.00	80 - 120	
47 Ti	82932.50	28.97	ppb	1.50	30.00	80 - 120	
51 V	318672.41	30.24	ppb	1.30	30.00	80 - 120	
52 Cr	376846.59	30.23	ppb	0.57	30.00	80 - 120	
55 Mn	1500768.00	29.85	ppb	2.22	30.00	80 - 120	
56 Fe	59812380.00	3035.00	ppb	0.68	3000.00	80 - 120	
59 Co	1192632.00	28.31	ppb	2.68	30.00	80 - 120	
60 Ni	133445.59	31.33	ppb	0.60	30.00	80 - 120	
63 Cu	343036.09	30.06	ppb	0.50	30.00	80 - 120	
66 Zn	413316.91	62.28	ppb	0.77	60.00	80 - 120	
75 As	54980.24	28.77	ppb	0.43	30.00	80 - 120	
78 Se	23302.34	29.85	ppb	0.73	30.00	80 - 120	
88 Sr	1798979.00	30.37	ppb	0.35	30.00	80 - 120	
90 Zr	2140.24	-0.02	ppb	8.52	20.00	80 - 120	Fail
95 Mo	335685.91	28.88	ppb	0.86	30.00	80 - 120	
107 Ag	903952.13	28.93	ppb	1.12	30.00	80 - 120	
111 Cd	200598.91	28.47	ppb	0.60	30.00	80 - 120	
118 Sn	554789.69	30.03	ppb	1.34	30.00	80 - 120	
121 Sb	767993.69	29.28	ppb	0.85	30.00	80 - 120	
137 Ba	269351.69	29.80	ppb	0.71	30.00	80 - 120	
182 W	444.47	0.01	ppb	6.63	30.00	80 - 120	Fail
205 Tl	1483334.00	31.24	ppb	0.96	30.00	80 - 120	
208 Pb	1943031.00	30.06	ppb	0.68	30.00	80 - 120	
235 U	14225.94	0.20	ppb	0.60	0.21	80 - 120	
238 U	2011713.00	29.22	ppb	0.85	29.79	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1308435.00	1.13	1477556.10	88.6	60 - 125	
45 Sc	2408408.00	1.03	2504048.50	96.2	60 - 125	
45 Sc	574852.69	0.97	599608.94	95.9	60 - 125	
45 Sc	4455501.00	1.57	4320355.00	103.1	60 - 125	
72 Ge	621465.00	0.70	646366.69	96.1	60 - 125	
72 Ge	303019.47	0.77	316482.97	95.7	60 - 125	
72 Ge	1086724.00	1.29	1049262.10	103.6	60 - 125	
115 In	7742190.00	1.24	7320841.50	105.8	60 - 125	
159 Tb	9838097.00	0.92	9222372.00	106.7	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

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

Data Results:

Analytes: Fail

ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01020.D\F6E01020.D#
Date Acquired:	May 18 2017 06:44 pm
Operator:	CCapul
Sample Name:	IME013WC
Misc Info:	
Vial Number:	2103
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	468221.59	30.22	ppb	1.33	30.00	80 - 120	
9 Be	161413.41	31.10	ppb	2.48	30.00	80 - 120	
11 B	112924.40	29.05	ppb	1.55	30.00	80 - 120	
23 Na	20179060.00	2776.00	ppb	0.07	3000.00	80 - 120	
24 Mg	56090760.00	2800.00	ppb	1.77	3000.00	80 - 120	
27 Al	72427272.00	2740.00	ppb	1.52	3000.00	80 - 120	
28 Si	10004.82	3.28	ppb	2.84	3000.00	80 - 120	Fail
31 P	26843.88	-0.08	ppb	163.04	300.00	80 - 120	Fail
39 K	4764550.00	2954.00	ppb	0.34	3000.00	80 - 120	
40 Ca	40932592.00	2841.00	ppb	0.59	3000.00	80 - 120	
47 Ti	81574.62	28.61	ppb	2.03	30.00	80 - 120	
51 V	316164.69	29.42	ppb	0.31	30.00	80 - 120	
52 Cr	373785.50	29.42	ppb	1.10	30.00	80 - 120	
55 Mn	1489935.00	29.75	ppb	1.23	30.00	80 - 120	
56 Fe	60108080.00	2960.00	ppb	0.54	3000.00	80 - 120	
59 Co	1176292.00	28.03	ppb	1.73	30.00	80 - 120	
60 Ni	131941.20	30.39	ppb	0.31	30.00	80 - 120	
63 Cu	345788.50	29.73	ppb	0.83	30.00	80 - 120	
66 Zn	626655.31	94.85	ppb	0.69	60.00	80 - 120	Fail
75 As	54726.59	28.59	ppb	0.62	30.00	80 - 120	
78 Se	23471.91	29.57	ppb	0.21	30.00	80 - 120	
88 Sr	1751205.00	29.67	ppb	0.93	30.00	80 - 120	
90 Zr	15944.84	0.23	ppb	3.83	20.00	80 - 120	Fail
95 Mo	331679.41	28.91	ppb	0.90	30.00	80 - 120	
107 Ag	876665.38	28.42	ppb	0.91	30.00	80 - 120	
111 Cd	196479.59	28.25	ppb	0.47	30.00	80 - 120	
118 Sn	539220.31	29.57	ppb	0.90	30.00	80 - 120	
121 Sb	755784.63	29.19	ppb	1.31	30.00	80 - 120	
137 Ba	261676.91	29.33	ppb	0.60	30.00	80 - 120	
182 W	401.13	0.01	ppb	7.71	30.00	80 - 120	Fail
205 Tl	1454169.00	31.09	ppb	1.04	30.00	80 - 120	
208 Pb	1900511.00	29.84	ppb	1.33	30.00	80 - 120	
235 U	13770.98	0.19	ppb	1.25	0.21	80 - 120	
238 U	1979775.00	29.19	ppb	1.25	29.79	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1306298.40	1.08	1477556.10	88.4	60 - 125	
45 Sc	2481142.50	0.98	2504048.50	99.1	60 - 125	
45 Sc	585895.31	0.77	599608.94	97.7	60 - 125	
45 Sc	4437722.00	1.66	4320355.00	102.7	60 - 125	
72 Ge	631895.31	1.09	646366.69	97.8	60 - 125	
72 Ge	303522.88	0.66	316482.97	95.9	60 - 125	
72 Ge	1082861.50	0.37	1049262.10	103.2	60 - 125	
115 In	7642222.50	0.80	7320841.50	104.4	60 - 125	
159 Tb	9693102.00	1.36	9222372.00	105.1	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

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

Data Results:

Analytes: Fail

ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01021.D\F6E01021.D#
Date Acquired: May 18 2017 06:49 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E031-01
Misc Info:
Vial Number: 2104
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	7008369.0	0.0000	562.7000	ppb	0.69	50.00	>LRS
9 Be	# 3	6	32.2	0.0000	0.0043	ppb	92.98	50.00	
11 B	# 3	6	5894468.0	0.0000	1585.0000	ppb	0.22	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	34270808.0	0.0000	1601.0000	ppb	1.34	50000.00	
27 Al	# 3	45	213861.0	0.0000	7.4320	ppb	0.78	50000.00	
28 Si	# 1	45	23132680.0	0.0000	12040.0000	ppb	1.08	5000.00	>LRS
31 P	# 3	45	52858.9	0.0000	14.4600	ppb	0.46	500.00	
39 K	# 2	45	33350180.0	0.0000	20110.0000	ppb	0.39	50000.00	
40 Ca	# 1	45	1028120000.0	0.0000	73350.0000	ppb	0.45	50000.00	>LRS
47 Ti	# 3	45	6959.7	0.0000	2.2470	ppb	3.34	500.00	
51 V	# 2	45	40951.4	0.0000	3.1980	ppb	1.05	500.00	
52 Cr	# 2	45	113046.9	0.0000	8.2220	ppb	0.49	500.00	
55 Mn	# 3	45	355122.3	0.0000	6.5800	ppb	0.80	3000.00	
56 Fe	# 1	45	283469.0	0.0000	14.0900	ppb	2.49	50000.00	
59 Co	# 3	45	9103.1	0.0000	0.1971	ppb	1.83	500.00	
60 Ni	# 2	45	4114.8	0.0000	0.8726	ppb	1.65	500.00	
63 Cu	# 2	45	3286.2	0.0000	0.2257	ppb	2.27	500.00	
66 Zn	# 3	72	19225.3	0.0000	2.9660	ppb	0.59	500.00	
75 As	# 2	72	11984.5	0.0000	6.5470	ppb	1.53	500.00	
78 Se	# 1	72	424.7	0.0000	0.5902	ppb	6.17	500.00	
88 Sr	# 3	72	101510400.0	0.0000	1846.0000	ppb	0.14	500.00	>LRS
90 Zr	# 3	72	6643.9	0.0000	0.0728	ppb	2.70	50.00	
95 Mo	# 3	115	371361.8	0.0000	41.0400	ppb	0.66	500.00	
107 Ag	# 3	115	172.2	0.0000	0.0042	ppb	22.01	50.00	
111 Cd	# 3	115	-380.4	0.0000	-0.0729	ppb	53.02	500.00	
118 Sn	# 3	115	825.6	0.0000	0.0481	ppb	4.68	500.00	
121 Sb	# 3	115	3251.6	0.0000	0.1438	ppb	3.43	500.00	
137 Ba	# 3	115	324746.7	0.0000	46.1400	ppb	1.02	1000.00	
182 W	# 3	159	32416.9	0.0000	1.9080	ppb	0.40	50.00	
205 Tl	# 3	159	2250.3	0.0000	0.0597	ppb	0.44	500.00	
208 Pb	# 3	159	1940.1	0.0000	0.0238	ppb	9.15	500.00	
235 U	# 3	159	920.1	0.0000	0.0167	ppb	2.66	30.00	
238 U	# 3	159	123647.7	0.0000	2.3880	ppb	1.61	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1265718.10	1.57	1477556.10	85.7	60 - 125	
45 Sc # 1	2416444.50	3.19	2504048.50	96.5	60 - 125	
45 Sc # 2	619901.69	1.63	599608.94	103.4	60 - 125	
45 Sc # 3	4741396.00	1.24	4320355.00	109.7	60 - 125	
72 Ge # 1	564092.94	2.01	646366.69	87.3	60 - 125	
72 Ge # 2	287458.00	1.40	316482.97	90.8	60 - 125	
72 Ge # 3	1009093.80	0.76	1049262.10	96.2	60 - 125	
115 In # 3	6028342.00	0.95	7320841.50	82.3	60 - 125	
159 Tb # 3	7399144.00	1.10	9222372.00	80.2	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01022.D\F6E01022.D#
Date Acquired: May 18 2017 06:53 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E031-02
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	122819.9	0.0000	0.0658	ppb	147.23	50.00	
9 Be	# 3	6	24.4	0.0000	0.0012	ppb	122.18	50.00	
11 B	# 3	6	33519.9	0.0000	5.6730	ppb	9.91	100.00	
23 Na	# 1	45	4147888.0	0.0000	445.8000	ppb	5.84	50000.00	
24 Mg	# 3	45	133005.1	0.0000	5.2120	ppb	0.96	50000.00	
27 Al	# 3	45	111180.9	0.0000	3.2520	ppb	0.26	50000.00	
28 Si	# 1	45	33201.4	0.0000	11.5900	ppb	1.25	5000.00	
31 P	# 3	45	45257.0	0.0000	6.1320	ppb	12.30	500.00	
39 K	# 2	45	274757.8	0.0000	38.8200	ppb	8.61	50000.00	
40 Ca	# 1	45	647056.7	0.0000	32.7100	ppb	1.29	50000.00	
47 Ti	# 3	45	616.7	0.0000	0.1344	ppb	5.99	500.00	
51 V	# 2	45	7435.0	0.0000	0.0953	ppb	10.22	500.00	
52 Cr	# 2	45	3876.5	0.0000	-0.0178	ppb	27.68	500.00	
55 Mn	# 3	45	9972.6	0.0000	0.0879	ppb	0.66	3000.00	
56 Fe	# 1	45	94690.1	0.0000	3.4590	ppb	1.06	50000.00	
59 Co	# 3	45	435.6	0.0000	0.0024	ppb	6.25	500.00	
60 Ni	# 2	45	352.0	0.0000	0.0405	ppb	1.01	500.00	
63 Cu	# 2	45	5001.1	0.0000	0.2987	ppb	0.67	500.00	
66 Zn	# 3	72	11342.5	0.0000	1.2770	ppb	2.34	500.00	
75 As	# 2	72	254.2	0.0000	0.0269	ppb	6.61	500.00	
78 Se	# 1	72	17.8	0.0000	0.0083	ppb	40.89	500.00	
88 Sr	# 3	72	10826.7	0.0000	0.1430	ppb	3.52	500.00	
90 Zr	# 3	72	1152.3	0.0000	-0.0397	ppb	3.45	50.00	
95 Mo	# 3	115	600.0	0.0000	0.0409	ppb	6.37	500.00	
107 Ag	# 3	115	155.6	0.0000	0.0017	ppb	23.22	50.00	
111 Cd	# 3	115	16.7	0.0000	-0.0015	ppb	190.62	500.00	
118 Sn	# 3	115	831.2	0.0000	0.0312	ppb	5.46	500.00	
121 Sb	# 3	115	2663.7	0.0000	0.0760	ppb	7.07	500.00	
137 Ba	# 3	115	2122.5	0.0000	0.2001	ppb	5.19	1000.00	
182 W	# 3	159	251.1	0.0000	0.0025	ppb	25.47	50.00	
205 Tl	# 3	159	256.7	0.0000	0.0017	ppb	27.64	500.00	
208 Pb	# 3	159	3220.3	0.0000	0.0307	ppb	2.97	500.00	
235 U	# 3	159	18.9	0.0000	0.0001	ppb	82.86	30.00	
238 U	# 3	159	336.7	0.0000	0.0037	ppb	9.89	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1886233.90	1.04	1477556.10	127.7	60 - 125	ISFail
45 Sc # 1	3121017.30	1.91	2504048.50	124.6	60 - 125	
45 Sc # 2	741242.94	0.72	599608.94	123.6	60 - 125	
45 Sc # 3	5501819.00	0.75	4320355.00	127.3	60 - 125	ISFail
72 Ge # 1	779829.94	0.73	646366.69	120.6	60 - 125	
72 Ge # 2	363025.69	1.03	316482.97	114.7	60 - 125	
72 Ge # 3	1294391.90	0.35	1049262.10	123.4	60 - 125	
115 In # 3	8593760.00	0.29	7320841.50	117.4	60 - 125	
159 Tb # 3	10470338.00	0.34	9222372.00	113.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01023.D\F6E01023.D#
Date Acquired: May 18 2017 06:58 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E031-03
Misc Info:
Vial Number: 2106
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	1301405.0	0.0000	77.8500	ppb	2.02	50.00	>LRS
9 Be	# 3	6	58.9	0.0000	0.0073	ppb	40.42	50.00	
11 B	# 3	6	2672139.0	0.0000	574.0000	ppb	1.04	100.00	>LRS
23 Na	# 1	45	1822761000.0	0.0000	219600.0000	ppb	1.84	50000.00	>LRS
24 Mg	# 3	45	194613100.0	0.0000	8151.0000	ppb	0.64	50000.00	
27 Al	# 3	45	185893.5	0.0000	5.7610	ppb	2.57	50000.00	
28 Si	# 1	45	33567488.0	0.0000	14840.0000	ppb	1.86	5000.00	>LRS
31 P	# 3	45	49775.7	0.0000	9.5180	ppb	8.68	500.00	
39 K	# 2	45	8222066.0	0.0000	4538.0000	ppb	0.49	50000.00	
40 Ca	# 1	45	545836670.0	0.0000	33090.0000	ppb	1.42	50000.00	
47 Ti	# 3	45	8495.0	0.0000	2.4630	ppb	2.82	500.00	
51 V	# 2	45	74969.2	0.0000	5.7750	ppb	0.54	500.00	
52 Cr	# 2	45	5123.1	0.0000	0.0968	ppb	1.60	500.00	
55 Mn	# 3	45	46922872.0	0.0000	788.1000	ppb	0.95	3000.00	
56 Fe	# 1	45	897316.3	0.0000	38.3200	ppb	3.97	50000.00	
59 Co	# 3	45	9899.2	0.0000	0.1921	ppb	2.36	500.00	
60 Ni	# 2	45	1988.8	0.0000	0.3797	ppb	2.59	500.00	
63 Cu	# 2	45	6035.3	0.0000	0.4156	ppb	0.66	500.00	
66 Zn	# 3	72	20758.5	0.0000	2.7450	ppb	1.23	500.00	
75 As	# 2	72	12217.6	0.0000	5.9170	ppb	0.96	500.00	
78 Se	# 1	72	94.0	0.0000	0.1002	ppb	19.27	500.00	
88 Sr	# 3	72	45845300.0	0.0000	717.6000	ppb	1.36	500.00	>LRS
90 Zr	# 3	72	6133.7	0.0000	0.0461	ppb	2.57	50.00	
95 Mo	# 3	115	486569.4	0.0000	42.7100	ppb	0.55	500.00	
107 Ag	# 3	115	123.3	0.0000	0.0012	ppb	42.52	50.00	
111 Cd	# 3	115	110.5	0.0000	0.0124	ppb	43.34	500.00	
118 Sn	# 3	115	726.7	0.0000	0.0308	ppb	2.34	500.00	
121 Sb	# 3	115	3011.5	0.0000	0.1016	ppb	6.70	500.00	
137 Ba	# 3	115	5377281.0	0.0000	606.9000	ppb	1.00	1000.00	
182 W	# 3	159	291364.2	0.0000	13.3100	ppb	0.85	50.00	
205 Tl	# 3	159	47797.9	0.0000	1.0320	ppb	1.02	500.00	
208 Pb	# 3	159	4800.5	0.0000	0.0603	ppb	2.49	500.00	
235 U	# 3	159	2063.6	0.0000	0.0290	ppb	6.64	30.00	
238 U	# 3	159	277712.7	0.0000	4.1470	ppb	2.12	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1584081.40	1.48	1477556.10	107.2	60 - 125	
45 Sc # 1	2843544.80	0.51	2504048.50	113.6	60 - 125	
45 Sc # 2	665825.38	0.52	599608.94	111.0	60 - 125	
45 Sc # 3	5288485.00	1.33	4320355.00	122.4	60 - 125	
72 Ge # 1	680563.19	1.70	646366.69	105.3	60 - 125	
72 Ge # 2	323744.31	0.27	316482.97	102.3	60 - 125	
72 Ge # 3	1172615.40	0.53	1049262.10	111.8	60 - 125	
115 In # 3	7590452.50	1.18	7320841.50	103.7	60 - 125	
159 Tb # 3	9571237.00	1.93	9222372.00	103.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01024.D\F6E01024.D#
Date Acquired: May 18 2017 07:02 pm
Operator: CCapul
Sample Name: CCV2
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:53 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.01 ppb	0.83	25.00	90 - 110	
9 Be	25.35 ppb	0.36	25.00	90 - 110	
11 B	51.70 ppb	1.56	50.00	90 - 110	
23 Na	24340.00 ppb	0.37	25000.00	90 - 110	
24 Mg	24770.00 ppb	1.31	25000.00	90 - 110	
27 Al	24420.00 ppb	1.95	25000.00	90 - 110	
28 Si	2601.00 ppb	0.57	2500.00	90 - 110	
31 P	243.60 ppb	0.90	250.00	90 - 110	
39 K	25620.00 ppb	0.27	25000.00	90 - 110	
40 Ca	24710.00 ppb	0.58	25000.00	90 - 110	
47 Ti	258.60 ppb	1.44	250.00	90 - 110	
51 V	250.20 ppb	1.54	250.00	90 - 110	
52 Cr	243.80 ppb	1.10	250.00	90 - 110	
55 Mn	1455.00 ppb	0.66	1500.00	90 - 110	
56 Fe	24470.00 ppb	0.94	25000.00	90 - 110	
59 Co	231.00 ppb	0.12	250.00	90 - 110	
60 Ni	244.70 ppb	1.35	250.00	90 - 110	
63 Cu	226.70 ppb	1.81	250.00	90 - 110	
66 Zn	248.50 ppb	0.48	250.00	90 - 110	
75 As	252.40 ppb	0.41	250.00	90 - 110	
78 Se	250.80 ppb	0.50	250.00	90 - 110	
88 Sr	244.70 ppb	0.83	250.00	90 - 110	
90 Zr	16.71 ppb	0.78	25.00	90 - 110	Fail
95 Mo	268.00 ppb	0.46	250.00	90 - 110	
107 Ag	25.27 ppb	0.69	25.00	90 - 110	
111 Cd	250.50 ppb	0.31	250.00	90 - 110	
118 Sn	258.90 ppb	0.45	250.00	90 - 110	
121 Sb	51.57 ppb	0.43	50.00	90 - 110	
137 Ba	519.60 ppb	0.79	500.00	90 - 110	
182 W	24.39 ppb	0.91	25.00	90 - 110	
205 Tl	244.40 ppb	0.35	250.00	90 - 110	
208 Pb	242.10 ppb	0.50	250.00	90 - 110	
235 U	1.65 ppb	2.00	1.80	90 - 110	
238 U	239.20 ppb	0.84	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1634531.80	0.57	1477556.10	110.6	60 - 125	
45 Sc	2954304.30	1.90	2504048.50	118.0	60 - 125	
45 Sc	674177.00	1.25	599608.94	112.4	60 - 125	
45 Sc	5181951.00	0.74	4320355.00	119.9	60 - 125	
72 Ge	719364.44	0.53	646366.69	111.3	60 - 125	
72 Ge	336066.91	0.30	316482.97	106.2	60 - 125	
72 Ge	1236101.50	0.81	1049262.10	117.8	60 - 125	
115 In	7826541.50	0.41	7320841.50	106.9	60 - 125	
159 Tb	10173077.00	1.04	9222372.00	110.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01025.D\F6E01025.D#
Date Acquired: May 18 2017 07:06 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: CCB2
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0534	ppb	104949.5	193.71	0.20	
9 Be	0.0019	ppb	25.6	113.18	0.10	
11 B	1.7180	ppb	10121.5	8.13	5.00	
23 Na	48.1300	ppb	479375.6	3.62	40.00	Fail
24 Mg	0.5910	ppb	16865.5	6.29	10.00	
27 Al	0.3817	ppb	15822.2	7.46	20.00	
28 Si	1.2450	ppb	6834.0	11.90	20.00	
31 P	1.1880	ppb	33070.7	10.26	10.00	
39 K	6.1000	ppb	191006.5	16.53	20.00	
40 Ca	0.7633	ppb	62582.1	8.19	25.00	
47 Ti	0.0209	ppb	200.0	33.79	0.50	
51 V	0.0450	ppb	6145.1	13.01	0.50	
52 Cr	-0.0750	ppb	2694.9	5.43	0.20	
55 Mn	0.0169	ppb	5164.4	4.52	0.20	
56 Fe	2.5490	ppb	64837.4	8.49	10.00	
59 Co	0.0000	ppb	287.8	3217.50	0.20	
60 Ni	0.0003	ppb	119.3	127.02	0.20	
63 Cu	0.0983	ppb	1869.0	7.77	0.40	
66 Zn	0.0075	ppb	1251.2	30.16	2.00	
75 As	0.0356	ppb	258.0	15.51	0.20	
78 Se	0.0284	ppb	34.9	11.21	0.20	
88 Sr	0.0058	ppb	1081.2	16.82	0.20	
90 Zr	-0.0463	ppb	675.6	0.48	2.00	
95 Mo	0.0690	ppb	954.5	2.68	0.40	
107 Ag	-0.0001	ppb	94.4	137.14	0.20	
111 Cd	0.0001	ppb	29.1	2771.00	0.20	
118 Sn	0.0593	ppb	1394.6	7.06	0.20	
121 Sb	0.0273	ppb	1235.7	4.23	0.40	
137 Ba	0.0078	ppb	192.2	32.05	0.20	
182 W	0.0087	ppb	396.7	26.41	1.00	
205 Tl	0.0112	ppb	731.2	4.39	0.20	
208 Pb	0.0009	ppb	1159.0	68.16	0.10	
235 U	0.0001	ppb	21.1	48.47	1.00	
238 U	0.0214	ppb	1622.4	14.07	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1641108.6	1.28	1477556.10	111.1	60 - 125	
45 Sc	2834503.8	1.80	2504048.50	113.2	60 - 125	
45 Sc	673576.8	0.65	599608.94	112.3	60 - 125	
45 Sc	5092971.0	0.17	4320355.00	117.9	60 - 125	
72 Ge	726726.6	1.18	646366.69	112.4	60 - 125	
72 Ge	341525.1	0.43	316482.97	107.9	60 - 125	
72 Ge	1215426.5	0.88	1049262.10	115.8	60 - 125	
115 In	8516321.0	1.06	7320841.50	116.3	60 - 125	
159 Tb	10404707.0	0.66	9222372.00	112.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01026.D\F6E01026.D#
Date Acquired: May 18 2017 07:11 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E031-02N
Misc Info:
Vial Number: 2105
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	100954.7	0.0000	-0.0510	ppb	109.57	50.00	
9 Be	# 3	6	25.6	0.0000	0.0020	ppb	40.97	50.00	
11 B	# 3	6	8265.8	0.0000	1.4030	ppb	3.21	100.00	
23 Na	# 1	45	659243.4	0.0000	73.0500	ppb	1.82	50000.00	
24 Mg	# 3	45	137766.8	0.0000	6.0640	ppb	0.43	50000.00	
27 Al	# 3	45	102669.1	0.0000	3.3660	ppb	2.96	50000.00	
28 Si	# 1	45	28119.3	0.0000	11.1800	ppb	13.44	5000.00	
31 P	# 3	45	37223.2	0.0000	4.2620	ppb	3.94	500.00	
39 K	# 2	45	191071.8	0.0000	10.3600	ppb	12.74	50000.00	
40 Ca	# 1	45	733839.3	0.0000	43.3800	ppb	0.40	50000.00	
47 Ti	# 3	45	518.9	0.0000	0.1242	ppb	7.00	500.00	
51 V	# 2	45	6536.6	0.0000	0.0984	ppb	3.47	500.00	
52 Cr	# 2	45	3470.2	0.0000	-0.0119	ppb	58.06	500.00	
55 Mn	# 3	45	11580.4	0.0000	0.1361	ppb	1.64	3000.00	
56 Fe	# 1	45	94710.2	0.0000	3.9980	ppb	1.27	50000.00	
59 Co	# 3	45	317.8	0.0000	0.0009	ppb	60.58	500.00	
60 Ni	# 2	45	459.3	0.0000	0.0721	ppb	5.62	500.00	
63 Cu	# 2	45	6718.7	0.0000	0.4815	ppb	3.43	500.00	
66 Zn	# 3	72	15303.9	0.0000	1.9600	ppb	1.65	500.00	
75 As	# 2	72	241.3	0.0000	0.0328	ppb	14.56	500.00	
78 Se	# 1	72	16.2	0.0000	0.0086	ppb	43.68	500.00	
88 Sr	# 3	72	10423.0	0.0000	0.1510	ppb	2.31	500.00	
90 Zr	# 3	72	1274.5	0.0000	-0.0360	ppb	5.43	50.00	
95 Mo	# 3	115	507.8	0.0000	0.0357	ppb	10.87	500.00	
107 Ag	# 3	115	150.0	0.0000	0.0017	ppb	49.41	50.00	
111 Cd	# 3	115	7.7	0.0000	-0.0026	ppb	72.25	500.00	
118 Sn	# 3	115	1156.8	0.0000	0.0498	ppb	6.91	500.00	
121 Sb	# 3	115	2136.9	0.0000	0.0614	ppb	3.44	500.00	
137 Ba	# 3	115	2368.1	0.0000	0.2358	ppb	2.01	1000.00	
182 W	# 3	159	308.9	0.0000	0.0052	ppb	9.14	50.00	
205 Tl	# 3	159	431.1	0.0000	0.0054	ppb	16.05	500.00	
208 Pb	# 3	159	4623.8	0.0000	0.0526	ppb	4.81	500.00	
235 U	# 3	159	17.8	0.0000	0.0001	ppb	110.46	30.00	
238 U	# 3	159	695.6	0.0000	0.0088	ppb	1.61	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1577727.60	1.36	1477556.10	106.8	60 - 125	
45 Sc # 1	2725278.00	1.11	2504048.50	108.8	60 - 125	
45 Sc # 2	647933.25	0.79	599608.94	108.1	60 - 125	
45 Sc # 3	4916448.00	0.33	4320355.00	113.8	60 - 125	
72 Ge # 1	698623.44	0.34	646366.69	108.1	60 - 125	
72 Ge # 2	327296.44	1.46	316482.97	103.4	60 - 125	
72 Ge # 3	1184276.10	0.78	1049262.10	112.9	60 - 125	
115 In # 3	8200567.50	2.06	7320841.50	112.0	60 - 125	
159 Tb # 3	10254322.00	1.54	9222372.00	111.2	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01030.D\F6E01030.D#
Date Acquired:	May 18 2017 07:29 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSA2
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.44	ppb	85511.3	10.70	---	
9 Be	0.01	ppb	77.8	7.33	---	
11 B	1.05	ppb	5208.8	4.71	---	
23 Na	96270.00	ppb	711863300.0	1.02	120000.00	
24 Mg	93490.00	ppb	1911833000.0	0.94	120000.00	
27 Al	92970.00	ppb	2508304900.0	0.56	120000.00	
28 Si	6.01	ppb	15703.1	2.62	---	
31 P	95360.00	ppb	151500500.0	0.15	---	
39 K	104000.00	ppb	169936500.0	2.60	120000.00	
40 Ca	98280.00	ppb	1443600000.0	0.27	120000.00	
47 Ti	2140.00	ppb	6221300.0	0.44	2400.00	
51 V	0.04	ppb	5550.8	31.60	---	
52 Cr	1.24	ppb	19749.3	1.15	---	
55 Mn	0.17	ppb	12296.6	0.66	---	
56 Fe	97860.00	ppb	2028077100.0	0.17	120000.00	
59 Co	0.21	ppb	9437.8	2.60	---	
60 Ni	0.19	ppb	955.8	3.63	---	
63 Cu	0.73	ppb	9387.7	1.26	---	
66 Zn	1.84	ppb	13878.1	2.22	---	
75 As	0.19	ppb	528.7	11.12	---	
78 Se	0.07	ppb	62.9	9.76	---	
88 Sr	0.63	ppb	39787.6	0.79	---	
90 Zr	0.06	ppb	6672.9	7.91	---	
95 Mo	2085.00	ppb	22278390.0	0.18	2400.00	
107 Ag	0.02	ppb	633.4	8.65	---	
111 Cd	0.22	ppb	1445.4	16.78	---	
118 Sn	0.03	ppb	710.0	12.13	---	
121 Sb	0.07	ppb	2145.8	6.10	---	
137 Ba	0.10	ppb	910.1	3.72	---	
182 W	0.13	ppb	2833.7	4.91	---	
205 Tl	0.00	ppb	314.5	17.41	---	
208 Pb	0.20	ppb	13091.9	1.55	---	
235 U	0.00	ppb	22.2	96.70	---	
238 U	0.00	ppb	256.7	6.57	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1243823.1	0.19	1477556.10	84.2	60 - 125	
45 Sc	2532686.8	0.67	2504048.50	101.1	60 - 125	
45 Sc	613036.4	1.24	599608.94	102.2	60 - 125	
45 Sc	4529528.5	0.74	4320355.00	104.8	60 - 125	
72 Ge	622000.6	1.18	646366.69	96.2	60 - 125	
72 Ge	306078.8	2.59	316482.97	96.7	60 - 125	
72 Ge	1136812.4	0.55	1049262.10	108.3	60 - 125	
115 In	7118613.0	0.96	7320841.50	97.2	60 - 125	
159 Tb	9254138.0	0.67	9222372.00	100.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01031.D\F6E01031.D#
Date Acquired:	May 18 2017 07:34 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSAB2
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.79	ppb	328127.8	1.41	20.00	80 - 120	
9 Be	21.32	ppb	104236.6	0.89	20.00	80 - 120	
11 B	20.48	ppb	75399.3	0.78	20.00	80 - 120	
23 Na	96800.00	ppb	732955580.0	0.98	100000.00	80 - 120	
24 Mg	92660.00	ppb	1938802900.0	1.38	100000.00	80 - 120	
27 Al	90740.00	ppb	2505009900.0	1.81	100000.00	80 - 120	
28 Si	203.20	ppb	422666.7	0.94	200.00	80 - 120	
31 P	94740.00	ppb	154021900.0	0.45	100000.00	80 - 120	
39 K	103300.00	ppb	169076400.0	1.02	100000.00	80 - 120	
40 Ca	98640.00	ppb	1483748000.0	0.08	100000.00	80 - 120	
47 Ti	2140.00	ppb	6365078.0	0.24	2000.00	80 - 120	
51 V	20.02	ppb	227304.3	1.13	20.00	80 - 120	
52 Cr	20.57	ppb	275148.5	2.37	20.00	80 - 120	
55 Mn	19.83	ppb	1038434.0	1.91	20.00	80 - 120	
56 Fe	97180.00	ppb	2062617000.0	0.24	100000.00	80 - 120	
59 Co	18.19	ppb	797220.2	0.81	20.00	80 - 120	
60 Ni	19.22	ppb	87567.1	1.26	20.00	80 - 120	
63 Cu	18.52	ppb	226122.0	1.31	20.00	80 - 120	
66 Zn	20.17	ppb	142255.4	1.45	20.00	80 - 120	
75 As	20.31	ppb	40304.9	1.50	20.00	80 - 120	
78 Se	21.20	ppb	17132.5	0.61	20.00	80 - 120	
88 Sr	19.80	ppb	1239764.0	0.56	20.00	80 - 120	
90 Zr	5.55	ppb	325896.0	0.92	20.00	80 - 120	Fail
95 Mo	2109.00	ppb	22950120.0	0.46	2000.00	80 - 120	
107 Ag	18.96	ppb	554710.1	2.02	20.00	80 - 120	
111 Cd	19.47	ppb	128466.6	0.83	20.00	80 - 120	
118 Sn	20.41	ppb	353232.7	0.95	20.00	80 - 120	
121 Sb	20.53	ppb	504434.9	0.51	20.00	80 - 120	
137 Ba	20.65	ppb	174880.5	1.54	20.00	80 - 120	
182 W	18.43	ppb	396691.7	0.18	20.00	80 - 120	
205 Tl	18.93	ppb	859650.6	0.56	20.00	80 - 120	
208 Pb	19.43	ppb	1201511.0	1.33	20.00	80 - 120	
235 U	0.13	ppb	9046.7	2.31	0.14	80 - 120	
238 U	19.24	ppb	1266710.0	1.62	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1230281.9	0.96	1477556.10	83.3	60 - 125	
45 Sc	2593601.5	1.88	2504048.50	103.6	60 - 125	
45 Sc	614514.4	1.49	599608.94	102.5	60 - 125	
45 Sc	4634916.0	1.05	4320355.00	107.3	60 - 125	
72 Ge	643327.4	0.77	646366.69	99.5	60 - 125	
72 Ge	314315.2	1.07	316482.97	99.3	60 - 125	
72 Ge	1148859.0	1.80	1049262.10	109.5	60 - 125	
115 In	7250897.5	1.17	7320841.50	99.0	60 - 125	
159 Tb	9408127.0	0.75	9222372.00	102.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01032.D\F6E01032.D#
Date Acquired: May 18 2017 07:39 pm
Operator: CCapul
Sample Name: CCV3
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:53 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.09 ppb	2.44	25.00	90 - 110	
9 Be	26.60 ppb	1.94	25.00	90 - 110	
11 B	50.51 ppb	0.85	50.00	90 - 110	
23 Na	23960.00 ppb	1.11	25000.00	90 - 110	
24 Mg	23620.00 ppb	1.31	25000.00	90 - 110	
27 Al	23640.00 ppb	0.91	25000.00	90 - 110	
28 Si	2509.00 ppb	1.47	2500.00	90 - 110	
31 P	234.10 ppb	0.94	250.00	90 - 110	
39 K	25730.00 ppb	0.60	25000.00	90 - 110	
40 Ca	24870.00 ppb	1.12	25000.00	90 - 110	
47 Ti	249.70 ppb	1.31	250.00	90 - 110	
51 V	252.00 ppb	0.75	250.00	90 - 110	
52 Cr	242.90 ppb	1.01	250.00	90 - 110	
55 Mn	1452.00 ppb	1.60	1500.00	90 - 110	
56 Fe	24980.00 ppb	0.83	25000.00	90 - 110	
59 Co	228.30 ppb	0.89	250.00	90 - 110	
60 Ni	243.20 ppb	1.56	250.00	90 - 110	
63 Cu	229.60 ppb	0.72	250.00	90 - 110	
66 Zn	248.70 ppb	0.79	250.00	90 - 110	
75 As	251.10 ppb	0.64	250.00	90 - 110	
78 Se	253.40 ppb	0.83	250.00	90 - 110	
88 Sr	252.90 ppb	0.87	250.00	90 - 110	
90 Zr	17.08 ppb	0.61	25.00	90 - 110	Fail
95 Mo	263.00 ppb	0.89	250.00	90 - 110	
107 Ag	24.69 ppb	0.80	25.00	90 - 110	
111 Cd	252.30 ppb	0.31	250.00	90 - 110	
118 Sn	258.00 ppb	1.14	250.00	90 - 110	
121 Sb	51.91 ppb	1.28	50.00	90 - 110	
137 Ba	516.00 ppb	0.79	500.00	90 - 110	
182 W	24.54 ppb	0.71	25.00	90 - 110	
205 Tl	243.60 ppb	1.50	250.00	90 - 110	
208 Pb	244.40 ppb	1.44	250.00	90 - 110	
235 U	1.68 ppb	1.32	1.80	90 - 110	
238 U	240.60 ppb	0.37	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1339115.30	1.75	1477556.10	90.6	60 - 125	
45 Sc	2721314.30	1.65	2504048.50	108.7	60 - 125	
45 Sc	632761.69	0.35	599608.94	105.5	60 - 125	
45 Sc	4888971.00	1.07	4320355.00	113.2	60 - 125	
72 Ge	682699.25	0.70	646366.69	105.6	60 - 125	
72 Ge	322236.53	0.21	316482.97	101.8	60 - 125	
72 Ge	1175863.60	0.35	1049262.10	112.1	60 - 125	
115 In	7885605.00	0.76	7320841.50	107.7	60 - 125	
159 Tb	10301506.00	0.48	9222372.00	111.7	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01033.D\F6E01033.D#
Date Acquired: May 18 2017 07:43 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: CCB3
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0303	ppb	87592.2	314.70	0.20	
9 Be	0.0008	ppb	15.6	86.65	0.10	
11 B	0.4392	ppb	3258.2	9.72	5.00	
23 Na	16.8200	ppb	201611.2	1.91	40.00	
24 Mg	0.8418	ppb	20987.4	11.27	10.00	
27 Al	0.4696	ppb	17144.7	14.33	20.00	
28 Si	1.0190	ppb	5785.7	7.67	20.00	
31 P	-0.9493	ppb	27137.0	35.14	10.00	
39 K	2.1530	ppb	167710.2	95.26	20.00	
40 Ca	1.5820	ppb	69537.6	6.48	25.00	
47 Ti	0.0374	ppb	235.6	21.47	0.50	
51 V	0.0713	ppb	5895.4	7.05	0.50	
52 Cr	-0.0663	ppb	2571.8	6.78	0.20	
55 Mn	0.0110	ppb	4477.5	21.10	0.20	
56 Fe	4.2200	ppb	94776.7	4.64	10.00	
59 Co	-0.0007	ppb	234.5	68.54	0.20	
60 Ni	0.0068	ppb	138.7	29.70	0.20	
63 Cu	0.1216	ppb	1987.0	17.66	0.40	
66 Zn	0.0055	ppb	1195.7	189.93	2.00	
75 As	0.0183	ppb	207.6	36.53	0.20	
78 Se	0.0353	ppb	38.0	14.44	0.20	
88 Sr	0.0035	ppb	897.8	8.89	0.20	
90 Zr	-0.0468	ppb	623.4	1.33	2.00	
95 Mo	0.1892	ppb	2443.6	5.67	0.40	
107 Ag	0.0000	ppb	95.6	6026.90	0.20	
111 Cd	-0.0009	ppb	21.2	320.60	0.20	
118 Sn	0.0609	ppb	1400.1	1.54	0.20	
121 Sb	0.0209	ppb	1030.1	17.76	0.40	
137 Ba	0.0104	ppb	213.3	17.00	0.20	
182 W	0.0077	ppb	378.9	49.17	1.00	
205 Tl	0.0111	ppb	734.5	14.82	0.20	
208 Pb	0.0015	ppb	1223.4	28.23	0.10	
235 U	0.0001	ppb	22.2	61.25	1.00	
238 U	0.0207	ppb	1596.8	15.44	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1352318.6	0.69	1477556.10	91.5	60 - 125	
45 Sc	2591768.5	0.50	2504048.50	103.5	60 - 125	
45 Sc	614296.1	1.76	599608.94	102.4	60 - 125	
45 Sc	4725301.0	1.16	4320355.00	109.4	60 - 125	
72 Ge	668690.4	1.34	646366.69	103.5	60 - 125	
72 Ge	321367.9	0.84	316482.97	101.5	60 - 125	
72 Ge	1175333.3	0.19	1049262.10	112.0	60 - 125	
115 In	8360373.0	1.59	7320841.50	114.2	60 - 125	
159 Tb	10571391.0	0.83	9222372.00	114.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

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

Comments:

Digestion Vessel Lot # 1501179 - 7A - 5241

all the samples are pH < 2

Book #: EIM-064
Batch: TME0134W
Matrix: Water
Digestor ID: E

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

Start	Temp	End	Temp
	90.8 °C		92.6 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 04 - 06	0.15
LCS-2	↓ - 04 - 07	0.15
MS	Same spike soln & vol as LCS 1 & 2	
Blank Soil (Bead)	NA	NA
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SIWA - 006 - 04 - 04	0.5 + 1
HCl	↓ - 03 - 10	0.25 + 0.25
H_2O_2	NA	NA
HNO_3(1:1)	NA	NA
pH Strip (0-14)	HC681919	NA
Digestate Location	Metals	
Extract Location	NA	
☑ Reagent Water ID:	SM5A - 03 - 02 - 20	
☑ Thermometer ID:	150590610/E7	
☑ Pipette ID:	239360316	
☐ Pipette ID:	NA	
☐ Pipette ID:	NA	
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: SP
Standard Added By: SP Witnessed By: ↓
Extract Rcvd By: ↓ Checked By: ↓

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
17IME013W01	IME013WB	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W02	IME013WL	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W03	IME013WC	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W04	E031-01	50	ml	5/16/17 10:29	50	50	50	1	DISSOLVED
17IME013W05	E031-02	50	ml	5/16/17 10:30	50	50	50	1	DISSOLVED
17IME013W06	E031-03	50	ml	5/16/17 10:30	50	50	50	1	DISSOLVED
17IME013W07	E053-02	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W08	E053-02M	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W09	E053-02S	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W10	E053-03	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W11	E058-01	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W12	E058-02	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W13	E058-03	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W14	E058-04	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W15	E058-05	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W16	E058-06	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W17	E058-07	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W18	E058-08	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W19	E058-09	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W20	E071-04	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W21	E075-03	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W22	E075-08	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W23	E075-09	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W24	E075-10	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W25	E075-11	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED

SP 5/16/17

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

☑ Digestion Started @ 5/16/17 11:50

☑ Digestion Ended @ 5/16/17 16:51

Prepared By: SPara

Checked By: CW

Comments:

Date 5/16/17

SOP EMAX-6020 Rev. 9

LABORATORY REPORT FOR

ASSET LABS

PG&E

METHOD E218.6
HEXAVALENT CHROMIUM

SDG#: 17E031

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E

SDG : 17E031

METHOD E218.6
HEXAVALENT CHROMIUM

A total of three (3) water samples were received on 05/04/17 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, (1) method blank was analyzed. Hexavalent Chromium was not detected in HCE007WB. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. HCE007WL/HCE007WC were within LCS limits. Refer to LCS summary form for details.

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD, and two (2) sets of MS were analyzed. Hexavalent Chromium was within MS QC limits in E031-02M/S, E031-01IM and E031-03M. Refer to Matrix QC summary forms for details.

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

SAMPLE RESULTS

METHOD E218.6
HEXAVALENT CHROMIUM

Client : ASSET LABS
Project : PG&E
Batch No. : 17E031

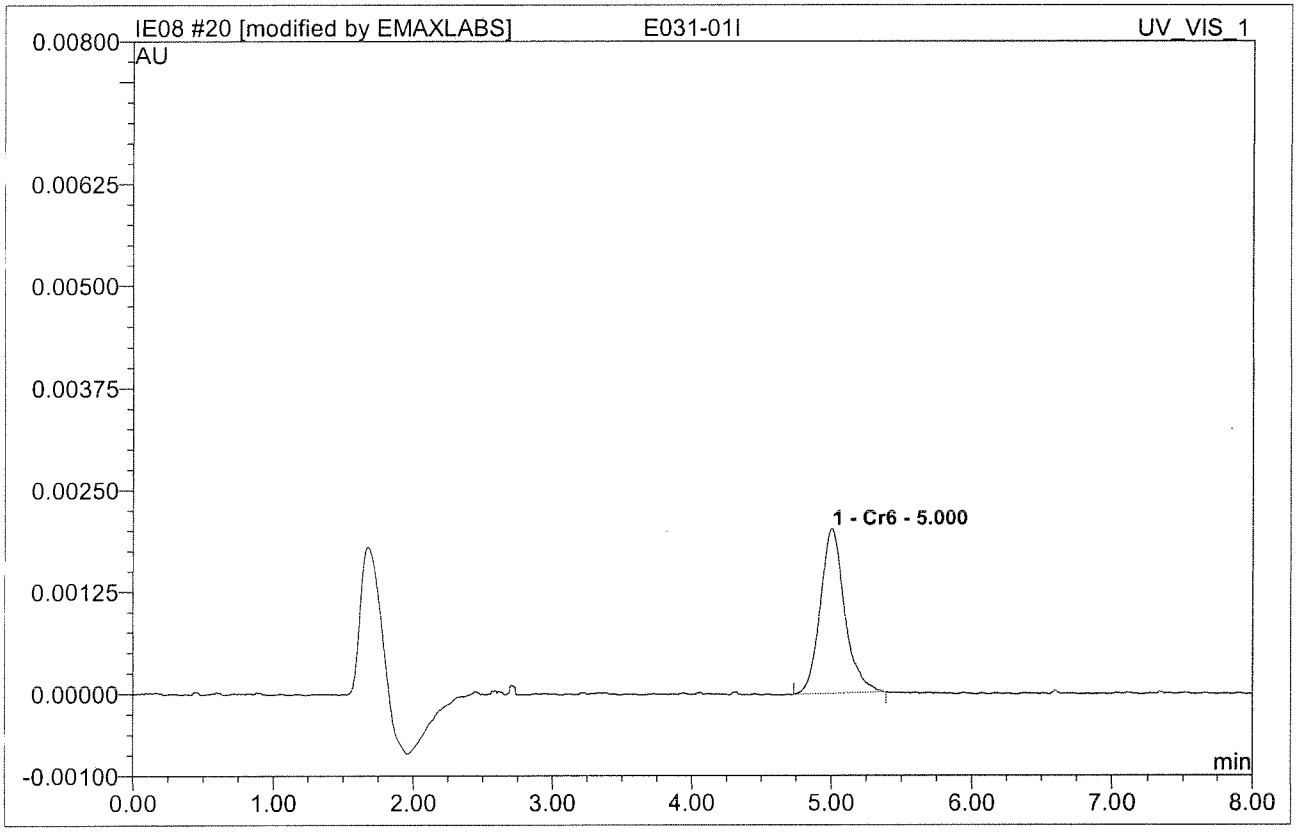
Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCE007WB	ND	1	NA	0.2	0.1	05/08/1714:00	NA	IE08013	IE08010	HCE007W	NA	NA
LCS1W	HCE007WL	2.1	1	NA	0.2	0.1	05/08/1714:11	NA	IE08014	IE08010	HCE007W	NA	NA
LCD1W	HCE007WC	2.0	1	NA	0.2	0.1	05/08/1714:21	NA	IE08015	IE08010	HCE007W	NA	NA
MW-55-045-EB-Q217	E031-02	ND	1	NA	0.2	0.1	05/08/1714:42	NA	IE08017	IE08010	HCE007W	05/02/1714:35	05/04/17
MW-55-045-Q217	E031-03	ND	1	NA	0.2	0.1	05/08/1714:52	NA	IE08018	IE08010	HCE007W	05/02/1715:08	05/04/17
MW-55-120-Q217MS	E031-01IM	16.2	2	NA	0.4	0.2	05/08/1715:03	NA	IE08019	IE08010	HCE007W	05/02/1714:18	05/04/17
MW-55-120-Q217	E031-01I	8.1	2	NA	0.4	0.2	05/08/1715:13	NA	IE08020	IE08010	HCE007W	05/02/1714:18	05/04/17
MW-55-045-EB-Q217MS	E031-02M	0.99	1	NA	0.2	0.1	05/08/1715:24	NA	IE08021	IE08010	HCE007W	05/02/1714:35	05/04/17
MW-55-045-Q217MS	E031-03M	1.0	1	NA	0.2	0.1	05/08/1715:55	NA	IE08024	IE08022	HCE007W	05/02/1715:08	05/04/17
MW-55-045-EB-Q217MSD	E031-02S	1.0	1	NA	0.2	0.1	05/08/1716:05	NA	IE08025	IE08022	HCE007W	05/02/1714:35	05/04/17

IE08 020 E031-01I

DF=2

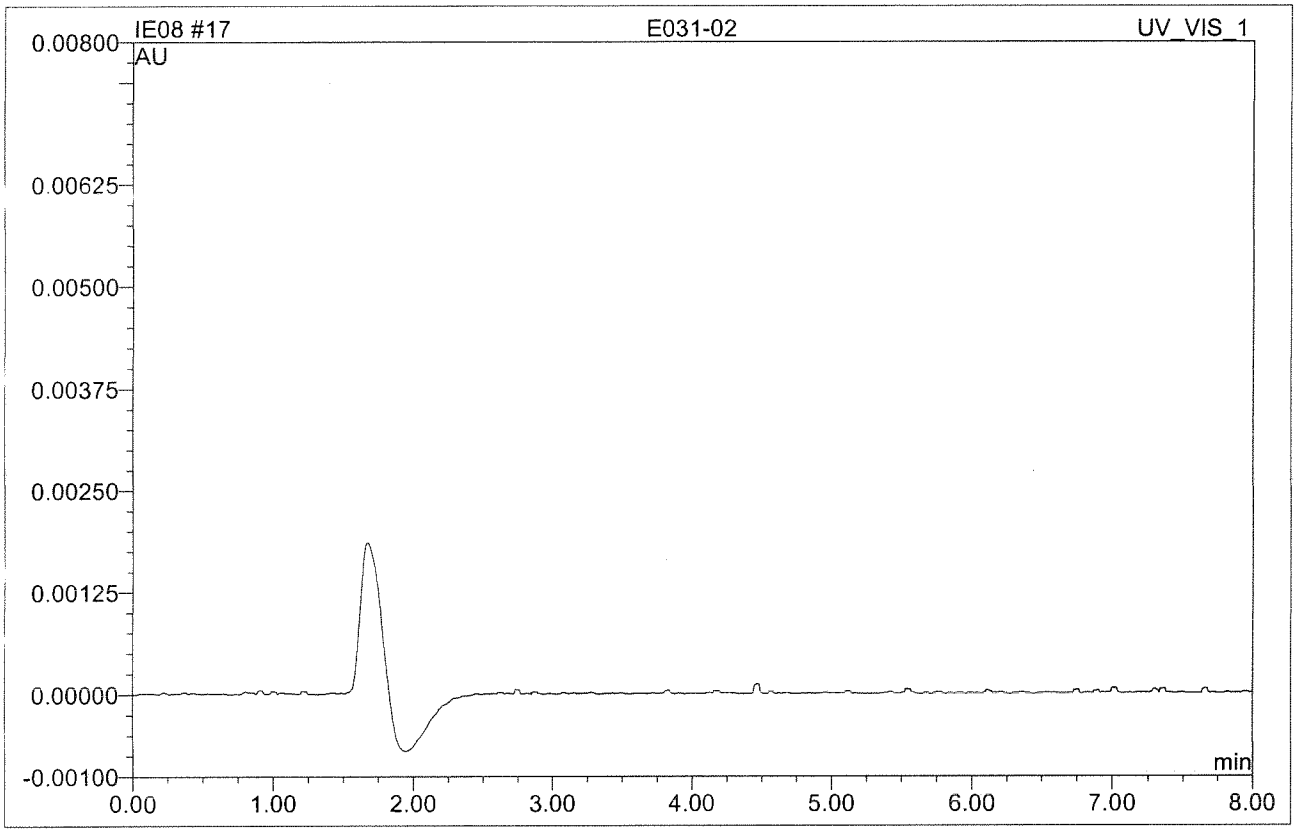
Sample Name:	**E031-01I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**2**
Recording Time:	**5/8/2017 15:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.00	Cr6	0.0020210	0.0004084	100.00	8.131	BMB*
Total:			0.002	0.000	100.00	8.131	

IE08 017 E031-02

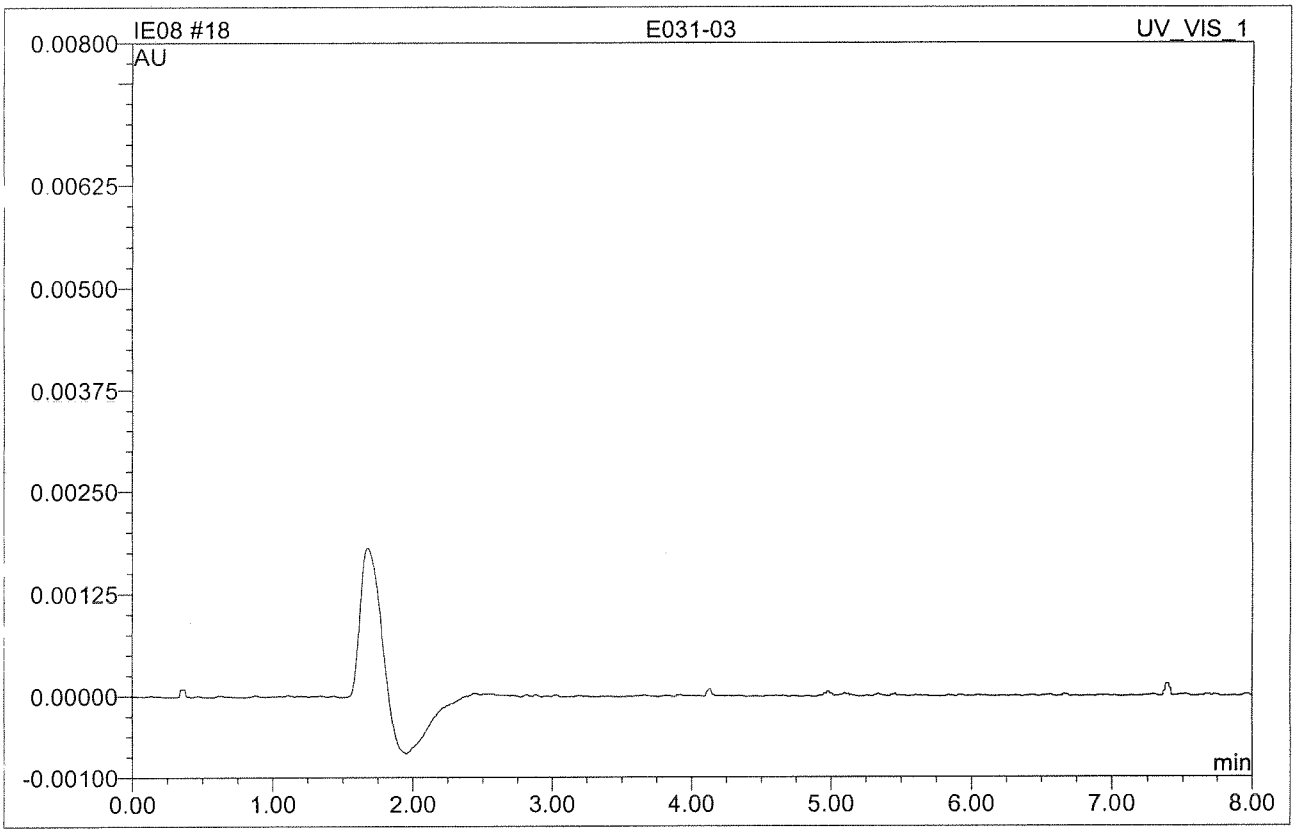
Sample Name:	**E031-02**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 14:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE08 018 E031-03

Sample Name:	**E031-03**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 14:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E031
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	HCE007WB	HCE007WL	HCE007WC
LAB FILE ID :	IE08013	IE08014	IE08015
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	05/08/1714:00	05/08/1714:11	05/08/1714:21
PREP BATCH :	HCE007W	HCE007W	HCE007W

CALIBRATION REF:

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	2.0	2.1	110	2	2.0	100	5	90-110	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E031
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 2	2
SAMPLE ID	: MW-55-120-Q217	MW-55-120-Q217MS
LAB SAMPLE ID	: E031-01I	E031-01M
LAB FILE ID	: IE08020	IE08019
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/08/1715:13	05/08/1715:03
PREP BATCH	: HCE007W	HCE007W
CALIBRATION REF:		

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	8.1	8.0	16.2	101	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E031
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID : MW-55-045-Q217 MW-55-045-Q217MS
LAB SAMPLE ID : E031-03 E031-03M
LAB FILE ID : IE08018 IE08024
DATE PREPARED : NA NA
DATE ANALYZED : 05/08/1714:52 05/08/1715:55
PREP BATCH : HCE007W HCE007W
CALIBRATION REF: IE08022

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.0	1.0	100	90-110

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E031
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MW-55-045-EB-Q217	MW-55-045-EB-Q217MS	MW-55-045-EB-Q217MSD
LAB SAMPLE ID :	E031-02	E031-02M	E031-02S
LAB FILE ID :	IE08017	IE08021	IE08025
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	05/08/1714:42	05/08/1715:24	05/08/1716:05
PREP BATCH :	HCE007W	HCE007W	HCE007W
CALIBRATION REF:	IE08022	IE08022	IE08022

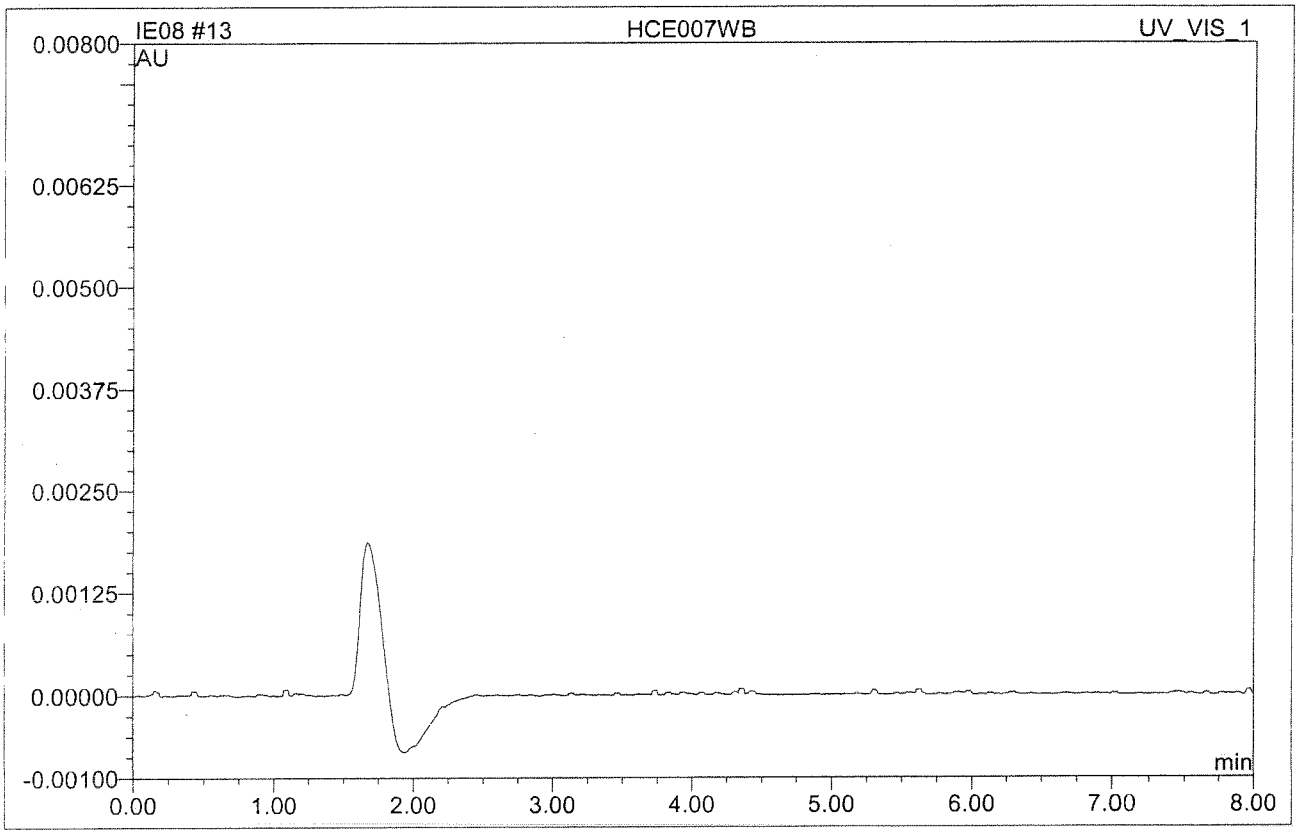
ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	SPIKE AMT (ug/L)	MSD RESULT (ug/L)	MSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	1.0	0.99	99	1.0	1.0	100	1	90-110	20

QC DATA

IE08 013 HCE007WB

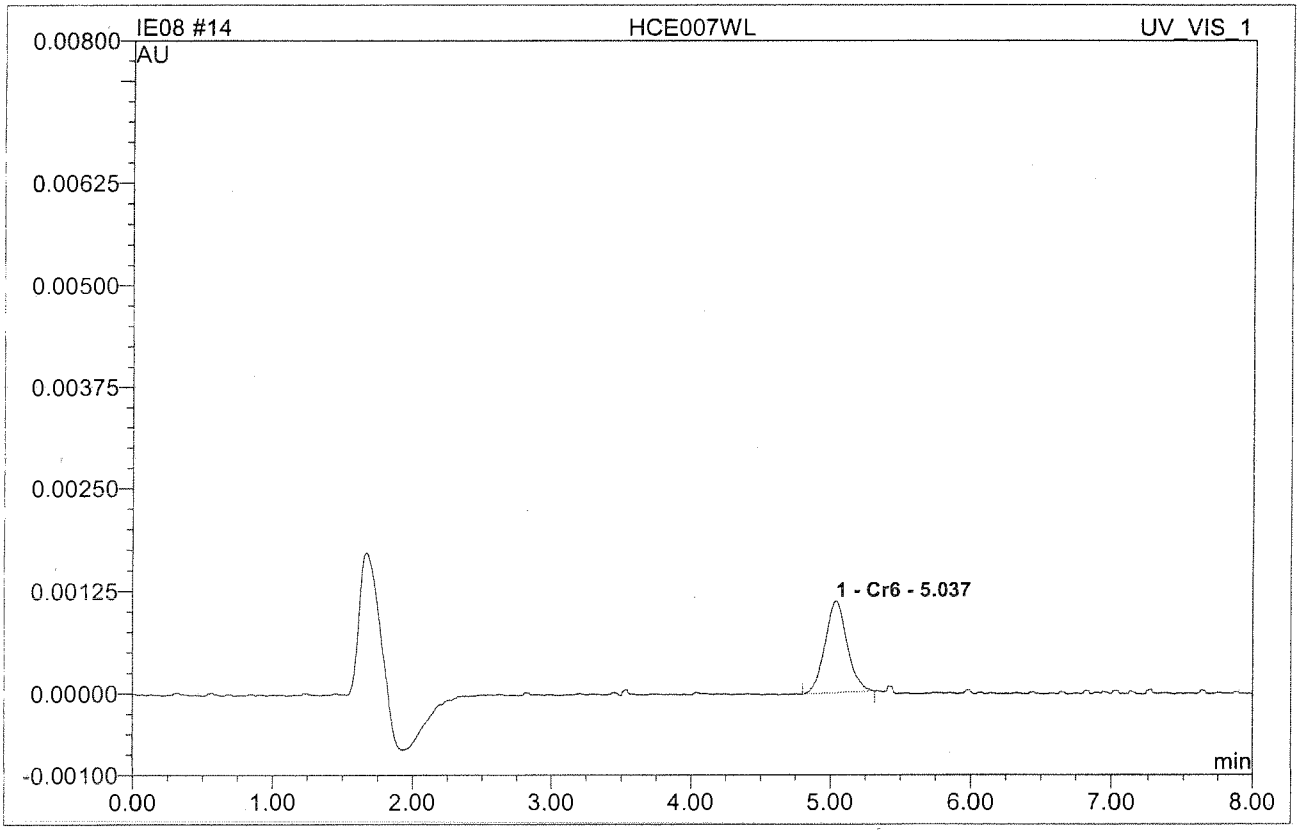
Sample Name:	**HCE007WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 14:00**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE08 014 HCE007WL

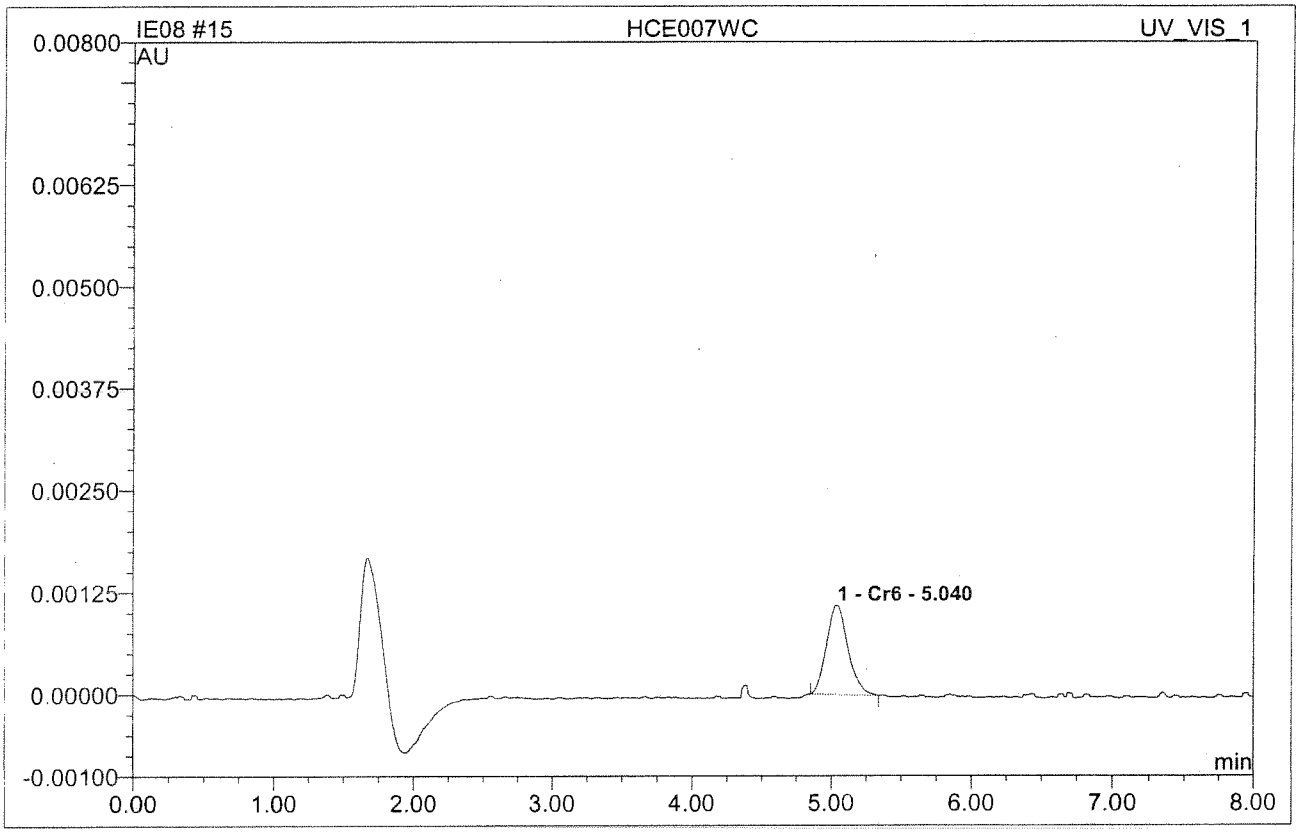
Sample Name:	**HCE007WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 14:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.04	Cr6	0.0011230	0.0002060	100.00	2.061	BMB
Total:			0.001	0.000	100.00	2.061	

IE08 015 HCE007WC

Sample Name:	**HCE007WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 14:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

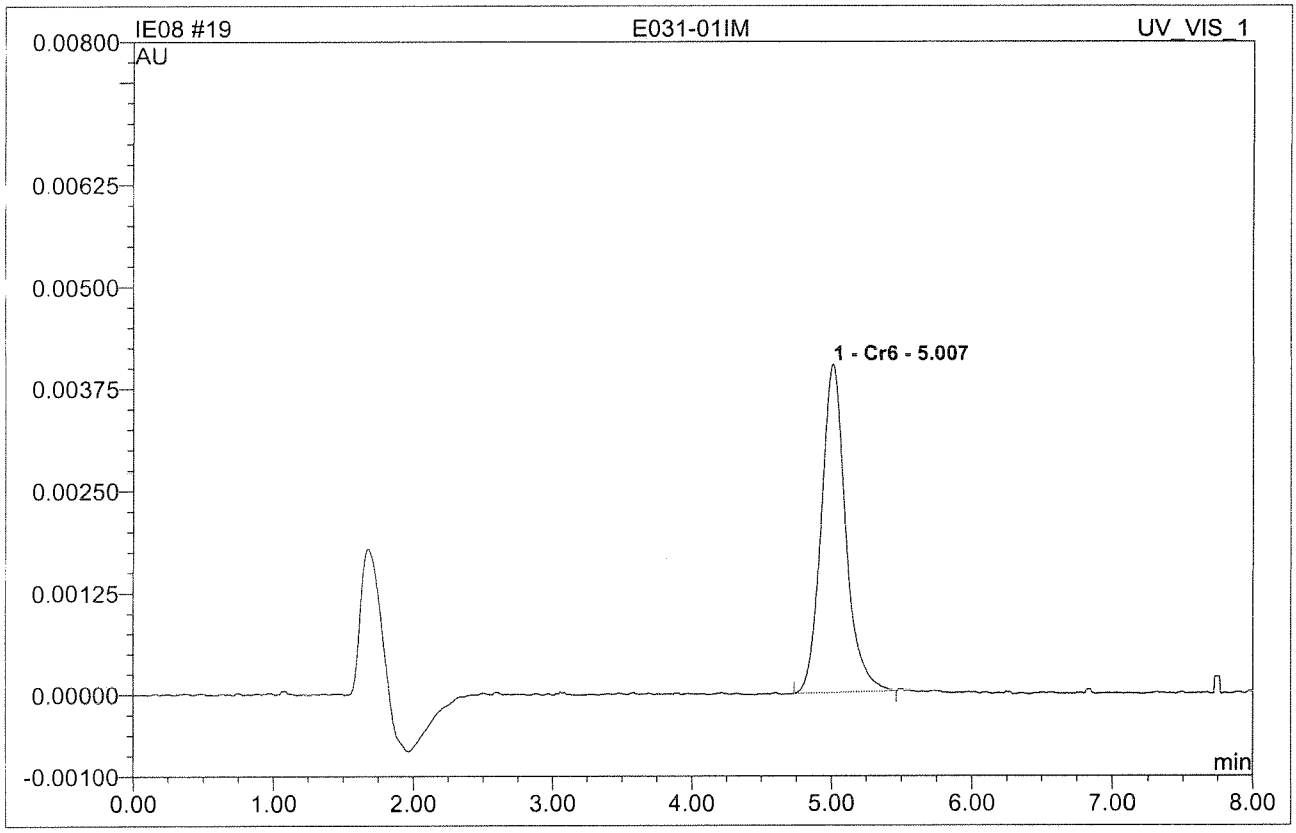


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.04	Cr6	0.0011010	0.0001985	100.00	1.986	BMB
Total:			0.001	0.000	100.00	1.986	

IE08 019 E031-01IM

DF=2; MS@4PPB

Sample Name:	**E031-01IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**2**
Recording Time:	**5/8/2017 15:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

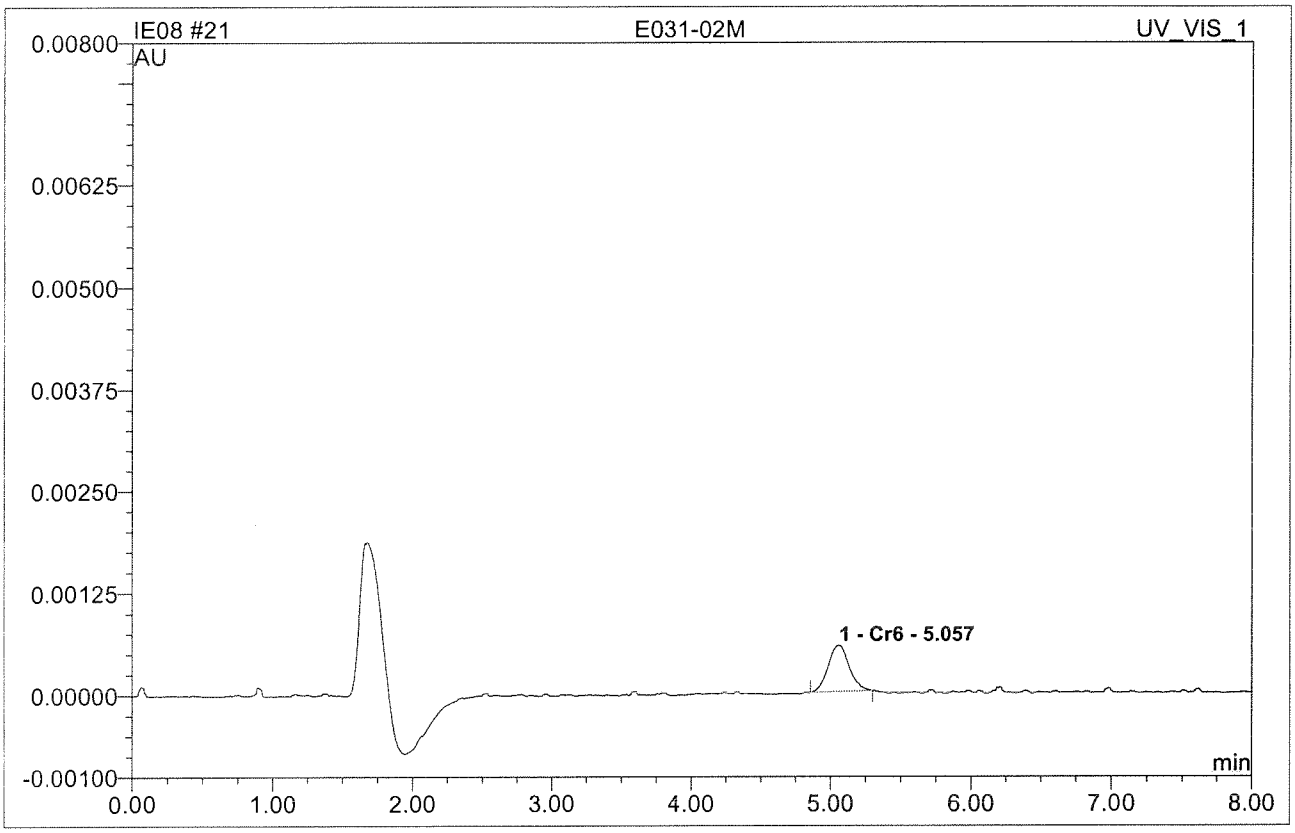


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.01	Cr6	0.0040240	0.0008156	100.00	16.197	BMB
Total:			0.004	0.001	100.00	16.197	

IE08 021 E031-02M

MS @ 1PPB

Sample Name:	**E031-02M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 15:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

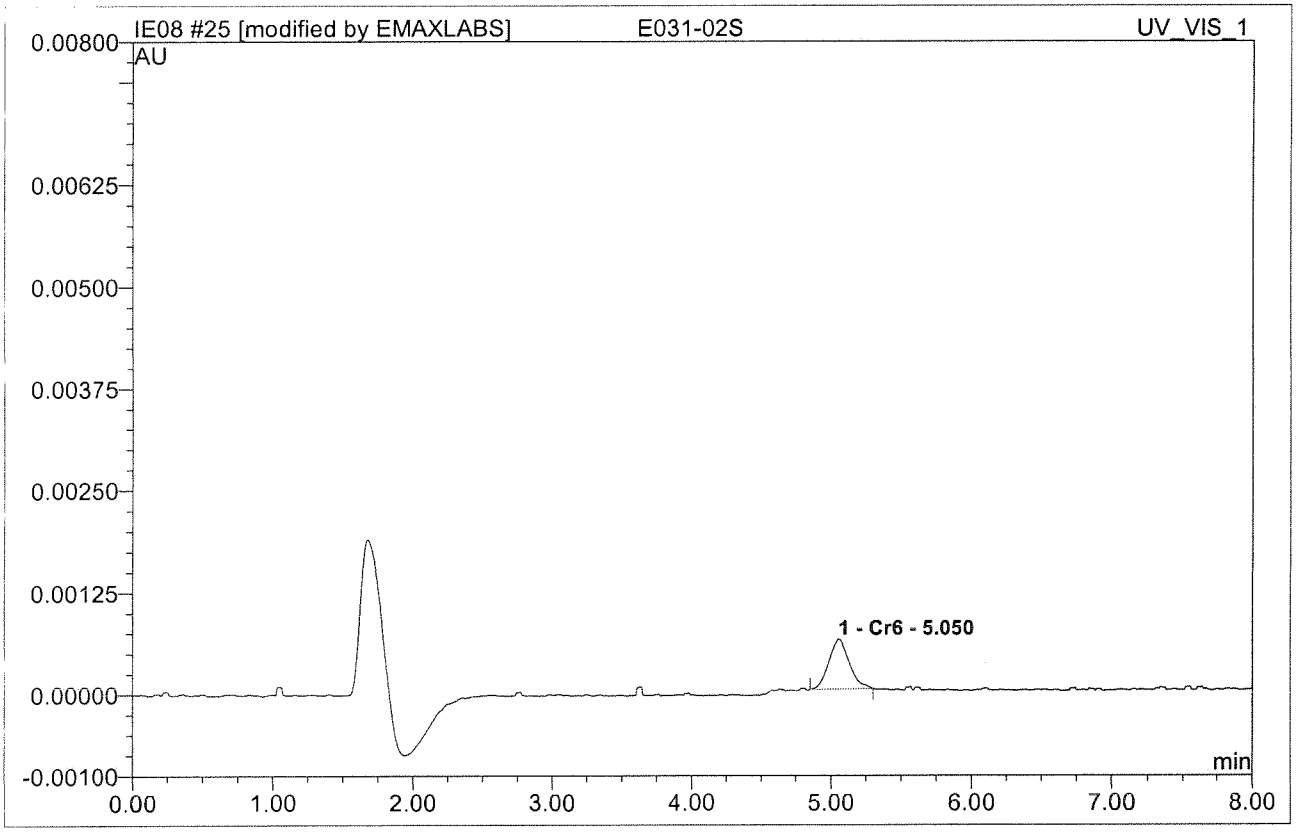


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0005680	0.0000982	100.00	0.992	BMB
Total:			0.001	0.000	100.00	0.992	

IE08 025 E031-02S

MS @ 1PPB

Sample Name:	**E031-02S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 16:05**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**

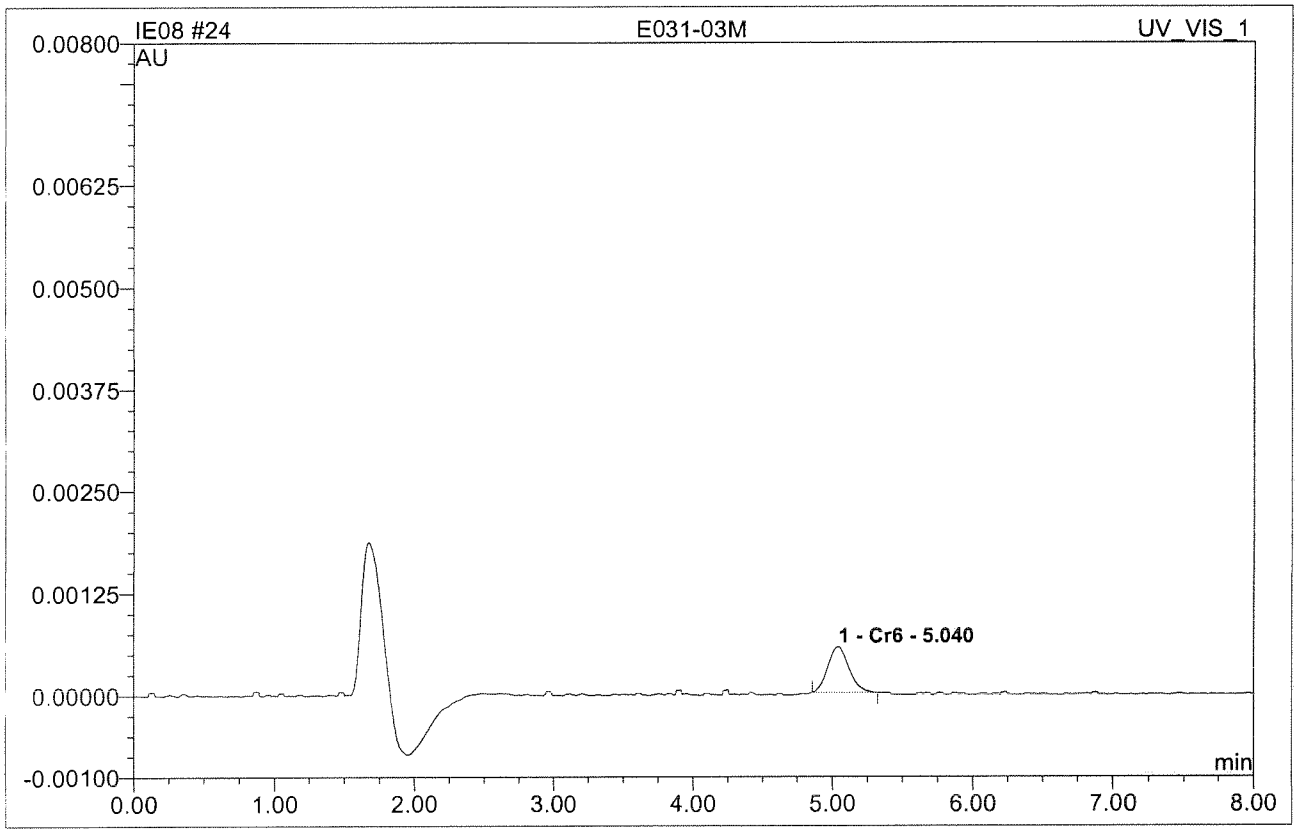


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0006150	0.0001037	100.00	1.047	BMB*
Total:			0.001	0.000	100.00	1.047	

IE08 024 E031-03M

MS @ 1PPB

Sample Name:	**E031-03M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 15:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.04	Cr6	0.0005660	0.0000999	100.00	1.010	BMB
Total:			0.001	0.000	100.00	1.010	

INITIAL CALIBRATIONS

IC RESULT FORM CalVersion : CR6.E08/IE08 (2017)

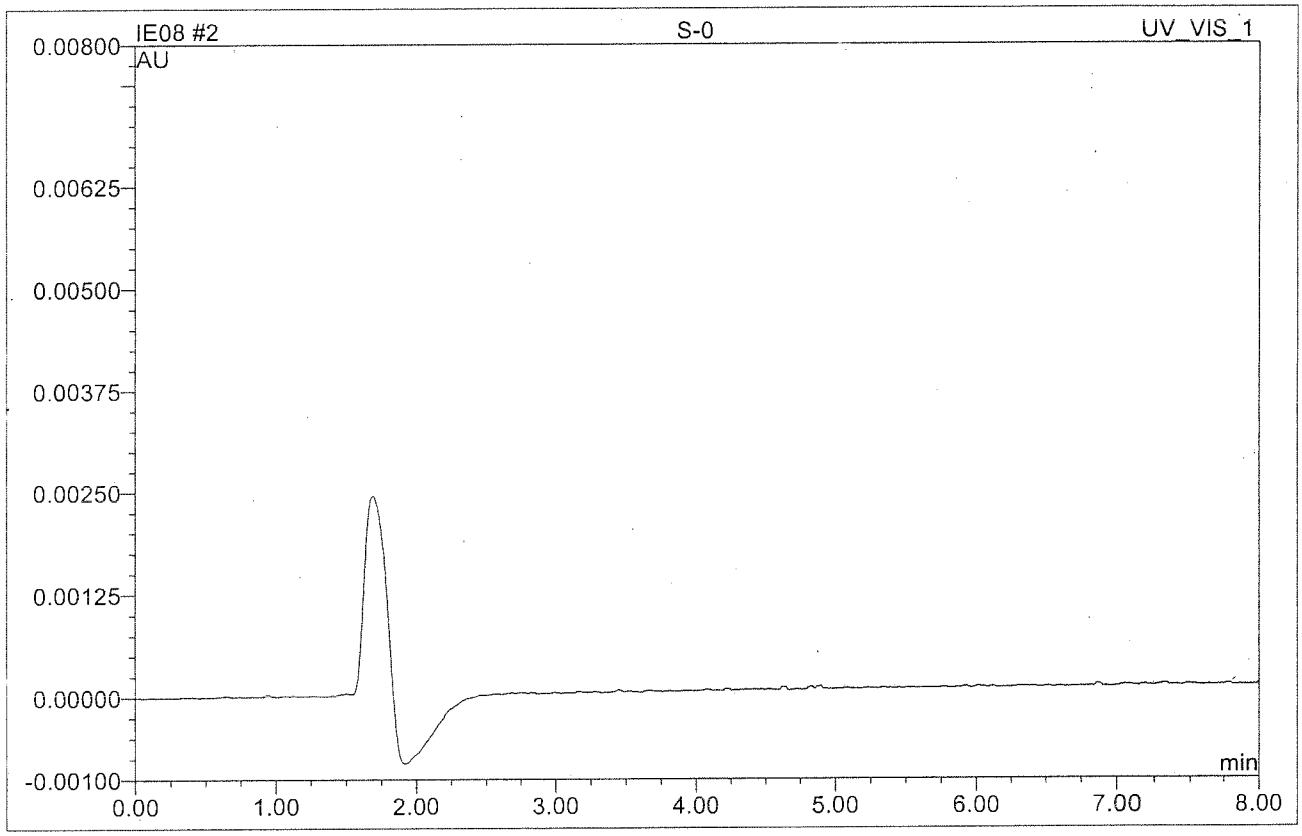
LFID	LSID	SelCmp	Cr6	DateTime	DF
IE08001	IB	C	ND	05/08/1711:55	1
IE08002	S-0	C	ND	05/08/1712:06	1
IE08003	S-1	C	0.200	05/08/1712:16	1
IE08004	S-2	C	0.499	05/08/1712:26	1
IE08005	S-3	C	0.994	05/08/1712:37	1
IE08006	S-4	C	1.985	05/08/1712:47	1
IE08007	S-5	C	4.987	05/08/1712:58	1
IE08008	S-6	C	7.519	05/08/1713:08	1
IE08009	S-7	C	9.996	05/08/1713:18	1
IE08010	ICV	C	99%	05/08/1713:29	1
IE08011	ICB	C	ND	05/08/1713:39	1

METHOD: IC59E08
SOLVENT: BUFFER (SW4-03-37-02)

5-9-17

IE08_002 S-0

Sample Name:	**S-0**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



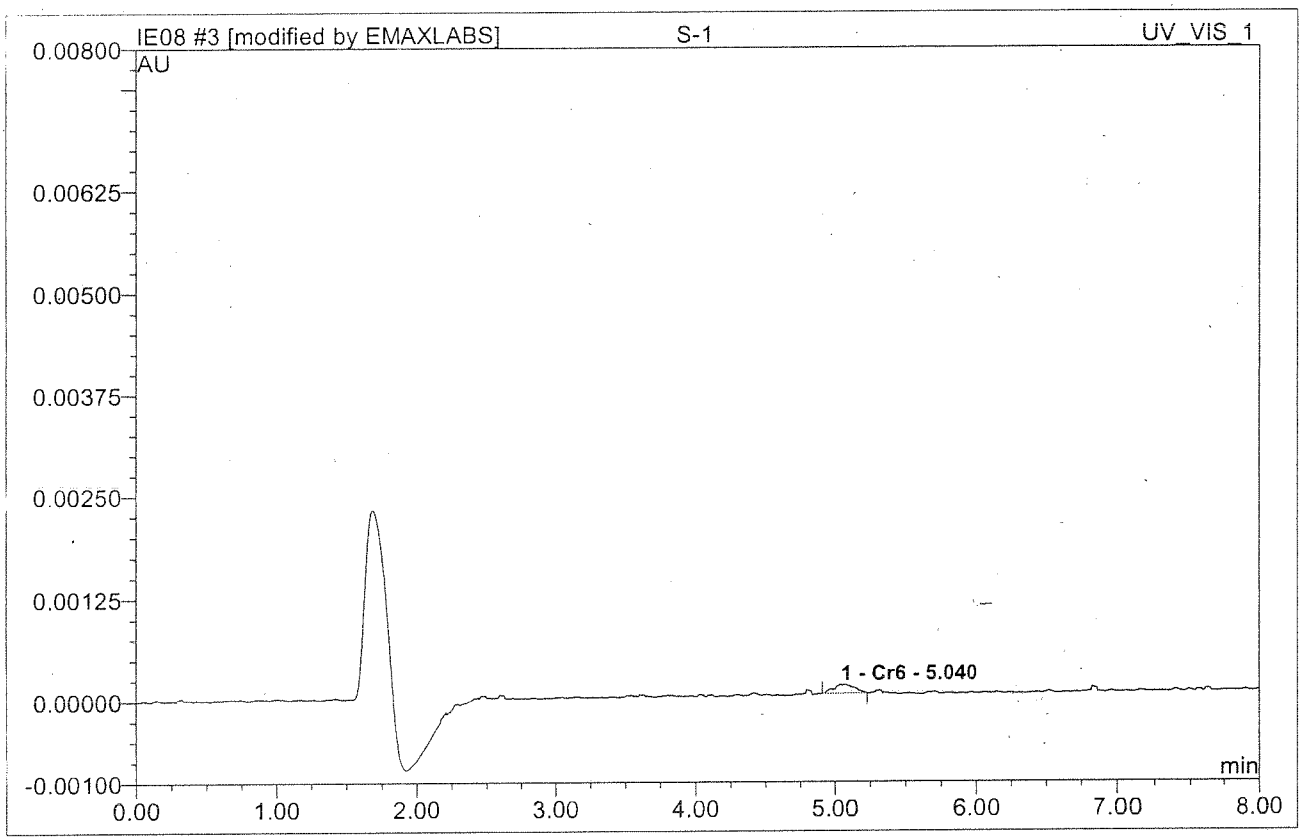
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

5-9-17

IE08 003 S-1

0.2 PPB

Sample Name:	**S-1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



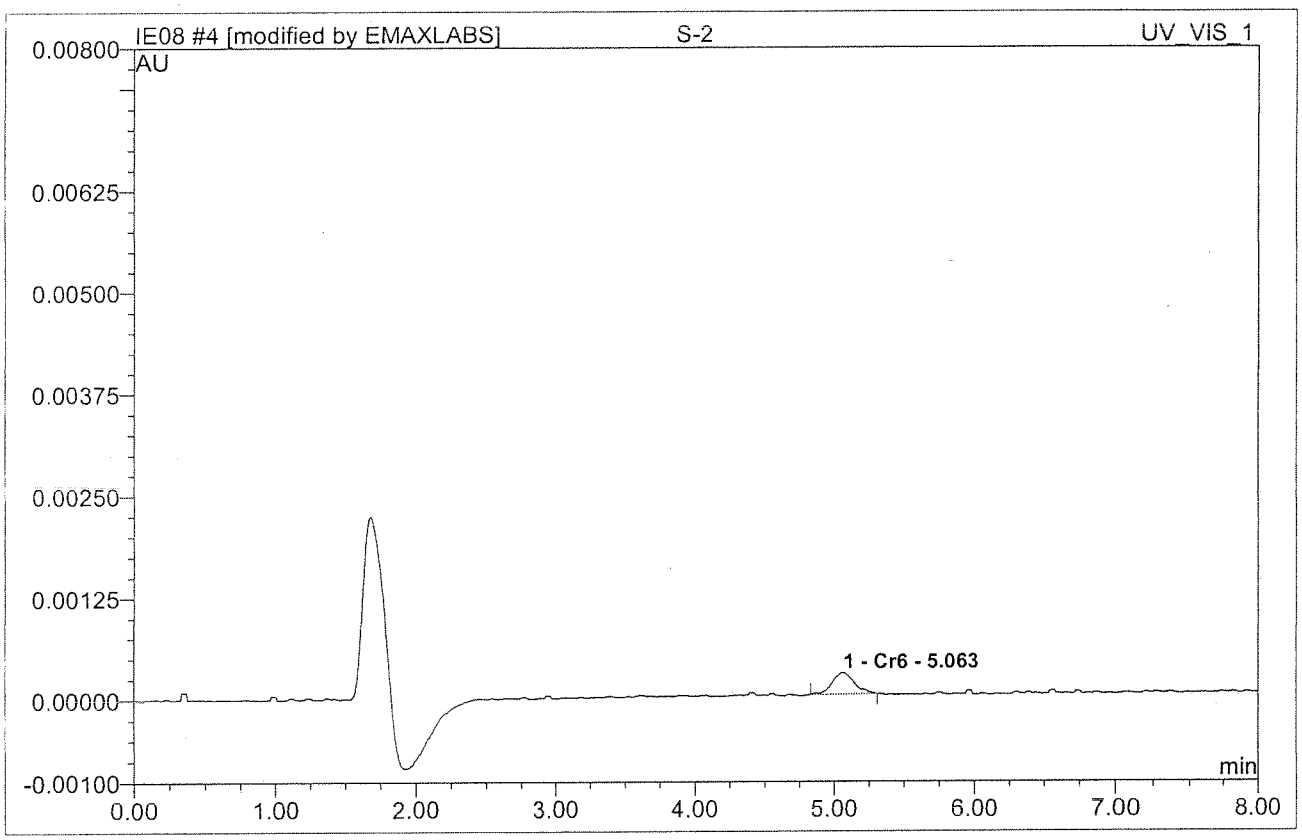
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.04	Cr6	0.0001100	0.0000182	100.00	0.200	BMB*
Total:			0.000	0.000	100.00	0.200	

5-9-17

IE08 004 S-2

0.5 PPB

Sample Name:	**S-2**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



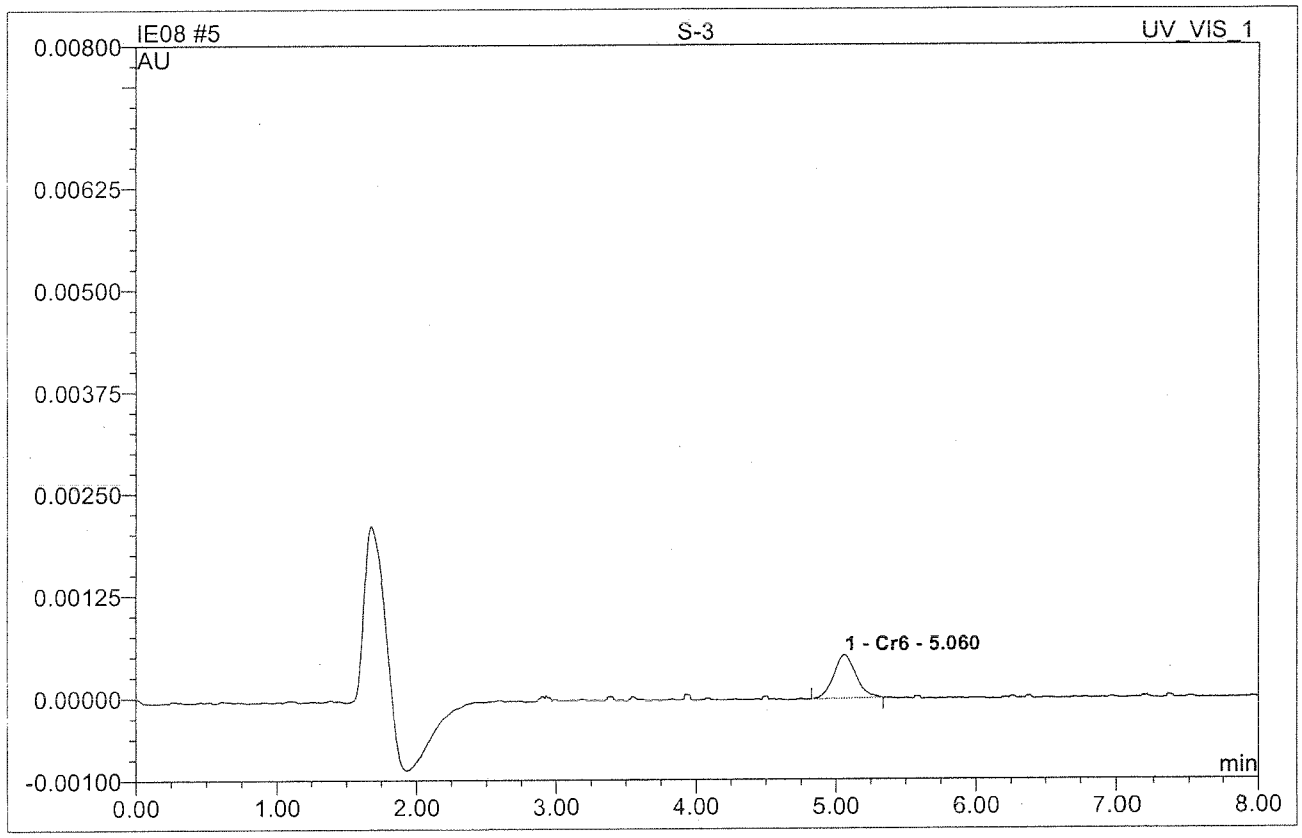
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0002640	0.0000483	100.00	0.499	BMB*
Total:			0.000	0.000	100.00	0.499	

5-9-17

IE08 005 S-3

1.0 PPB

Sample Name:	**S-3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



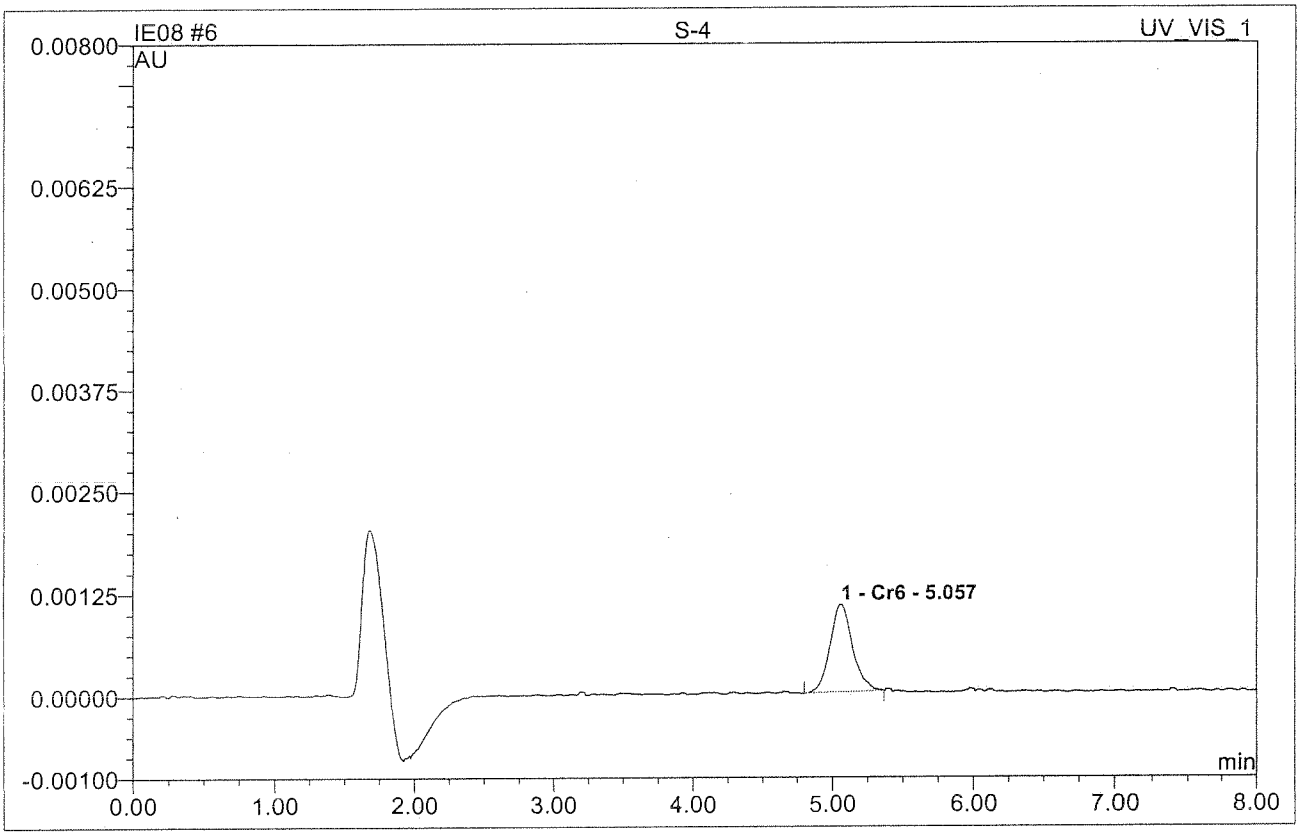
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0005350	0.0000984	100.00	0.994	BMB
Total:			0.001	0.000	100.00	0.994	

pc 5-9-17

IE08 006 S-4

2.0 PPB

Sample Name:	**S-4**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



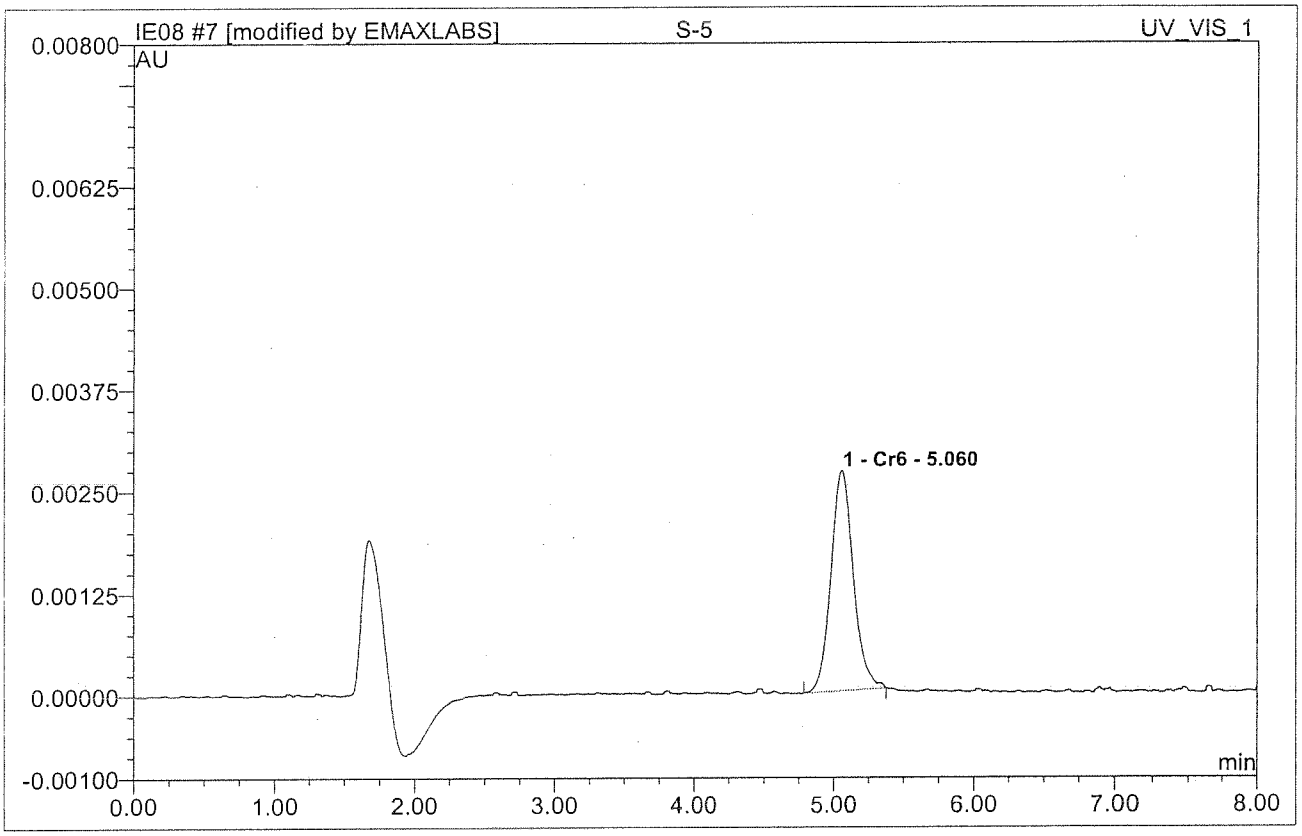
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0010730	0.0001984	100.00	1.985	BMB
Total:			0.001	0.000	100.00	1.985	

5-9-17

IE08 007 S-5

5.0 PPB

Sample Name:	**S-5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



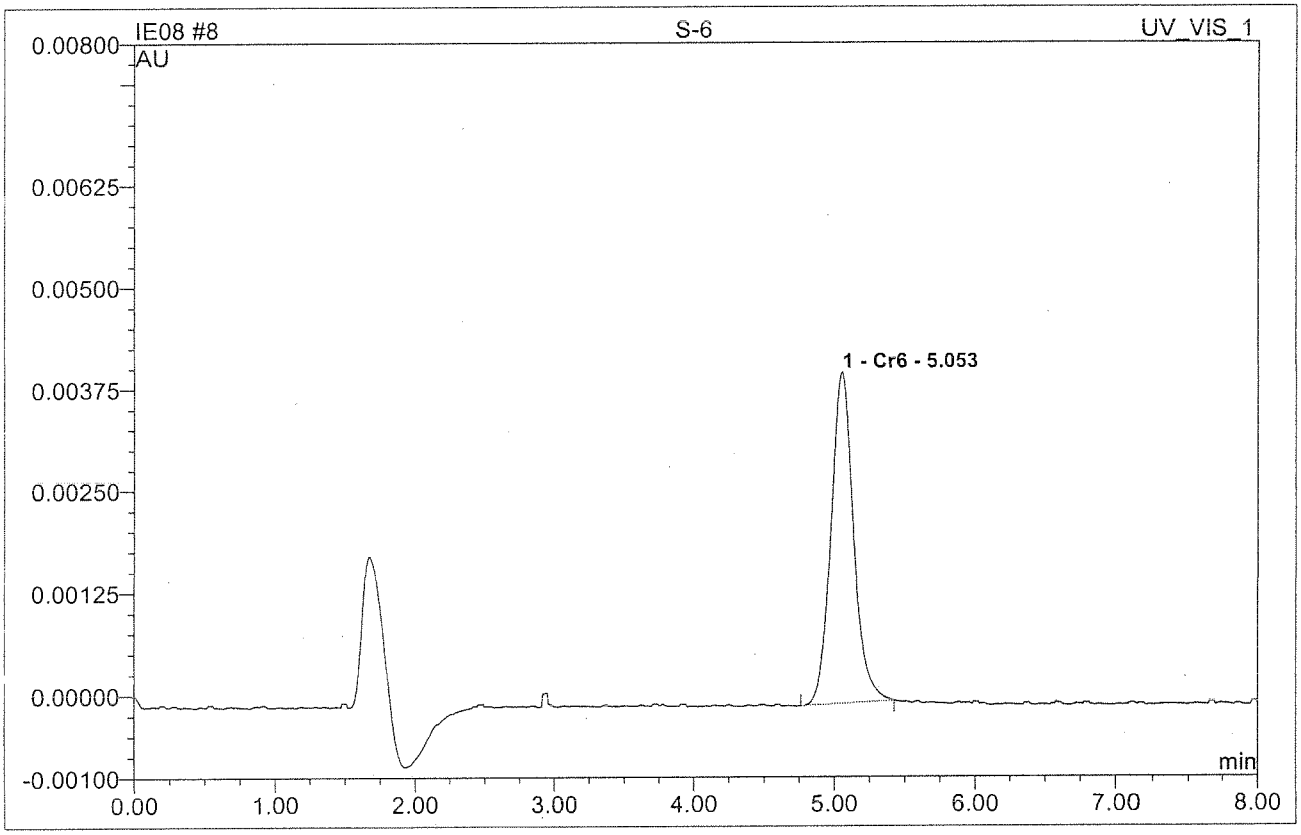
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0026920	0.0005014	100.00	4.987	BMB*
Total:			0.003	0.001	100.00	4.987	

5-9-17

IE08 008 S-6

7.5 PPB

Sample Name:	**S-6**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0040590	0.0007571	100.00	7.519	BMB
Total:			0.004	0.001	100.00	7.519	

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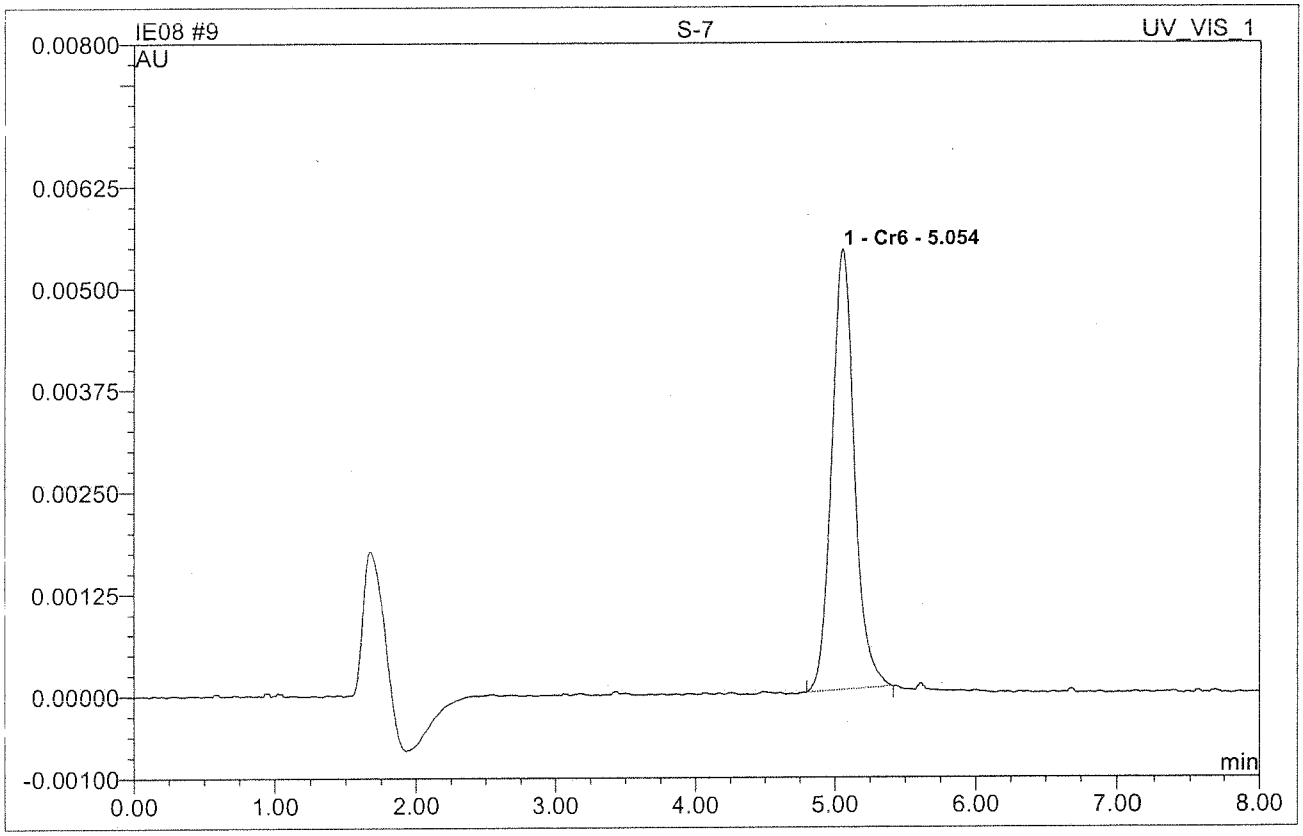
IE08 009 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



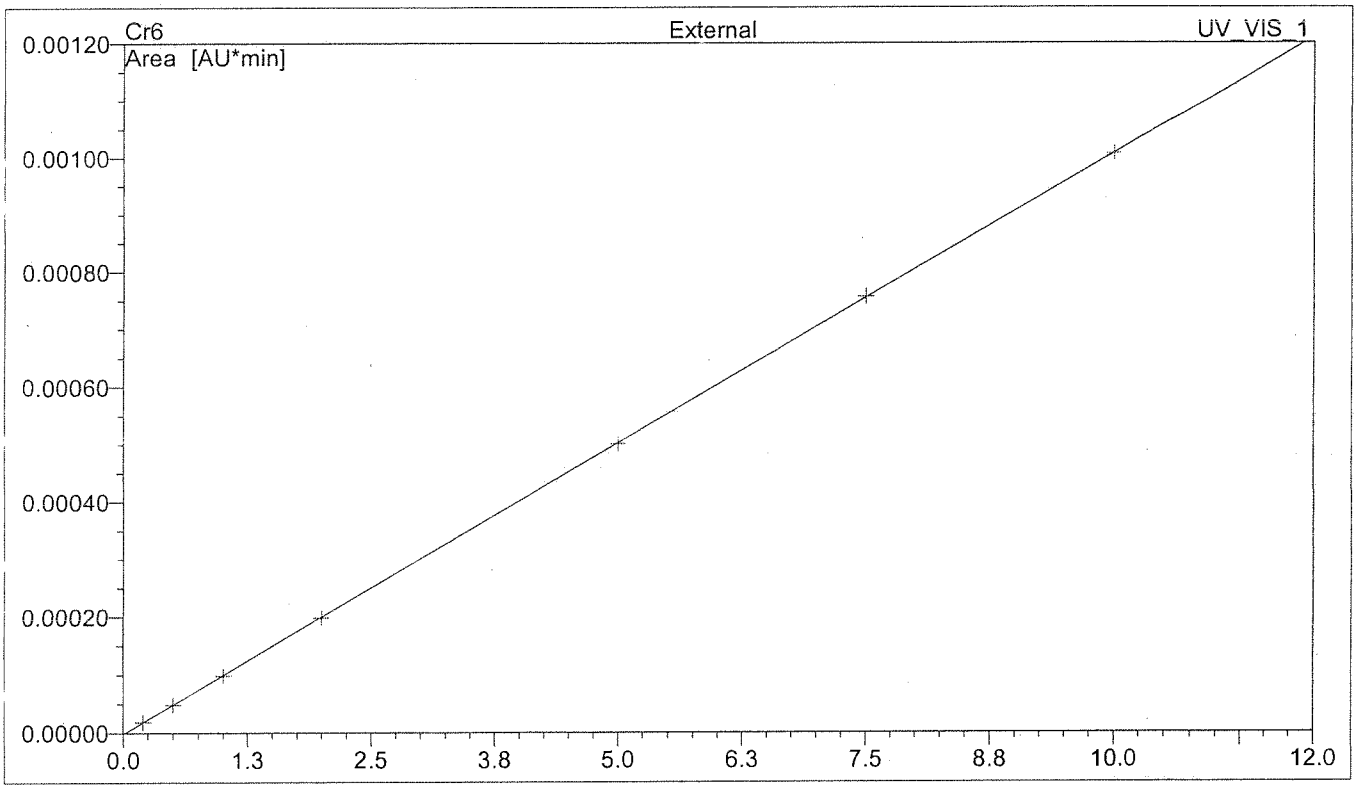
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0054030	0.0010071	100.00	9.996	BMB
Total:			0.005	0.001	100.00	9.996	

pe 5-9-17

9 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/8/2017 13:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square	Offset	Slope	Curve
1	5.05	Cr6	0LOff	7	1.0000	-0.0000020	0.0001010	0.0000
Average:					1.0000	0.0000	0.0001	0.0000

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SECOND SOURCE VERIFICATION

IC RESULT FORM CalVersion : CR6.E08/IE08 (2017)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IE08001	IB	C	ND	05/08/1711:55	1
IE08002	S-0	C	ND	05/08/1712:06	1
IE08003	S-1	C	0.200	05/08/1712:16	1
IE08004	S-2	C	0.499	05/08/1712:26	1
IE08005	S-3	C	0.994	05/08/1712:37	1
IE08006	S-4	C	1.985	05/08/1712:47	1
IE08007	S-5	C	4.987	05/08/1712:58	1
IE08008	S-6	C	7.519	05/08/1713:08	1
IE08009	S-7	C	9.996	05/08/1713:18	1
IE08010	ICV	C	99%	05/08/1713:29	1
IE08011	ICB	C	ND	05/08/1713:39	1

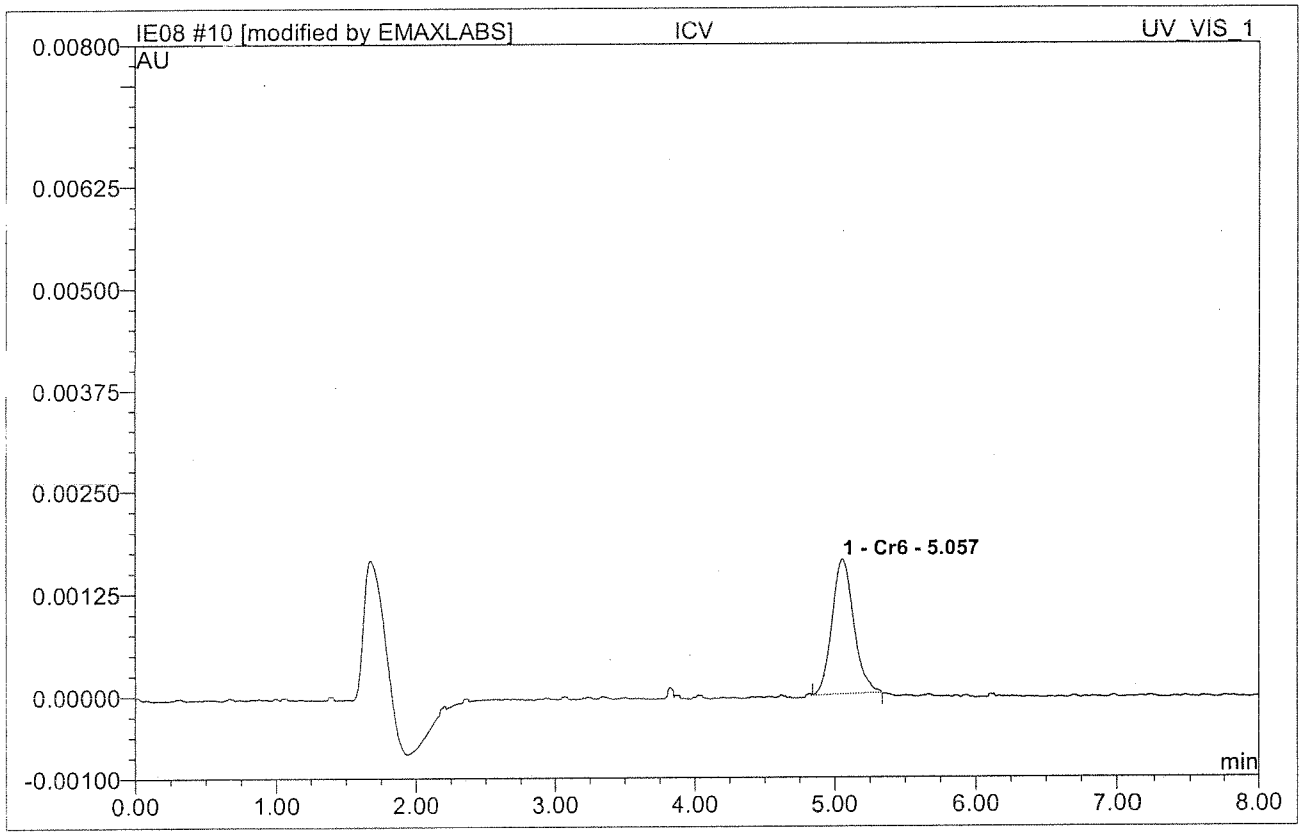
METHOD: IC59E08
SOLVENT: BUFFER (SW4-03-37-02)

5-9-17

IE08 010 ICV

3.0 PPB

Sample Name:	**ICV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**



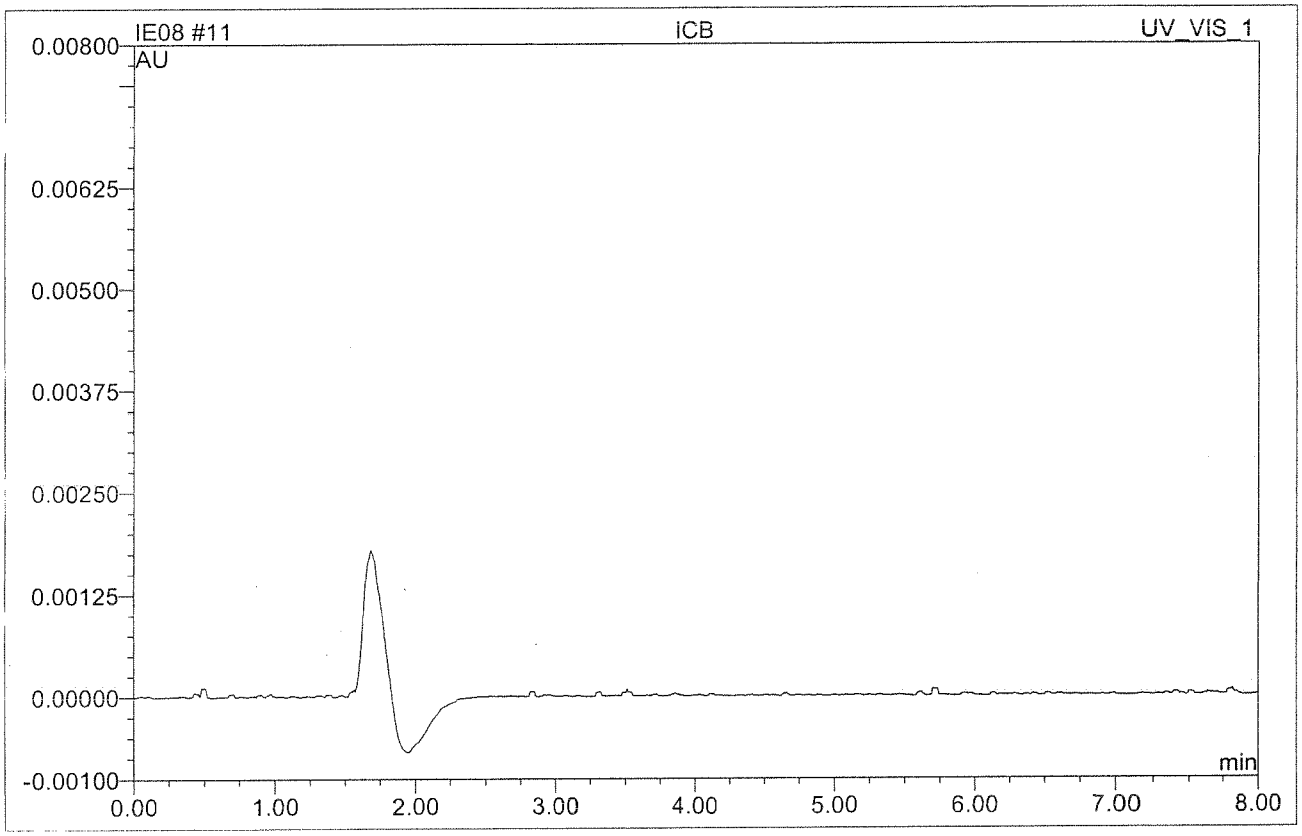
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount		Type
1	5.06	Cr6	0.0016430	0.0002971	100.00	2.963	✓	BMB*
Total:			0.002	0.000	100.00	2.963		

Conc. = $\frac{\text{Area} - \text{offset}}{\text{slope}}$

TW 5-9-17

IE08 011 ICB

Sample Name:	**ICB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

5-9-17

DAILY CALIBRATIONS

Continuing Calibration Summary Form

Client : ASSET LABS
Project : PG&E
SDG : 17E031
Method : E218.6
QuantMethod : IC59E08
InstrumentID: 59
Parameter : HEXAVALENT CHROMIUM

LFID	LSID	DF	Expected	Result	Unit	%Rec	AnalysisDateTime
IE08022	CCV1	1	2	1.983	ug/L	99	05/08/1715:34
IE08029	CCV3	1	2	1.942	ug/L	97	05/08/1716:48

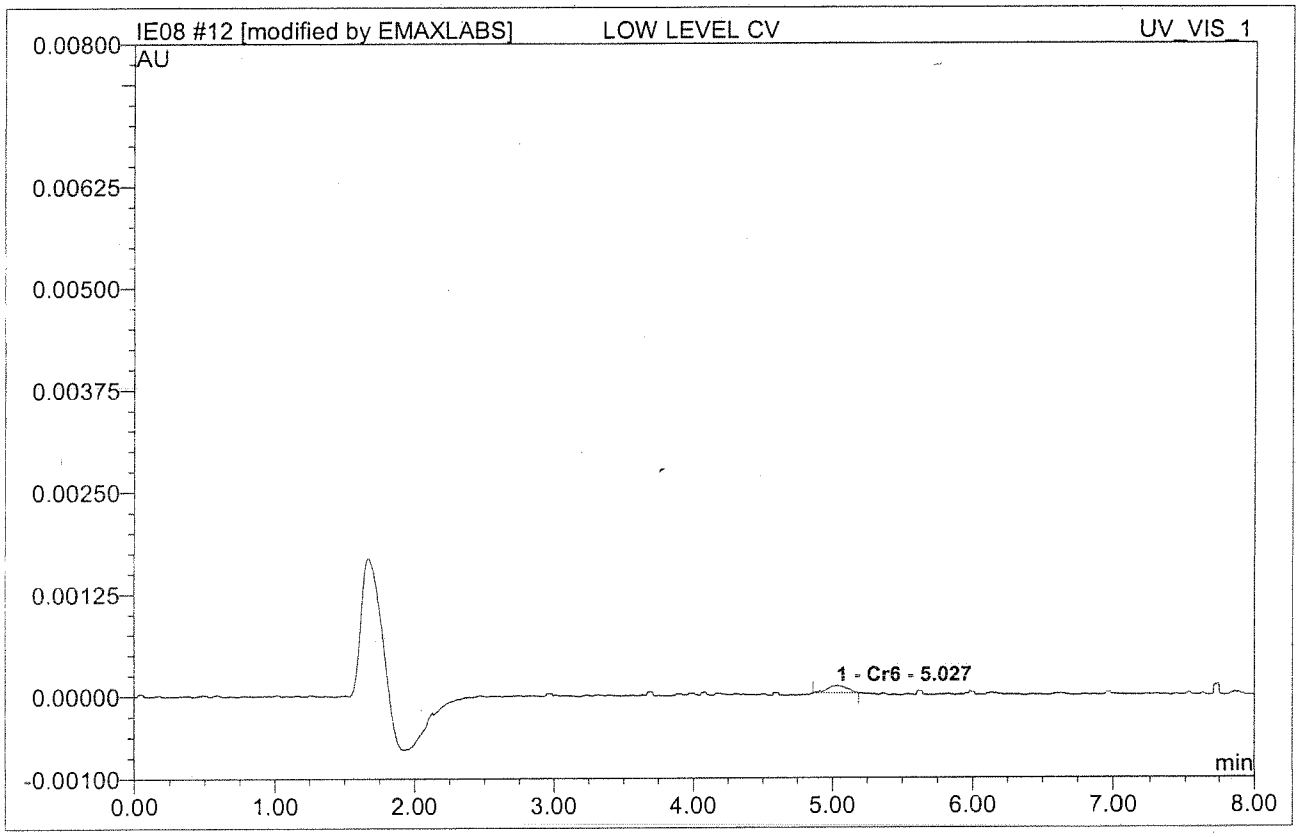
CCV Acceptance Criteria: 90-110%

IC RESULT FORM CalVersion : CR6.E08/IE08 (2017)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IE08001	IB	C	ND	05/08/1711:55	1
IE08002	S-0	C	ND	05/08/1712:06	1
IE08003	S-1	C	0.200	05/08/1712:16	1
IE08004	S-2	C	0.499	05/08/1712:26	1
IE08005	S-3	C	0.994	05/08/1712:37	1
IE08006	S-4	C	1.985	05/08/1712:47	1
IE08007	S-5	C	4.987	05/08/1712:58	1
IE08008	S-6	C	7.519	05/08/1713:08	1
IE08009	S-7	C	9.996	05/08/1713:18	1
IE08010	ICV	C	99%	05/08/1713:29	1
IE08011	ICB	C	ND	05/08/1713:39	1
IE08012	LOW LEVEL	C	0.173	05/08/1713:50	1
IE08013	HCE007WB	C	ND	05/08/1714:00	1
IE08014	HCE007WL	C	2.061	05/08/1714:11	1
IE08015	HCE007WC	C	1.986	05/08/1714:21	1
IE08016	E031-01	C	8.209	05/08/1714:32	1
IE08017	E031-02	C	ND	05/08/1714:42	1
IE08018	E031-03	C	ND	05/08/1714:52	1
IE08019	E031-01IM	C	16.197	05/08/1715:03	2
IE08020	E031-01I	C	8.131	05/08/1715:13	2
IE08021	E031-02M	C	0.992	05/08/1715:24	1
IE08022	CCV1	C	99%	05/08/1715:34	1
IE08023	CCB1	C	ND	05/08/1715:44	1
IE08024	E031-03M	C	1.010	05/08/1715:55	1
IE08025	E031-02S	C	1.047	05/08/1716:05	1
IE08026	E488-01	C	ND	05/08/1716:16	1
IE08027	E488-03	C	0.145	05/08/1716:27	1
IE08028	E488-01A	C	1.086	05/08/1716:37	1
IE08029	CCV3	C	97%	05/08/1716:48	1
IE08030	CCB3	C	ND	05/08/1716:58	1

IE08 012 LOW LEVEL CV

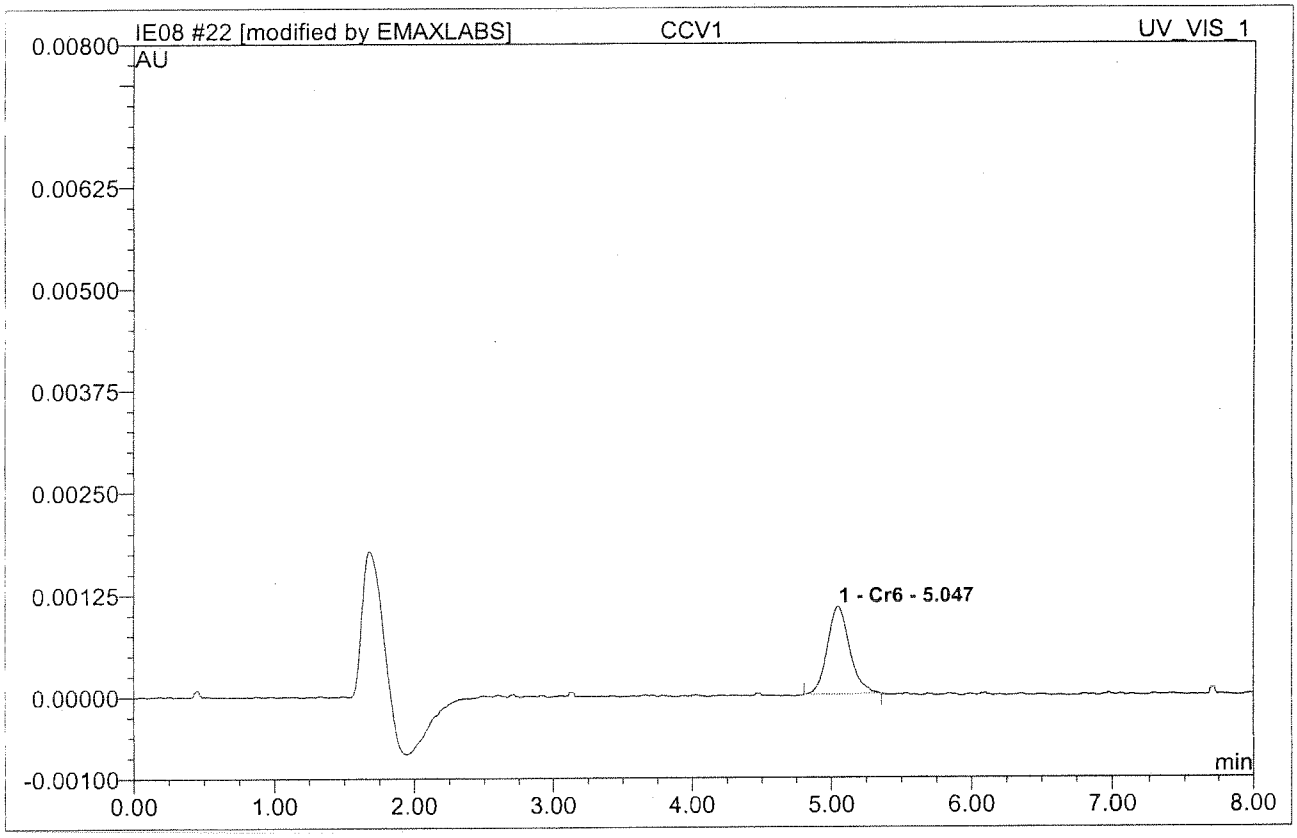
Sample Name:	**LOW LEVEL CV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.03	Cr6	0.0000950	0.0000155	100.00	0.173	BMB*
Total:			0.000	0.000	100.00	0.173	

IE08 022 CCV1

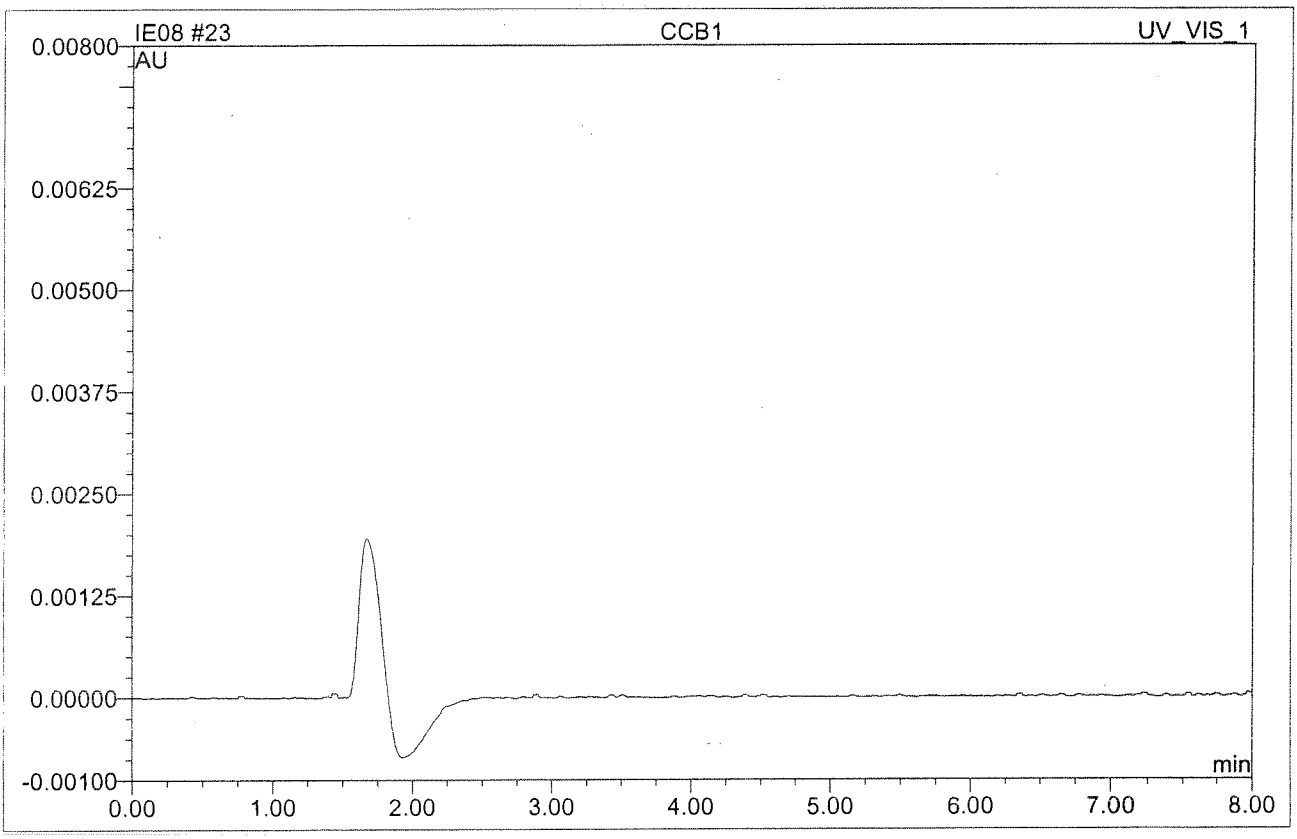
Sample Name:	**CCV1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 15:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0010760	0.0001981	100.00	1.983	BMB*
Total:			0.001	0.000	100.00	1.983	

IE08 023 CCB1

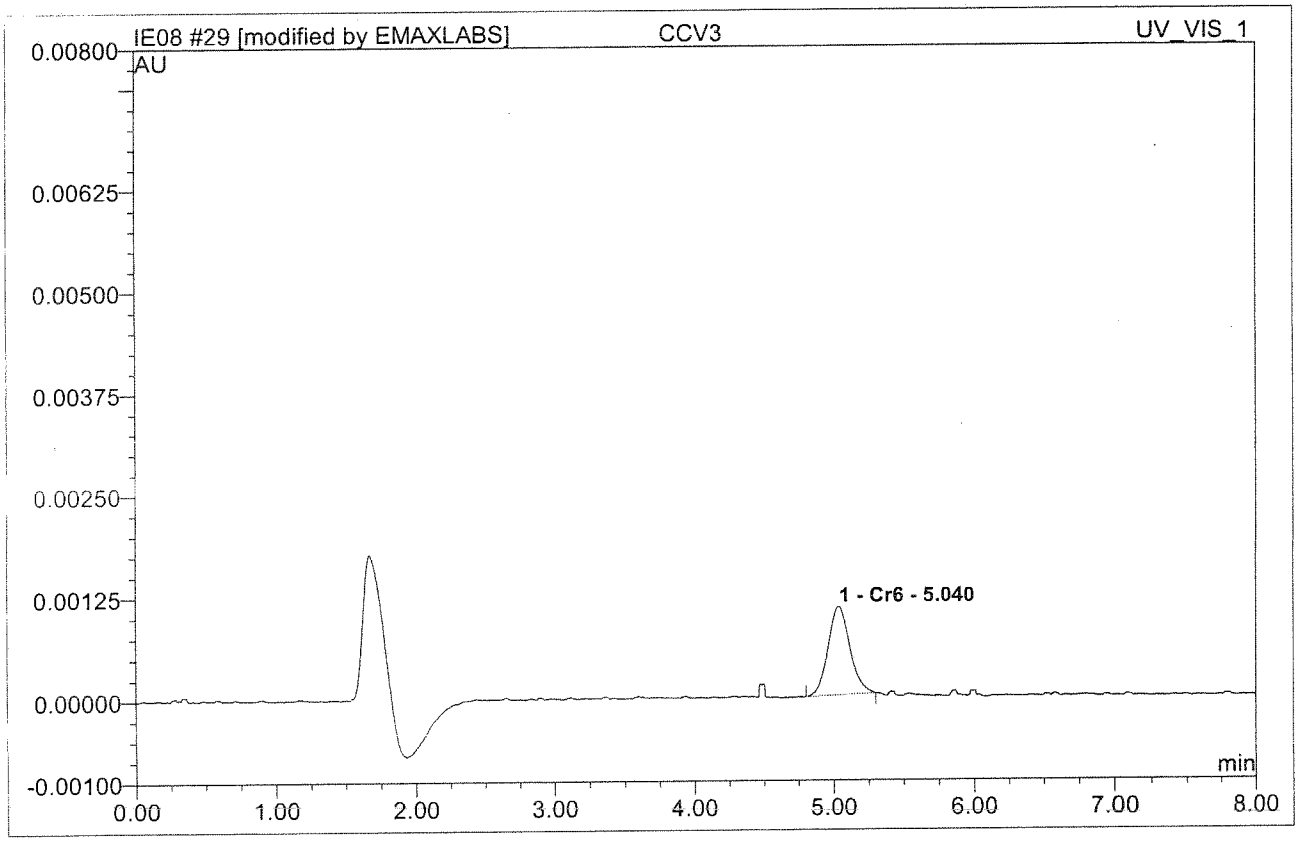
Sample Name:	**CCB1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 15:44**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE08 029 CCV3

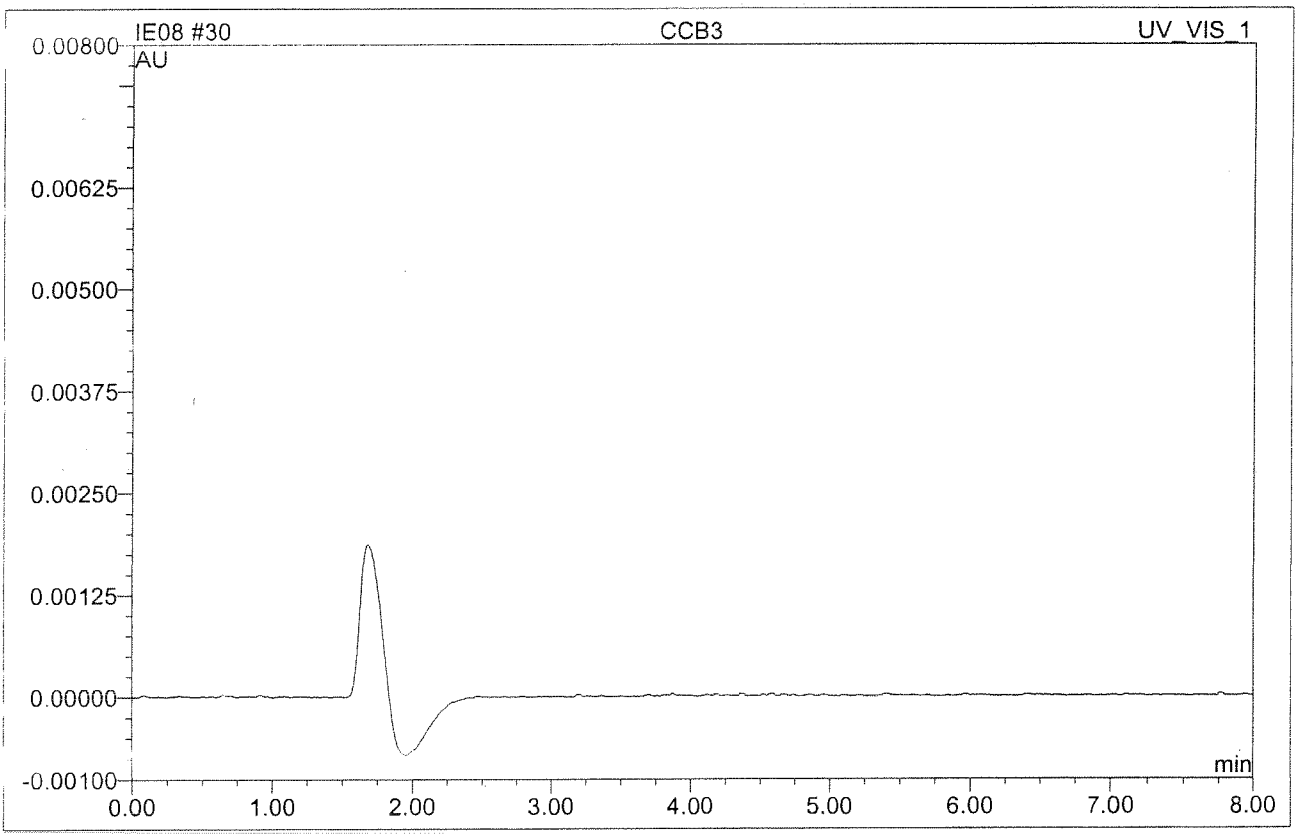
Sample Name:	**CCV3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 16:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.04	Cr6	0.0010770	0.0001940	100.00	1.942	BMB*
Total:			0.001	0.000	100.00	1.942	

IE08 030 CCB3

Sample Name:	**CCB3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 16:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

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

Comments:

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

MeOH : 100 ml SW1A-006-02-16

H_2SO_4 : 28 ml ↓ -03-25

$(NH_4)_2SO_4$: 66 g SW9A-04-047

NH_4OH : 13 ml ↓ -036

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

☑ Buffer (10 mL → 100 mL) SW4-03-37-02

Reagent Water ID #: RW1-17-001

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

HCE007W: E031, E488

column: Dionex IonPac AS7 (4x250mm) serial# 015353
guard column: Dionex IonPac NG1 (4x35mm) serial# 160830142
wavelength: 530 nm
Flow Rate: 1.0 mL/min
injection vol.: 250 µL

Book #:	A59-041
Instrument No.:	59
Pipette ID:	SW9A-04-017 ✓
	SW9A-04-025 ✓
	SW9A-04-045 ✓
Balance ID:	10601202
Analytical Sequence:	IE08
Method File:	IC59E08
Analytical Batch:	HCE007W

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

STANDARDS ID	
ICAL	SW9B-06-11-12
ICV	-13
CCV	-14
LCS	-15
MS	SW9B-06-11-05
low level cal. verif.	SW9B-06-11-16

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

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

0.45 µm filter lot #: 61485103 4 oz: 17816006

0.2 µm filter lot #: 1.5 oz: 09416004

Analyzed By: KG

Date: 5/8/17

Sequence: IE08
Operator: EMAXLABS

Printed: 5/8/2017 5:45:12 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2017
Timebase: DX600
#Samples: 30

Created: 5/8/2017 11:24:42 AM by EMAXLABS
Last Update: 5/8/2017 5:41:20 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IE08	001	IB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 11:55:45 AM	1.0000	BUFFER
2	IE08	002	S-0	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:06:09 PM	1.0000	
3	IE08	003	S-1	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:16:33 PM	1.0000	0.2 PPB
4	IE08	004	S-2	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:26:58 PM	1.0000	0.5 PPB
5	IE08	005	S-3	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:37:22 PM	1.0000	1.0 PPB
6	IE08	006	S-4	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:47:46 PM	1.0000	2.0 PPB
7	IE08	007	S-5	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:58:10 PM	1.0000	5.0 PPB
8	IE08	008	S-6	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:08:35 PM	1.0000	7.5 PPB
9	IE08	009	S-7	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:18:59 PM	1.0000	10 PPB
10	IE08	010	ICV	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:29:23 PM	1.0000	3.0 PPB
11	IE08	011	ICB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:39:47 PM	1.0000	
12	IE08	012	LOW LEVEL CV	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:50:27 PM	1.0000	
13	IE08	013	HCE007WB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:00:51 PM	1.0000	
14	IE08	014	HCE007WL	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:11:16 PM	1.0000	
15	IE08	015	HCE007WC	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:21:40 PM	1.0000	
16	IE08	016	E031-01	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:32:04 PM	1.0000	
17	IE08	017	E031-02	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:42:28 PM	1.0000	
18	IE08	018	E031-03	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:52:52 PM	1.0000	
19	IE08	019	E031-01IM	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:03:17 PM	2.0000	DF=2; MS@4PPB
20	IE08	020	E031-01I	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:13:41 PM	2.0000	DF=2
21	IE08	021	E031-02M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:24:05 PM	1.0000	MS @ 1PPB
22	IE08	022	CCV1	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:34:29 PM	1.0000	
23	IE08	023	CCB1	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:44:53 PM	1.0000	
24	IE08	024	E031-03M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:55:17 PM	1.0000	MS @ 1PPB
25	IE08	025	E031-02S	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:05:41 PM	1.0000	MS @ 1PPB
26	IE08	026	E488-01	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:16:56 PM	1.0000	
27	IE08	027	E488-03	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:27:20 PM	1.0000	

FINAL

Chromeleon © Dionex Corporation, Version 6.70 SP2a Build 1871

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2017
Timebase: DX600
#Samples: 30

Created: 5/8/2017 11:24:42 AM by EMAXLABS
Last Update: 5/8/2017 5:41:20 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IE08	028	E488-01A	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:37:45 PM	1.0000	PS @ 1PPB
29	IE08	029	CCV3	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:48:09 PM	1.0000	
30	IE08	030	CCB3	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:58:33 PM	1.0000	

FINAL

Chromeleon © Dionex Corporation, Version 6.70 SP2a Build 1871

SAMPLE PRESERVATION LOG(S)

EMAX LABORATORIES, INC.

pH ADJUSTMENTS/SAMPLE PRESERVATION LOG FOR HEXAVALENT CHROMIUM

SOP ☑ EMAX-218.6 Rev. 6 ☑ EMAX-7199 Rev. 5 9:40 Book #: PHC-015

Matrix: W Start Date: 5/4/17 Time: ~~9:45~~ KG 5/4/17 End Date: 5/4/17 Time: 15:40

Sample Prep ID	Lab Sample ID	Initial pH	Final pH	Notes
01	E029-05	6.91	9.08	0.28 mL added → 40mL ; Cr
02	E029-07	7.66	9.09	0.22 mL added → 40mL ; Cr
03	E030-07	8.02	9.12	0.14mL added → 40mL ; Cr
04	E030-08	7.49	9.07	0.16mL added → 40mL ; Cr
05	E030-09	7.18	9.11	0.28 mL added → 40mL ; Cr
06	E030-10	7.62	9.13	0.12mL added → 40mL ; light Yw
07	E030-11	7.60	9.10	0.12mL added → 40mL ; light Yw
08	E030-12	7.45	9.20	0.12mL added → 40mL ; Cr
09	E031-01 *	9.35	9.35	no adj. needed ; Cr
10	E031-02 *	9.50	9.50	↓
11	E031-03 *	9.38	9.38	↓
12	E465-01	8.33	9.12	0.08 mL added → 40mL ; Cr
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				KG 5/4/17

Standards	ID	pH
Buffer 7	SW1-01-861	7.00
Buffer 10	↓ -815	10.01
Check pH Buffer (8)	↓ -900	8.02
pH meter	F7	

Reagent	Standard ID #
NaOH	SW4-03-29-02
$(NH_4)_2SO_4/NH_4OH$	—
Reagent Water	—

Legend:

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

☐ Samples were received with preservation

* Comments:

Samples E031-01, -02, -03 were received with preservation.

Prepared By: KG

Standard Added By: KG

Checked By:

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 218.6/7199

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

Compound	Ical Mean RT	from	to	Retention Time Window
CHROMIUM VI	**5.05**	4.84	5.27	**0.213**

IC59E08

5-9-17

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

Date: 05-22-2017
EMAX Batch No.: 17E058

ATTN: MARLON CARTIN

ASSET LABS
3151 W. POST ROAD
LAS VEGAS NV 89118

Subject: Laboratory Report
Project: PG&E

Enclosed is the Laboratory report for samples received on 05/09/17.
The data reported relate only to samples listed below :

Sample ID	Control #	Col Date	Matrix	Analysis
MW-54-195-EB-Q217	E058-01	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-54-195-Q217	E058-02	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-54-140-Q217	E058-03	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-54-140-EB-Q217	E058-04	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-54-085-Q217	E058-05	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-54-085-EB-Q217	E058-06	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED METALS BY ICP-MS
MW-56S-Q217	E058-07	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM
MW-56M-Q217	E058-08	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM
MW-56D-Q217	E058-09	05/04/17	WATER	CHROMIUM HEXAVALENT BY IC DISSOLVED CHROMIUM

The results are summarized on the following pages.

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

Sincerely yours,

Caspar J. Pang
Laboratory Director

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

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

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

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

CHAIN-OF-CUSTODY RECORD

17E058

QC Level: Level IV

Subcontractor:

EMAX Laboratories
1835 205th Street
Torrance, CA 90501

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

Field Sampler: SIGNED

08-May-17

	Sample ID	Matrix	Date Collected	Bottle Type	Requested Tests EPA 218.6	EPA 3010A	EPA 6020
1	N024105-001A / MW-54-195-EB-Q217	Groundwater	5/4/2017 7:40:00 AM	8OZP	1		
	N024105-001B / MW-54-195-EB-Q217	Groundwater	5/4/2017 7:40:00 AM	16OZP		1	2
2	N024105-002A / MW-54-195-Q217	Groundwater	5/4/2017 8:42:00 AM	8OZP	1		
	N024105-002B / MW-54-195-Q217	Groundwater	5/4/2017 8:42:00 AM	16OZP		1	2
3	N024105-003A / MW-54-140-Q217	Groundwater	5/4/2017 8:10:00 AM	8OZP	1		
	N024105-003B / MW-54-140-Q217	Groundwater	5/4/2017 8:10:00 AM	16OZP		1	2
4	N024105-004A / MW-54-140-EB-Q217	Groundwater	5/4/2017 8:15:00 AM	8OZP	1		
	N024105-004B / MW-54-140-EB-Q217	Groundwater	5/4/2017 8:15:00 AM	16OZP		1	2
5	N024105-005A / MW-54-085-Q217	Groundwater	5/4/2017 8:50:00 AM	8OZP	1		
	N024105-005B / MW-54-085-Q217	Groundwater	5/4/2017 8:50:00 AM	16OZP		1	2
6	N024105-006A / MW-54-085-EB-Q217	Groundwater	5/4/2017 8:55:00 AM	8OZP	1		
	N024105-006B / MW-54-085-EB-Q217	Groundwater	5/4/2017 8:55:00 AM	16OZP		1	2
7	N024105-007A / MW-56S-Q217	Groundwater	5/4/2017 11:29:00 AM	8OZP	1		
	N024105-007B / MW-56S-Q217	Groundwater	5/4/2017 11:29:00 AM	16OZP		1	1
8	N024105-008A / MW-56M-Q217	Groundwater	5/4/2017 12:04:00 PM	8OZP	1		
	N024105-008B / MW-56M-Q217	Groundwater	5/4/2017 12:04:00 PM	16OZP		1	1
9	N024105-009A / MW-56D-Q217	Groundwater	5/4/2017 11:26:00 AM	8OZP	1		
	N024105-009B / MW-56D-Q217	Groundwater	5/4/2017 11:26:00 AM	16OZP		1	1

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

Please use PO#:N24105A Please email Invoices and Account Receivable Statements to AssetAP@assetlaboratories.com. For questions, call Marlon at (702)-307-2659. Please e-mail results to reports.lv@assetlaboratories.com by: Normal TAT.

Please see attached documet for requested tests.

@ 3.4°c

GSO #: 536032047

	Date/Time		Date/Time
Relinquished by:	5/8/2017 17:00	**Received by:**	
Relinquished by:		**Received by:**	5/9/17 0855

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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

CHAIN OF CUSTODY RECORD

17E058

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD		RTNE		1. Chilled	✓	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Geotracker		RWQCB	✓	2. Headspace		
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	Labspec		CalTrans		3. Container Intact		
Submitted By: Alexis McIntyre	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200	Others	✓	LEVEL III		4. Seal Present		
Title: Geologist 1		Fax:	Specify: RWQCB		LEVEL IV		5. IR number		✓
Signature: Date:	Sampled By: Jalen Mahn	P.O.#	Global ID:		Regulatory		6. Method of Cooling: Ice		
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*				Specify State:		Sample Temp: 2.9°C		
Project Name: PG&E Topock - AZ GMP	Signature: Date: 5/4/17						Courier:		
Project Number: RC000753.0801							Tracking No.:		

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

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH 2 X 250 mL poly	Metals Dissolved (6020AFF) As; HNO3 500 mL poly	Metals Dissolved (6020AFF) Mo; HNO3 500 mL poly	Metals Dissolved (6020AFF) Se; HNO3 500 mL poly	Metals Dissolved (6020AFF) Cr; HNO3 501 mL poly	Metals Dissolved (6020AFF) Mn; HNO3 502 mL poly	Nitrate/Nitrite as Nitrogen (SM4500N03); H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1		MW-54-195-EB-Q217	5/4/2017	0740		X		X			X	X		E	2	P	BN	Send to EMAX
2		MW-54-195-Q217	5/4/2017	0842			X	X			X	X		E	3	P	BN	Send to EMAX
3		MW-54-140-Q217	5/4/2017	0810			X	X			X	X		E	3	P	BN	Send to EMAX
4		MW-54-140-EB-Q217	5/4/2017	0815		X		X			X	X		E	2	P	BN	Send to EMAX
5		MW-54-085-Q217	5/4/2017	0850			X	X			X	X		E	3	P	BN	Send to EMAX
6		MW-54-085-EB-Q217	5/4/2017	0855		X		X			X	X		E	2	P	BN	Send to EMAX
7		MW-56S-Q217	5/4/2017	1129		X					X			E	2	P	BN	Send to EMAX
8		MW-56M-Q217	5/4/2017	1204		X					X			E	2	P	BN	Send to EMAX
9		MW-56D-Q217	5/4/2017	1126		X					X			E	2	P	BN	Send to EMAX
10																		
11																		

Reliquished by (Signature and Printed Name):	Date/Time: 5/4/17	Reliquished by (Signature and Printed Name):	Date/Time: 5/4/17 1609
Reliquished by (Signature and Printed Name):	Date/Time: 5/4/17 1712	Reliquished by (Signature and Printed Name):	Date/Time: 5/4/17 1725
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

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

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

Special Instruction:

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

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

White=Laboratory Copy
Yellow=Customer's Copy

SAMPLE RECEIPT FORM 1

Type of Delivery	Airbill / Tracking Number	ECN 17E058
☐ Fedex ☐ UPS ☑ GSO ☐ Others	536032047	Recipient Nevy Custodio
☐ EMAX Courier ☐ Client Delivery		Date 5/9/17 Time 0855

COC INSPECTION

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

Note: Information checked above found on 2nd page of COC

PACKAGING INSPECTION

Container	☑ Cooler	☐ Box	☐ Other		
Condition	☑ Custody Seal	☑ Intact	☐ Damaged		
Packaging	☑ Bubble Pack	☐ Styrofoam	☐ Popcorn	☑ Sufficient	☐ _____
Temperatures (Cool, ≤6 °C but not frozen)	☑ Cooler 1 3.4 °C	☐ Cooler 2_____ °C	☐ Cooler 3_____ °C	☐ Cooler 4_____ °C	☐ Cooler 5_____ °C
	☐ Cooler 6_____ °C	☐ Cooler 7_____ °C	☐ Cooler 8_____ °C	☐ Cooler 9_____ °C	☐ Cooler 10_____ °C
Thermometer:	A - S/N 130528505	B - S/N 150555522	C - S/N 140252067	(D) - S/N 150555630	FM 11/7/16

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

Note: _____

DISCREPANCIES

LabSampleID	LabSampleContainerID	Code	ClientSample Label ID / Information	Corrective Action
1,3	1,7	D10	cs 5/9/17	R1
~~1-9~~		~~D22~~		
			cs 5/9/17	

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

NOTES/OBSERVATIONS: ~~* 1st page of COC Requests EPA 3010A, no samples with this analysis received.~~ cs 5/9/17 COC indicates all samples are filtered, label reads "not filtered" on some. Refer to SRF2

☐ **Continue to next page.**

LEGEND:

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

Code	Description-Sample Management
D13	Out of Holding Time
D14	Bubble is >6mm
D15	No trip blank in cooler
D16	Preservation not indicated in _____
D17	Preservation mismatch COC vs label
D18	Insufficient chemical preservative
D19	Insufficient Sample
D20	No filtration info for dissolved analysis
D21	No sample for moisture determination
~~D22~~	~~* see note~~ cs 5/9/17
D23	
D24	

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

REVIEWS:

Sample Labeling _____ Date 5/9/17 5/9/17

SRF _____ Date 5/9/17

PM _____ Date 5/9/17

GSO
GOLDEN STATE OVERNIGHT

800-322-5555 www.gso.com

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

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

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

Delivery Instructions:

Signature Type: REQUIRED

Tracking #: 536032047

CPS



LAX **F**

TORRANCE

D90501A



66507891

Print Date: 5/8/2017 12:32 PM

LABEL INSTRUCTIONS:

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

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

REPORTING CONVENTIONS

DATA QUALIFIERS:

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

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

ACRONYMS AND ABBREVIATIONS:

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

DATES

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

LABORATORY REPORT FOR

ASSET LABS

PG&E

METHOD SW6020A
TOTAL AND DISSOLVED CHROMIUM BY ICP-MS

SDG#: 17E058

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E

SDG : 17E058

METHOD SW6020A
TOTAL AND DISSOLVED CHROMIUM BY ICP-MS

A total of nine (9) water samples were received on 05/09/17 to be analyzed for Total and Dissolved Chromium by ICP-MS in accordance with Method SW6020A and project specific requirements.

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

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

Method Blank
Method blank was prepared and analyzed at the frequency required by the project. For this SDG, one (1) method blank was analyzed. IME013WB - result was compliant to project requirement. Refer to sample result summary form for details.

Lab Control Sample
Lab control sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of LCS/LCD was analyzed. IME013WL/IME013WC were within LCS limits. Refer to LCS summary form for details.

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

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

LAB CHRONICLE
DISSOLVED METALS BY ICP-MS

Client : ASSET LABS
Project : PG&E

SDG NO. : 17E058
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Prep. Data FN	Batch	Notes
MBLK1W	IME013WB	1.00	NA	05/18/1718:35	05/16/1711:50	F6E01018	F6E01016	IME013W	Method Blank
LCS1W	IME013WL	1.00	NA	05/18/1718:40	05/16/1711:50	F6E01019	F6E01016	IME013W	Lab Control Sample (LCS)
LCD1W	IME013WC	1.00	NA	05/18/1718:44	05/16/1711:50	F6E01020	F6E01016	IME013W	LCS Duplicate
MW-54-195-EB-Q217	E058-01	1.00	NA	05/18/1719:15	05/16/1711:50	F6E01027	F6E01024	IME013W	Field Sample
MW-54-140-EB-Q217	E058-04	1.00	NA	05/18/1719:20	05/16/1711:50	F6E01028	F6E01024	IME013W	Field Sample
MW-54-085-EB-Q217	E058-06	1.00	NA	05/18/1719:25	05/16/1711:50	F6E01029	F6E01024	IME013W	Field Sample
MW-54-195-Q217	E058-02	1.00	NA	05/18/1719:47	05/16/1711:50	F6E01034	F6E01032	IME013W	Field Sample
MW-54-140-Q217	E058-03	1.00	NA	05/18/1719:52	05/16/1711:50	F6E01035	F6E01032	IME013W	Field Sample
MW-54-085-Q217	E058-05	1.00	NA	05/18/1719:56	05/16/1711:50	F6E01036	F6E01032	IME013W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 07:40
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MW-54-195-EB-Q217	Date Analyzed:	05/18/17 19:15
Lab Samp ID:	E058-01	Dilution Factor:	1
Lab File ID:	F6E01027	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01024	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	0.200	0.100
Chromium	ND	1.00	0.200
Manganese	ND	10.0	0.200

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

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

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 08:42
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID	: MW-54-195-Q217	Date Analyzed:	05/18/17 19:47
Lab Samp ID	: E058-02	Dilution Factor:	1
Lab File ID	: F6E01034	Matrix:	WATER
Ext Btch ID	: IME013W	% Moisture:	NA
Calib. Ref.	: F6E01032	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	0.94	0.200	0.100
Chromium	ND	1.00	0.200
Manganese	345	10.0	0.200

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

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

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 08:10
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID	: MW-54-140-Q217	Date Analyzed:	05/18/17 19:52
Lab Samp ID	: E058-03	Dilution Factor:	1
Lab File ID	: F6E01035	Matrix:	WATER
Ext Btch ID	: IME013W	% Moisture:	NA
Calib. Ref.	: F6E01032	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	2.9	0.200	0.100
Chromium	ND	1.00	0.200
Manganese	97.1	10.0	0.200

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

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

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 08:15
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MW-54-140-EB-Q217	Date Analyzed:	05/18/17 19:20
Lab Samp ID:	E058-04	Dilution Factor:	1
Lab File ID:	F6E01028	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01024	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	0.200	0.100
Chromium	ND	1.00	0.200
Manganese	ND	10.0	0.200

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

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

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 08:50
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MW-54-085-Q217	Date Analyzed:	05/18/17 19:56
Lab Samp ID:	E058-05	Dilution Factor:	1
Lab File ID:	F6E01036	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01032	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	4.0	0.200	0.100
Chromium	ND	1.00	0.200
Manganese	517	10.0	0.200

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

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

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 08:55
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MW-54-085-EB-Q217	Date Analyzed:	05/18/17 19:25
Lab Samp ID:	E058-06	Dilution Factor:	1
Lab File ID:	F6E01029	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01024	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	0.200	0.100
Chromium	ND	1.00	0.200
Manganese	ND	10.0	0.200

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

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

METHOD SW6020A
DISSOLVED METALS BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E	Date Received:	NA
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MBLK1W	Date Analyzed:	05/18/17 18:35
Lab Samp ID:	IME013WB	Dilution Factor:	1
Lab File ID:	F6E01018	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01016	Instrument ID:	F6

PARAMETERS	Result (ug/L)	RL (ug/L)	MDL (ug/L)
Arsenic	ND	0.200	0.100
Chromium	ND	1.00	0.200
Manganese	ND	10.0	0.200

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

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IME013WB	IME013WL	IME013WC
LAB FILE ID	: F6E01018	F6E01019	F6E01020
DATE PREPARED	: 05/16/17 11:50	05/16/17 11:50	05/16/17 11:50
DATE ANALYZED	: 05/18/17 18:35	05/18/17 18:40	05/18/17 18:44
PREP BATCH	: IME013W	IME013W	IME013W
CALIBRATION REF	: F6E01016	F6E01016	F6E01016

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Arsenic	ND	30	28.8	96	30	28.6	95	1	85-115	20
Chromium	ND	30	30.2	101	30	29.4	98	3	85-115	20
Manganese	ND	30	29.9	100	30	29.7	99	1	85-115	20

LAB CHRONICLE
DISSOLVED CHROMIUM BY ICP-MS

Client : ASSET LABS
Project : PG&E

SDG NO. : 17E058
Instrument ID : T-IF6

WATER

Client Sample ID	Laboratory Sample ID	Dilution Factor	% Moist	Analysis DateTime	Extraction DateTime	Sample Data FN	Calibration Prep. Data FN	Batch	Notes
MBLK1W	IME013WB	1.00	NA	05/18/1718:35	05/16/1711:50	F6E01018	F6E01016	IME013W	Method Blank
LCS1W	IME013WL	1.00	NA	05/18/1718:40	05/16/1711:50	F6E01019	F6E01016	IME013W	Lab Control Sample (LCS)
LCD1W	IME013WC	1.00	NA	05/18/1718:44	05/16/1711:50	F6E01020	F6E01016	IME013W	LCS Duplicate
MW-56S-Q217	E058-07	1.00	NA	05/18/1720:01	05/16/1711:50	F6E01037	F6E01032	IME013W	Field Sample
MW-56M-Q217	E058-08	1.00	NA	05/18/1720:06	05/16/1711:50	F6E01038	F6E01032	IME013W	Field Sample
MW-56D-Q217	E058-09	1.00	NA	05/18/1720:10	05/16/1711:50	F6E01039	F6E01032	IME013W	Field Sample

FN - Filename
% Moist - Percent Moisture

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 11:29
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MW-56S-Q217	Date Analyzed:	05/18/17 20:01
Lab Samp ID:	E058-07	Dilution Factor:	1
Lab File ID:	F6E01037	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01032	Instrument ID:	F6

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

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

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

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 12:04
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MW-56M-Q217	Date Analyzed:	05/18/17 20:06
Lab Samp ID:	E058-08	Dilution Factor:	1
Lab File ID:	F6E01038	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01032	Instrument ID:	F6

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

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

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

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	05/04/17 11:26
Project	: PG&E	Date Received:	05/09/17
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MW-56D-Q217	Date Analyzed:	05/18/17 20:10
Lab Samp ID:	E058-09	Dilution Factor:	1
Lab File ID:	F6E01039	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01032	Instrument ID:	F6

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

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

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

METHOD SW6020A
DISSOLVED CHROMIUM BY ICP-MS

Client	: ASSET LABS	Date Collected:	NA
Project	: PG&E	Date Received:	NA
SDG NO.	: 17E058	Date Extracted:	05/16/17 11:50
Sample ID:	MBLK1W	Date Analyzed:	05/18/17 18:35
Lab Samp ID:	IME013WB	Dilution Factor:	1
Lab File ID:	F6E01018	Matrix:	WATER
Ext Btch ID:	IME013W	% Moisture:	NA
Calib. Ref.:	F6E01016	Instrument ID:	F6

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

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

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

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : SW6020A

MATRIX	: WATER		% MOISTURE:NA
DILUTION FACTOR	: 1.00	1.00	1.00
SAMPLE ID	: MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID	: IME013WB	IME013WL	IME013WC
LAB FILE ID	: F6E01018	F6E01019	F6E01020
DATE PREPARED	: 05/16/17 11:50	05/16/17 11:50	05/16/17 11:50
DATE ANALYZED	: 05/18/17 18:35	05/18/17 18:40	05/18/17 18:44
PREP BATCH	: IME013W	IME013W	IME013W
CALIBRATION REF	: F6E01016	F6E01016	F6E01016

ACCESSION:

PARAMETERS	MBResult (ug/L)	SpikeAmt (ug/L)	LCSResult (ug/L)	LCSRec (%)	SpikeAmt (ug/L)	LCDResult (ug/L)	LCDRec (%)	RPD (%)	QCLimit (%)	MaxRPD (%)
Chromium	ND	30	30.2	101	30	29.4	98	3	85-115	20

ICP-MS QC CHECK TABLE

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

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
ICP-MS

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

Start Date: 5/18/17 17:28

End Date: 5/18/17 20:~~49~~44 5/19/17

Comments:

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

Filter Lot #: NA

Book #:	AF6-018
Instrument No.:	F6
Analytical Batch:	IFLE01
Analytical Sequence:	FLE01
Method File:	EMLGOOR2
Micropipette ID:	☑ 142781004
Micropipette ID:	☑ ICP-06
Micropipette ID:	☑ 339362028
Micropipette ID:	☑ GFAA-07
Micropipette ID:	☐ 339342032
Micropipette ID:	☐ 542780515
Micropipette ID:	☐ 542761827
Micropipette ID:	☐

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

STANDARDS ID		STANDARDS ID	
S0	SMLB011.02.01	MRL1 (1)	SMLB011.03.04
S1	↓ .02.04	MRL2 (0.5)	↓ .03.05
S2	↓ .02.05	MRL3 (0.5)	↓ .04.01
S3	↓ .03.01	MRL4	NA
S4	↓ .03.02	MRL5	↓
S5	NA	MRL6	↓
S6	↓	Internal Standard	SMLB10.50.06
S7	↓	Post-Spike 1	SMLA.007.04.06
ICV	SMLB011.01.01	Post-Spike 2	↓ 04.07
CCV	↓ 03.03	Post-Spike 3	NA
ICSA	↓ 06.06	Post-Spike 4	↓
ICSAB	↓ 06.07		
6020 TUNE SOLN.	SMLB10.44.04		
200.8 TUNE SOLN.	↓ 44.05		

Analyzed By: [signature]

Date: 5/18/17

INITIAL CALIBRATION VERIFICATION SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17E058
Method : METHOD SW6020A
Sequence : IF6E01
InstrumentID: F6

		ICV				ICSA			ICSAB		
Lab Samp ID :		ICV				ICSA			ICSAB		
QC Limit :		%R:90-110/RSD:<5				%R:80-120/<LOD			%R:80-120		
Lab File ID :		F6E01009				F6E01013			F6E01014		
DateAnalyed :		05/18/1717:55				05/18/1718:12			05/18/1718:17		
Parameter		Result	ICV EV	RSD	%Recovery	Result	ICSA EV	%Rec/LOD	Result	ICSAB EV	%Recovery
Lithium		29.53	30	0.38	98	.3431	0	<2.0	20.92	20	105
Beryllium		29.15	30	1.44	97	.01297	0	<1.0	20.97	20	105
Boron		26.87	30	2.34	90	.6373	0	<10	19.58	20	98
Sodium		28530	30000	0.47	95	99210	100000	99	96560	100000	97
Magnesium		29170	30000	0.96	97	96660	100000	97	93470	100000	93
Aluminum		29010	30000	1.02	97	94270	100000	94	91980	100000	92
Silicon		2948	3000	0.99	98	6.615	0	<50	201.4	200	101
Phosphorus		282.1	300	0.96	94	96860	100000	97	93800	100000	94
Potassium		30050	30000	1.18	100	100800	100000	101	103200	100000	103
Calcium		28710	30000	0.97	96	100200	100000	100	98590	100000	99
Titanium		301.5	300	0.66	100	2136	2000	107	2126	2000	106
Vanadium		286.5	300	1.22	96	-.01236	0	<1.0	20.02	20	100
Chromium	T	279.2	300	1.66	93	1.234	0	>0.2	20.48	20	102
Manganese	T	1801	2000	1.48	90	.1811	0	<0.2	19.77	20	99
Iron		28640	30000	0.83	95	97500	100000	98	97780	100000	98
Cobalt		260.1	300	0.85	87*	.2198	0	<1.0	18.24	20	91
Nickel		278.2	300	1.21	93	.1843	0	<1.0	19.22	20	96
Copper		262.5	300	1.22	88*	.6322	0	<1.0	18.41	20	92
Zinc		291.5	300	1.66	97	1.841	0	<20	20.25	20	101
Arsenic	T	290.2	300	0.52	97	.1865	0	>0.1	20.51	20	103
Selenium		292.9	300	0.83	98	.0811	0	<1.0	21.93	20	110
Strontium		281.9	300	1.71	94	.6183	0	<2.0	19.43	20	97
Zirconium		20.49	30	2.43	68*	.2546	0	<5.0	5.588	20	28*
Molybdenum		309.9	300	1.14	103	2132	2000	107	2149	2000	107
Silver		28.13	30	0.82	94	.02247	0	<1.0	19.29	20	96
Cadmium		295.5	300	0.60	98	.2196	0	<1.0	19.97	20	100
Tin		302.8	300	0.41	101	.04191	0	<1.0	20.42	20	102
Antimony		61.66	60	0.76	103	.05455	0	<1.0	20.57	20	103
Barium		303.7	300	1.71	101	.1051	0	<1.0	20.72	20	104
Tungsten		28.73	30	0.72	96	.1204	0	<2.0	18.58	20	93
Thallium		281.5	300	0.89	94	.007655	0	<1.0	19.03	20	95
Lead		283.3	300	1.43	94	.2065	0	<1.0	19.44	20	97
Uranium		287.6	300	1.57	96	.006068	0	<1.0	19.31	20	97

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

CONTINUING CALIBRATION VERIFICATION SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17E058
Method : METHOD SW6020A
Sequence : IF6E01
Instrument ID: F6

CCV SampleID			CCV1			CCV2			CCV3			CCV4		
CCV DataFileID			F6E01016			F6E01024			F6E01032			F6E01042		
CCV DateTime			05/18/17 18:26			05/18/17 19:02			05/18/17 19:39			05/18/17 20:40		
PARAMETER		CCV EV	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD	RESULT	%REC	RSD
Lithium		25	25.9	103	0.14	26.0	104	0.83	26.1	104	2.44	26.0	104	0.05
Beryllium		25	26.2	105	1.21	25.4	101	0.36	26.6	106	1.94	26.6	106	0.40
Boron		50	50.4	101	1.07	51.7	103	1.56	50.5	101	0.85	51.6	103	1.19
Sodium		25000	23800	95	0.89	24300	97	0.37	24000	96	1.11	23900	96	1.91
Magnesium		25000	24500	98	0.60	24800	99	1.31	23600	94	1.31	22700	91	0.60
Aluminum		25000	23900	96	2.63	24400	98	1.95	23600	95	0.91	22900	92	0.54
Silicon		2500	2420	97	1.03	2600	104	0.57	2510	100	1.47	2620	105	0.95
Phosphorus		250	231	92	1.24	244	97	0.90	234	94	0.94	231	92	0.81
Potassium		25000	25300	101	0.78	25600	102	0.27	25700	103	0.60	26200	105	0.44
Calcium		25000	24300	97	0.15	24700	99	0.58	24900	99	1.12	25000	100	1.30
Titanium		250	252	101	0.26	259	103	1.44	250	100	1.31	250	100	0.51
Vanadium		250	253	101	0.92	250	100	1.54	252	101	0.75	251	100	0.37
Chromium	T	250	243	97	1.97	244	98	1.10	243	97	1.01	238	95	0.41
Manganese	T	1500	1470	98	1.44	1460	97	0.66	1450	97	1.60	1480	99	0.11
Iron		25000	24800	99	1.87	24500	98	0.94	25000	100	0.83	25300	101	1.43
Cobalt		250	231	92	2.02	231	92	0.12	228	91	0.89	236	94	0.96
Nickel		250	244	98	1.12	245	98	1.35	243	97	1.56	236	94	1.06
Copper		250	232	93	1.33	227	91	1.81	230	92	0.72	225	90	1.19
Zinc		250	251	100	1.55	248	99	0.48	249	99	0.79	243	97	0.19
Arsenic	T	250	251	101	0.42	252	101	0.41	251	100	0.64	247	99	0.22
Selenium		250	253	101	0.22	251	100	0.50	253	101	0.83	248	99	0.32
Strontium		250	250	100	1.76	245	98	0.83	253	101	0.87	257	103	0.67
Zirconium		25	17.0	68*	2.81	16.7	67*	0.78	17.1	68*	0.61	17.4	69*	0.46
Molybdenum		250	261	104	2.55	268	107	0.46	263	105	0.89	258	103	0.87
Silver		25	25.3	101	0.55	25.3	101	0.69	24.7	99	0.80	24.5	98	0.39
Cadmium		250	255	102	0.12	251	100	0.31	252	101	0.31	251	100	0.89
Tin		250	257	103	1.65	259	104	0.45	258	103	1.14	261	104	1.05
Antimony		50	51.2	102	1.52	51.6	103	0.43	51.9	104	1.28	52.1	104	0.80
Barium		500	515	103	2.25	520	104	0.79	516	103	0.79	537	107	0.38
Tungsten		25	24.8	99	1.51	24.4	98	0.91	24.5	98	0.71	24.2	97	0.66
Thallium		250	252	101	1.46	244	98	0.35	244	97	1.50	244	97	0.32
Lead		250	252	101	0.20	242	97	0.50	244	98	1.44	241	97	0.82
Uranium		250	246	98	0.58	239	96	0.84	241	96	0.37	240	96	0.42

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

CONTINUING CALIBRATION BLANK SUMMARY FORM

Client : ASSET LABS
Project : PG&E
SDG NO. : 17E058
Method : SW6020A
Sequence : IF6E01
Instrument ID: F6

CB SampleID	: ICB	CCB1	CCB2	CCB3	CCB4
CB DataFileID	: F6E01010	F6E01017	F6E01025	F6E01033	F6E01043
CB DateTime	: 05/18/1717:59	05/18/1718:30	05/18/1719:06	05/18/1719:43	05/18/1720:44

PARAMETER		LOD	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >	RESULT	< LOD >
Lithium		2.0	0.1	<2.0	0.10	<2.0	0.05	<2.0	0.03	<2.0	0.3	<2.0
Beryllium		1.0	0.00007	<1.0	0.001	<1.0	0.002	<1.0	0.0008	<1.0	0.003	<1.0
Boron		10	0.1	<10	0.2	<10	2	<10	0.4	<10	2	<10
Sodium		100	4	<100	8	<100	50	<100	20	<100	100	>100
Magnesium		100	0.7	<100	0.8	<100	0.6	<100	0.8	<100	2	<100
Aluminum		100	0.5	<100	0.5	<100	0.4	<100	0.5	<100	0.5	<100
Silicon		50	2	<50	1	<50	1	<50	1	<50	0.9	<50
Phosphorus		50	0.2	<50	1	<50	1	<50	0.9	<50	0.6	<50
Potassium		100	7	<100	5	<100	6	<100	2	<100	10	<100
Calcium		100	2	<100	1	<100	0.8	<100	2	<100	2	<100
Titanium		2.0	0.03	<2.0	0.03	<2.0	0.02	<2.0	0.04	<2.0	0.06	<2.0
Vanadium		1.0	0.01	<1.0	0.03	<1.0	0.04	<1.0	0.07	<1.0	0.02	<1.0
Chromium	T	0.2	0.03	<0.2	0.03	<0.2	0.07	<0.2	0.07	<0.2	0.1	<0.2
Manganese	T	0.2	0.07	<0.2	0.03	<0.2	0.02	<0.2	0.01	<0.2	0.003	<0.2
Iron		100	4	<100	4	<100	3	<100	4	<100	4	<100
Cobalt		1.0	0.002	<1.0	0.0002	<1.0	0.00003	<1.0	0.0007	<1.0	0.0001	<1.0
Nickel		1.0	0.007	<1.0	0.004	<1.0	0.0003	<1.0	0.007	<1.0	0.04	<1.0
Copper		1.0	0.07	<1.0	0.03	<1.0	0.10	<1.0	0.1	<1.0	0.2	<1.0
Zinc		20	0.010	<20	0.008	<20	0.008	<20	0.006	<20	0.01	<20
Arsenic	T	0.1	0.06	<0.1	0.03	<0.1	0.04	<0.1	0.02	<0.1	0.004	<0.1
Selenium		1.0	0.07	<1.0	0.03	<1.0	0.03	<1.0	0.04	<1.0	0.04	<1.0
Strontium		2.0	0.005	<2.0	0.004	<2.0	0.006	<2.0	0.003	<2.0	0.006	<2.0
Zirconium		5.0	0.04	<5.0	0.05	<5.0	0.05	<5.0	0.05	<5.0	0.05	<5.0
Molybdenum		2.0	0.1	<2.0	0.1	<2.0	0.07	<2.0	0.2	<2.0	0.2	<2.0
Silver		1.0	0.004	<1.0	0.0008	<1.0	0.00009	<1.0	0.00000	<1.0	0.0003	<1.0
Cadmium		1.0	0.003	<1.0	0.002	<1.0	0.00009	<1.0	0.0009	<1.0	0.005	<1.0
Tin		1.0	0.1	<1.0	0.07	<1.0	0.06	<1.0	0.06	<1.0	0.05	<1.0
Antimony		1.0	0.01	<1.0	0.02	<1.0	0.03	<1.0	0.02	<1.0	0.008	<1.0
Barium		1.0	0.004	<1.0	0.01	<1.0	0.008	<1.0	0.01	<1.0	0.010	<1.0
Tungsten		2.0	0.02	<2.0	0.01	<2.0	0.009	<2.0	0.008	<2.0	0.008	<2.0
Thallium		1.0	0.03	<1.0	0.01	<1.0	0.01	<1.0	0.01	<1.0	0.01	<1.0
Lead		1.0	0.04	<1.0	0.005	<1.0	0.0009	<1.0	0.002	<1.0	0.0003	<1.0
Uranium		1.0	0.03	<1.0	0.02	<1.0	0.02	<1.0	0.02	<1.0	0.02	<1.0

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

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
1		Keyword		TUNBEG	Start of TUNE						
2	C:\ICPCHEM\1\METHODS\TN6020_C.M	Tun6	1301	F6E01001	6020tunchk		1.000				
3	C:\ICPCHEM\1\METHODS\TN200_8C.M	Tun2	1302	F6E01002	200.8tunchk		1.000				
4		Keyword		TUNEND	End of TUNE						
5		Keyword		CALBEG	Start of CALIB						
6	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1101	F6E01003	BLNK		Level 1				
7	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalBlk	1201	F6E01004	S0		Level 1				
8	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1104	F6E01005	S1 0.5		Level 2				
9	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1105	F6E01006	S2 50		Level 3				
10	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1106	F6E01007	S3 250		Level 4				
11	C:\ICPCHEM\1\METHODS\EM6020R2.M	CalStd	1107	F6E01008	S4 500		Level 5				
12	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICV1	1204	F6E01009	ICV		1.000				
13	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICB	1201	F6E01010	ICB		1.000				
14	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1305	F6E01011	MRLE1801	1/100/10 ppb	1.000				
15	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1306	F6E01012	MRLE1802	0.5/50/4 ppb	1.000				
16	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6E01013	ICSA		1.000				
17	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6E01014	ICSAB		1.000				
18	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1207	F6E01015	MRLD1803	500 ppb CAT	1.000				
19	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E01016	CCV1		1.000				
20	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E01017	CCB1		1.000				
21		Keyword		CALEND	End of CALIB						
22		Keyword		SMPLBEG	Start of SMPL						
23	C:\ICPCHEM\1\METHODS\EM6020R2.M	MBW	2101	F6E01018	IME013WB		1.000				
24	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2102	F6E01019	IME013WL		1.000				
25	C:\ICPCHEM\1\METHODS\EM6020R2.M	LCS	2103	F6E01020	IME013WC		1.000				
26	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2104	F6E01021	E031-01		1.000				
27	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6E01022	E031-02		1.000				
28	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2106	F6E01023	E031-03		1.000				
29	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E01024	CCV2		1.000				
30	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E01025	CCB2		1.000				
31	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2105	F6E01026	E031-02N		1.000				
32	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2107	F6E01027	E058-01		1.000				
33	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2108	F6E01028	E058-04		1.000				
34	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2109	F6E01029	E058-06		1.000				
35	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6E01030	ICSA2		1.000				
36	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6E01031	ICSAB2		1.000				
37	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E01032	CCV3		1.000				
38	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E01033	CCB3		1.000				
39	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2110	F6E01034	E058-02		1.000				
40	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2111	F6E01035	E058-03		1.000				
41	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2112	F6E01036	E058-05		1.000				
42	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2201	F6E01037	E058-07		1.000				

	Method	Type	Vial	Data File	Sample	Comment	Dil/Lvl	ISTD Conc	Action on Failure	Skip	Result
43	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2202	F6E01038	E058-08		1.000				
44	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	2203	F6E01039	E058-09		1.000				
45	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-A	1303	F6E01040	ICSA3		1.000				
46	C:\ICPCHEM\1\METHODS\EM6020R2.M	ICS-AB	1304	F6E01041	ICSAB3		1.000				
47	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCV	1206	F6E01042	CCV4		1.000				
48	C:\ICPCHEM\1\METHODS\EM6020R2.M	CCB	1201	F6E01043	CCB4		1.000				
49	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1101	F6E01044	BLANK		1.000				
50	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1101	F6E01045	BLANK		1.000				
51	C:\ICPCHEM\1\METHODS\EM6020R2.M	Sample	1101	F6E01046	BLANK		1.000				
52		Keyword		StandBy							
53		Keyword		SMPLEND	End of SMPL						
54		Keyword		End	End of Sequence						
55		Keyword		BLKBEG	Start of BLANK						
56		Keyword		BLKEND	End of BLANK						
57		Keyword		ERRBEG	Start of ERRTERM						
58		Keyword		ERREND	End of ERRTERM						

Last Calib: May 18, 2017 05:53 pm
Calibration Type: External Calibration Method
Calibration Title:
Weighting Method: 1/(SD*SD)
Mass Interpolation Fit for VIS: Point to Point
Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Multi Tune: #1 h2.u
#2 he.u
#3 norm.u

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

	Data File	Sample Name	Date Acquired
1	c:\data\if62017\e\if6e01.b\f6e01004.d\f6e01004.d#	S0	May 18 2017 05:33 pm
2	c:\data\if62017\e\if6e01.b\f6e01005.d\f6e01005.d#	S1 0.5	May 18 2017 05:37 pm
3	c:\data\if62017\e\if6e01.b\f6e01006.d\f6e01006.d#	S2 50	May 18 2017 05:42 pm
4	c:\data\if62017\e\if6e01.b\f6e01007.d\f6e01007.d#	S3 250	May 18 2017 05:46 pm
5	c:\data\if62017\e\if6e01.b\f6e01008.d\f6e01008.d#	S4 500	May 18 2017 05:51 pm
6	---		
7	---		
8	---		
9	---		
10	---		
11	---		
12	---		
13	---		
14	---		
15	---		
16	---		
17	---		
18	---		
19	---		
20	---		

Calibration - C:\DATA\IF62017\E\IF6E01.B\EM6020R2.C

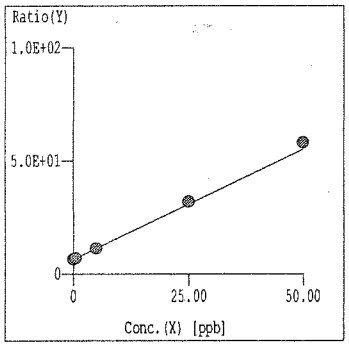
=== ISTD Table ===

Fix ISTD Conc: ON

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

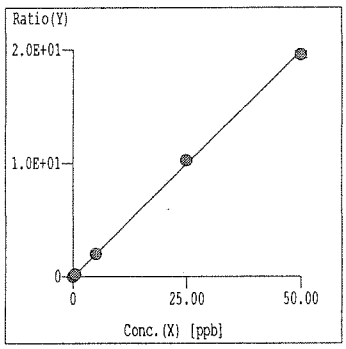
=== Graph Detail ===

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



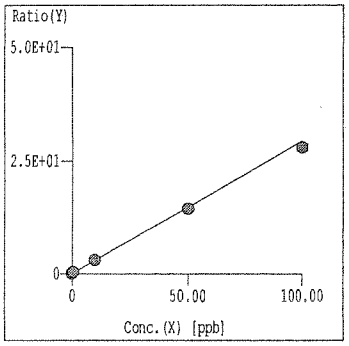
Curve Fit: Y=aX+b
r = 1.0000
Y = 9.726E-001*X +6.448E+000
X = 1.028E+000*Y -6.629E+000
DL = 8.139E-02 ppb
BEC = 6.629 ppb

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



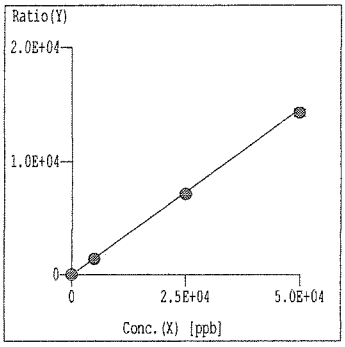
Curve Fit: Y=aX+b
r = 0.9997
Y = 3.974E-001*X +8.278E-004
X = 2.517E+000*Y -2.083E-003
DL = 1.019E-03 ppb
BEC = 2.083E-03 ppb

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



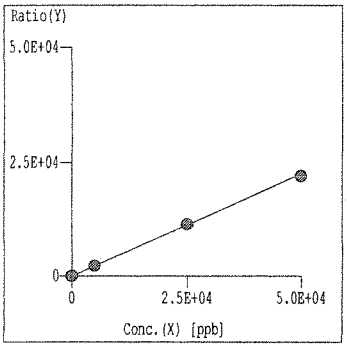
Curve Fit: Y=aX+b
r = 0.9999
Y = 2.937E-001*X +1.120E-001
X = 3.404E+000*Y -3.812E-001
DL = 3.985E-02 ppb
BEC = 3.812E-01 ppb

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



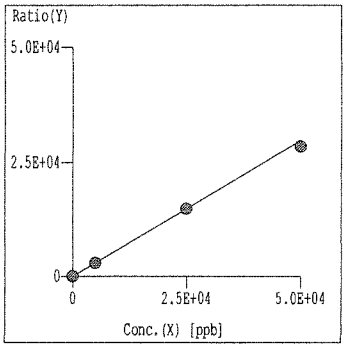
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.919E-001*X +2.868E+000
X = 3.426E+000*Y -9.825E+000
DL = 2.632E-01 ppb
BEC = 9.825 ppb

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



Curve Fit: Y=aX+b
r = 0.9998
Y = 4.515E-001*X +6.432E-002
X = 2.215E+000*Y -1.425E-001
DL = 2.078E-02 ppb
BEC = 1.425E-01 ppb

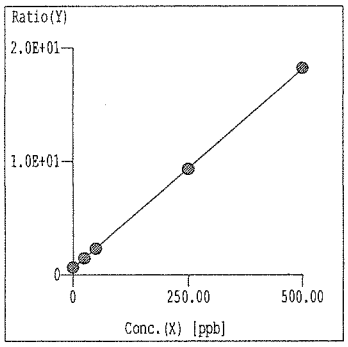
Step Mass Element (3) 27 Al | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9997
Y = 5.957E-001*X +8.332E-002
X = 1.679E+000*Y -1.399E-001
DL = 2.414E-03 ppb
BEC = 1.399E-01 ppb

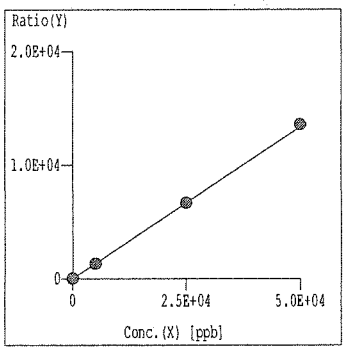
=== Graph Detail ===

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



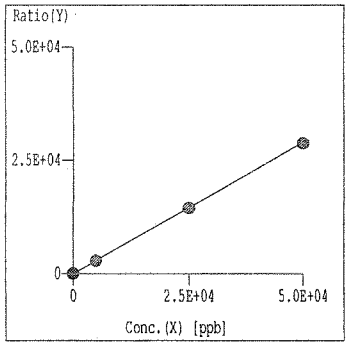
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.507E-002*X +6.077E-001
X = 2.852E+001*Y -1.733E+001
DL = 1.610 ppb
BEC = 17.33 ppb

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



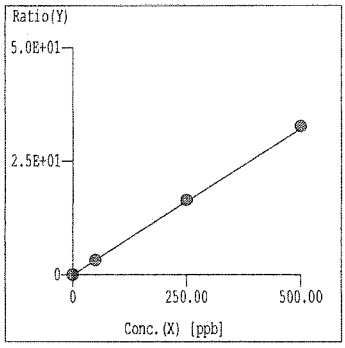
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.662E-001*X +2.673E+001
X = 3.757E+000*Y -1.004E+002
DL = 2.246 ppb
BEC = 100.4 ppb

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



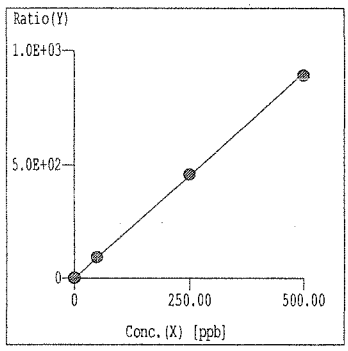
Curve Fit: Y=aX+b
r = 1.0000
Y = 5.800E-001*X +1.766E+000
X = 1.724E+000*Y -3.044E+000
DL = 1.412E-02 ppb
BEC = 3.044 ppb

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



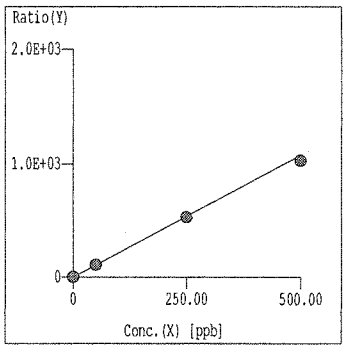
Curve Fit: Y=aX+b
r = 1.0000
Y = 6.417E-002*X +2.584E-003
X = 1.558E+001*Y -4.027E-002
DL = 1.378E-02 ppb
BEC = 4.027E-02 ppb

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



Curve Fit: Y=aX+b
r = 0.9999
Y = 1.806E+000*X +8.311E-001
X = 5.537E-001*Y -4.602E-001
DL = 1.955E-02 ppb
BEC = 4.602E-01 ppb

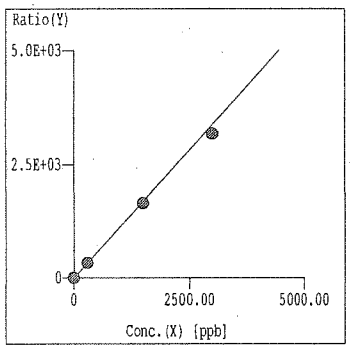
Step Mass Element (2) 52 Cr | ISTD 45 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 2.150E+000*X +5.613E-001
X = 4.652E-001*Y -2.611E-001
DL = 6.534E-03 ppb
BEC = 2.611E-01 ppb

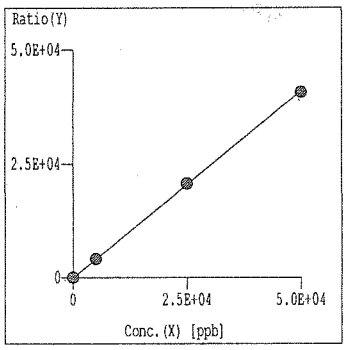
=== Graph Detail ===

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



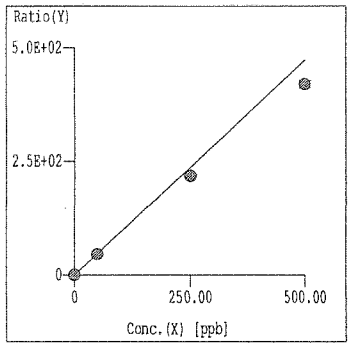
Curve Fit: Y=aX+b
r = 0.9998
Y = 1.126E+000*X +8.236E-002
X = 8.883E-001*Y -7.316E-002
DL = 4.897E-03 ppb
BEC = 7.316E-02 ppb

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



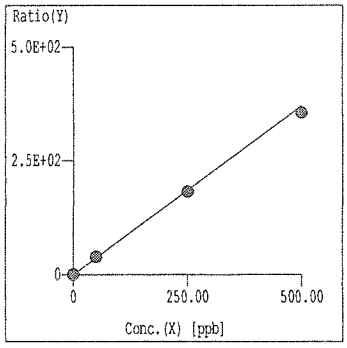
Curve Fit: Y=aX+b
r = 1.0000
Y = 8.183E-001*X +2.036E-001
X = 1.222E+000*Y -2.488E-001
DL = 2.183E-02 ppb
BEC = 2.488E-01 ppb

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



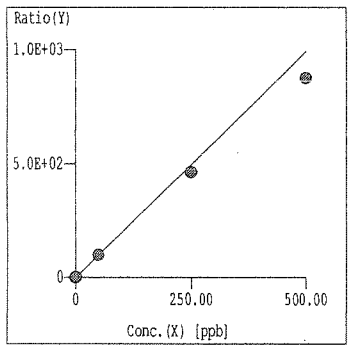
Curve Fit: Y=aX+b
r = 0.9998
Y = 9.455E-001*X +5.624E-003
X = 1.058E+000*Y -5.949E-003
DL = 2.456E-03 ppb
BEC = 5.949E-03 ppb

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



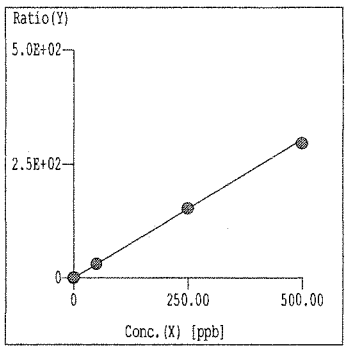
Curve Fit: Y=aX+b
r = 0.9999
Y = 7.405E-001*X +1.752E-002
X = 1.350E+000*Y -2.366E-002
DL = 5.004E-03 ppb
BEC = 2.366E-02 ppb

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



Curve Fit: Y=aX+b
r = 0.9996
Y = 1.982E+000*X +8.271E-002
X = 5.045E-001*Y -4.173E-002
DL = 2.714E-03 ppb
BEC = 4.173E-02 ppb

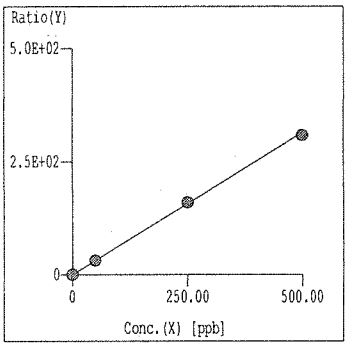
Step Mass Element (3) 66 Zn | ISTD 72 | Unit ppb



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.091E-001*X +9.836E-002
X = 1.642E+000*Y -1.615E-001
DL = 2.145E-02 ppb
BEC = 1.615E-01 ppb

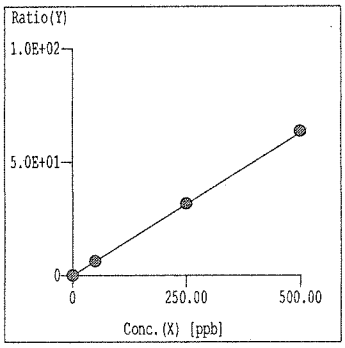
=== Graph Detail ===

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



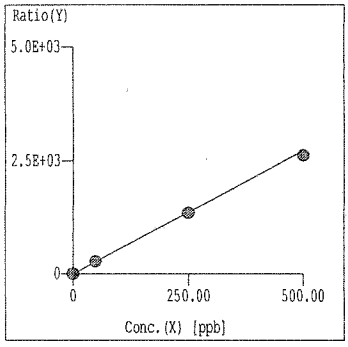
Curve Fit: Y=aX+b
r = 0.9998
Y = 6.288E-001*X +5.313E-002
X = 1.590E+000*Y -8.449E-002
DL = 2.073E-02 ppb
BEC = 8.449E-02 ppb

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



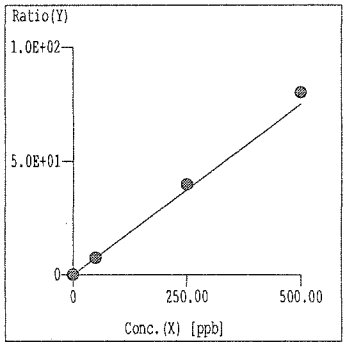
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.256E-001*X +1.240E-003
X = 7.964E+000*Y -9.879E-003
DL = 6.331E-03 ppb
BEC = 9.879E-03 ppb

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



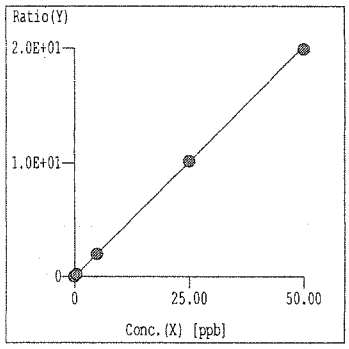
Curve Fit: Y=aX+b
r = 0.9999
Y = 5.448E+000*X +5.744E-002
X = 1.835E-001*Y -1.054E-002
DL = 2.870E-03 ppb
BEC = 1.054E-02 ppb

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



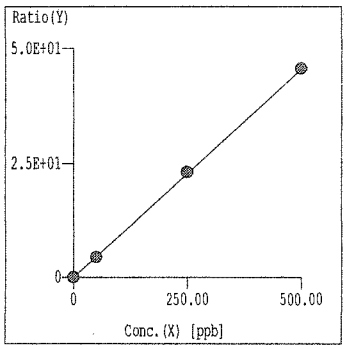
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.501E-001*X +8.453E-004
X = 6.663E+000*Y -5.632E-003
DL = 2.020E-03 ppb
BEC = 5.632E-03 ppb

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



Curve Fit: Y=aX+b
r = 1.0000
Y = 4.036E-001*X +1.144E-003
X = 2.478E+000*Y -2.834E-003
DL = 5.795E-04 ppb
BEC = 2.834E-03 ppb

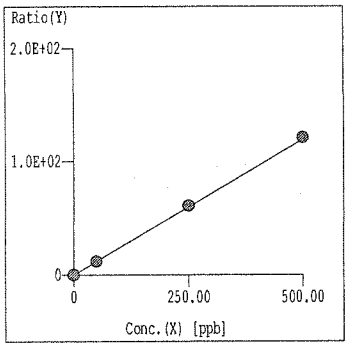
Step Mass Element ISTD Unit
(3) 111 Cd 115 ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 9.099E-002*X +3.325E-004
X = 1.099E+001*Y -3.655E-003
DL = 1.202E-02 ppb
BEC = 3.655E-03 ppb

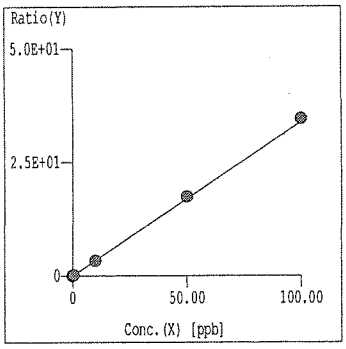
=== Graph Detail ===

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



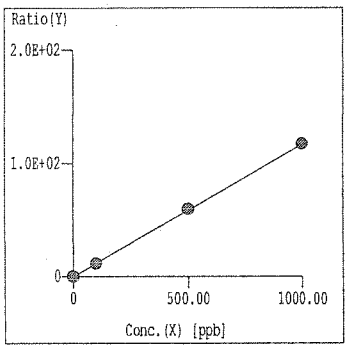
Curve Fit: Y=aX+b
r = 1.0000
Y = 2.386E-001*X +2.225E-003
X = 4.192E+000*Y -9.326E-003
DL = 4.014E-03 ppb
BEC = 9.326E-03 ppb

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



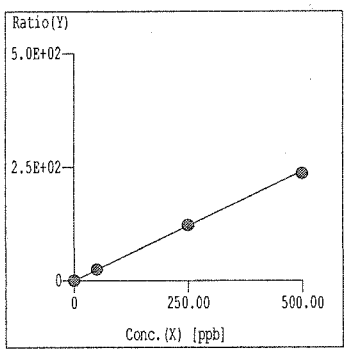
Curve Fit: Y=aX+b
r = 1.0000
Y = 3.386E-001*X +5.271E-003
X = 2.953E+000*Y -1.557E-002
DL = 4.298E-03 ppb
BEC = 1.557E-02 ppb

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



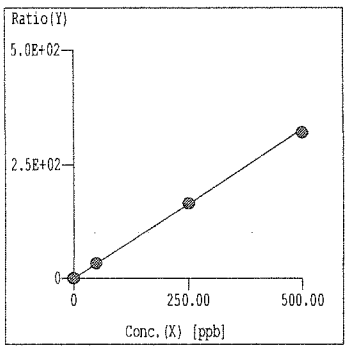
Curve Fit: Y=aX+b
r = 1.0000
Y = 1.167E-001*X +1.342E-003
X = 8.568E+000*Y -1.150E-002
DL = 2.893E-03 ppb
BEC = 1.150E-02 ppb

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



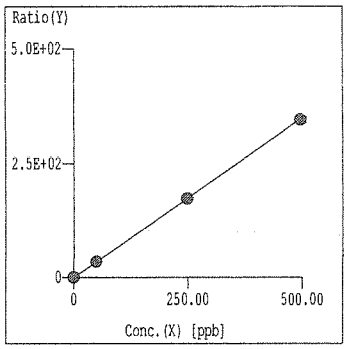
Curve Fit: Y=aX+b
r = 0.9999
Y = 4.826E-001*X +1.618E-003
X = 2.072E+000*Y -3.352E-003
DL = 1.852E-03 ppb
BEC = 3.352E-03 ppb

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



Curve Fit: Y=aX+b
r = 0.9999
Y = 6.568E-001*X +1.056E-002
X = 1.523E+000*Y -1.608E-002
DL = 3.858E-03 ppb
BEC = 1.608E-02 ppb

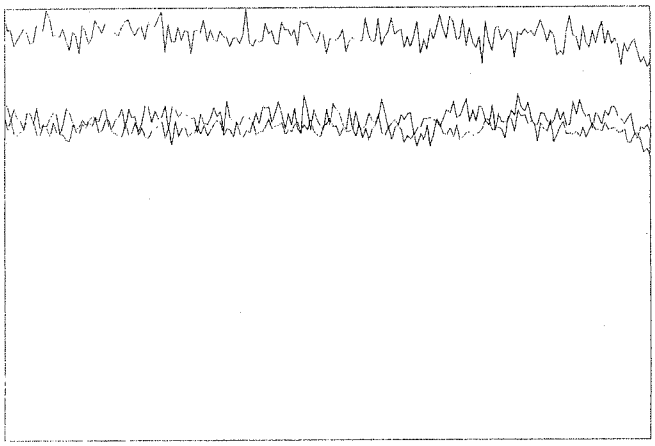
Step Mass Element (3) 238 U | ISTD 159 | Unit ppb



Curve Fit: Y=aX+b
r = 1.0000
Y = 6.997E-001*X +6.144E-004
X = 1.429E+000*Y -8.782E-004
DL = 2.963E-04 ppb
BEC = 8.782E-04 ppb

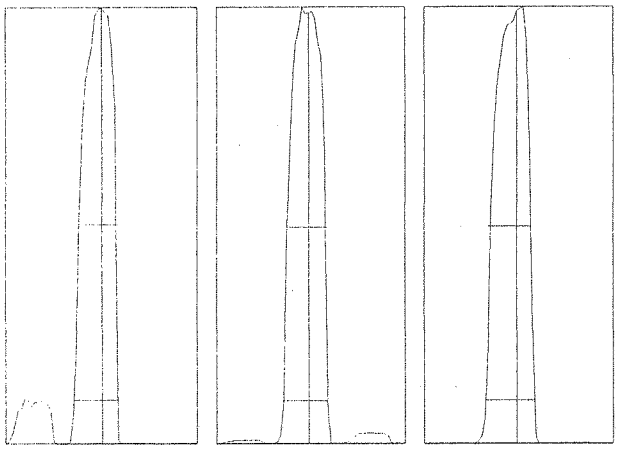
Tune Report

Tune File : NORM.U
Comment : 1FEB1 cm 5/19/17



Integration Time:	0.1000 sec	
Sampling Period:	0.6200 sec	
n:	200	
Oxide:	156/140	1.272%
Doubly Charged:	70/140	0.891%

m/z	Range	Count	Mean	RSD%	Background
7	20,000	14129.0	14915.8	2.70	3.00
89	100,000	65269.0	71667.4	2.40	3.90
205	50,000	43720.0	46783.8	2.74	8.50
156/140	2	1.280%	1.312%	5.68	
70/140	2	0.832%	0.842%	5.38	



m/z:	7	89	205
Height:	4,573	20,653	12,955
Axis:	7.05	89.00	205.00
W-50%:	0.65	0.65	0.70
W-10%:	0.700	0.700	0.800

Integration Time: 0.1000 sec
Acquisition Time: 22.7600 sec

Y axis : Linear

Generated : May 18, 2017 13:46:50
Printed : May 18, 2017 13:46:52

Tune Report

Tune File : NORM.U
Comment : IFGE01 CL 09/18

Tuning Parameters

===Plasma Condition===			===Ion Lenses===			===Q-Pole Parameters===		
RF Power	:	1500 W	Extract 1	:	0 V	AMU Gain	:	128
RF Matching	:	1.69 V	Extract 2	:	-110 V	AMU Offset	:	126
Smpl Depth	:	8 mm	Omega Bias-ce	:	-30 V	Axis Gain	:	0.9995
Torch-H	:	-1 mm	Omega Lens-ce	:	1.6 V	Axis Offset	:	-0.02
Torch-V	:	-0.4 mm	Cell Entrance	:	-26 V	QP Bias	:	-3 V
Carrier Gas	:	0.9 L/min	QP Focus	:	1 V			
Makeup Gas	:	0.12 L/min	Cell Exit	:	-30 V	===Detector Parameters===		
Optional Gas	:	--- %				Discriminator	:	8 mV
Nebulizer Pump	:	0.1 rps	===Octopole Parameters===			Analog HV	:	2100 V
Sample Pump	:	--- rps	OctP RF	:	169 V	Pulse HV	:	1380 V
S/C Temp	:	2 degC	OctP Bias	:	-8 V			

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

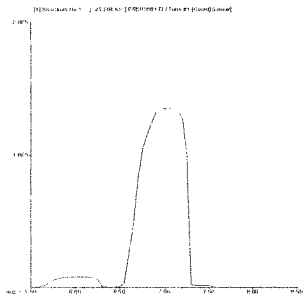
Generated : May 18, 2017 13:46:50
Printed : May 18, 2017 13:46:54

6020 QC Tune Report

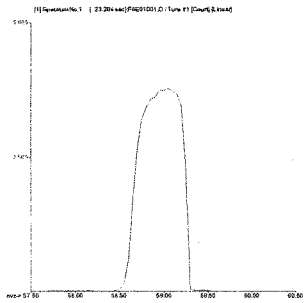
Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01001.D
Date Acquired: May 18 2017 05:19 pm
Acq. Method: TN6020_C.M
Operator: CCapul
Sample Name: 6020tunchk
Misc Info:
Vial Number: 1301
Current Method: C:\ICPCHEM\1\METHODS\TN6020_C.M

RSD (%)

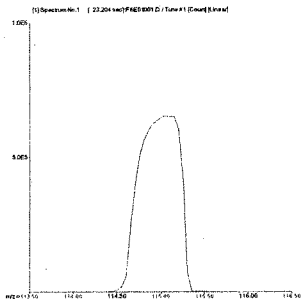
Element	Actual	Required	Flag
7 Li	3.88	5.00	
59 Co	3.48	5.00	
115 In	1.63	5.00	
205 Tl	3.21	5.00	



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



59 Co
Mass Calib.
Actual: 59.05
Required: 58.90 - 59.10
Flag:
Peak Width-10%
Actual: 0.65
Limit 0.90
Flag:



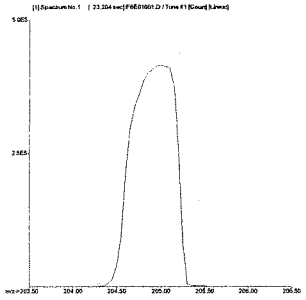
115 In

Mass Calib.

Actual:	115.05	
Required:	114.90 -	115.10
Flag:		

Peak Width-10%

Actual:	0.65
Limit	0.90
Flag:	



205 Tl

Mass Calib.

Actual:	205.00	
Required:	204.90 -	205.10
Flag:		

Peak Width-10%

Actual:	0.65
Limit	0.90
Flag:	

Calibration Blank QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01003
Date Acquired:	May 18 2017 05:28 pm
Operator:	CCapul
Sample Name:	BLNK
Misc Info:	
Vial Number:	1101
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	May 18 2017 05:31 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1548327.00	A	26010.00	1.68
7	Li	99226.22	P	852.00	0.86
9	Be	43.33	P	8.82	20.35
11	B	7143.01	P	71.87	1.01
23	Na	87842.30	P	677.30	0.77
24	Mg	19059.29	P	293.40	1.54
27	Al	20593.54	P	554.10	2.69
28	Si	7777.95	P	2222.00	28.57
31	P	28628.54	P	227.10	0.79
39	K	170112.09	P	1463.00	0.86
40	Ca	143516.20	P	1077.00	0.75
45	Sc	2631872.00	A	90910.00	3.45
45	Sc	635278.63	P	6151.00	0.97
45	Sc	4546191.00	A	21430.00	0.47
47	Ti	124.45	P	15.03	12.08
51	V	5177.15	P	23.45	0.45
52	Cr	3554.00	P	100.30	2.82
55	Mn	4511.96	P	30.99	0.69
56	Fe	23599.57	P	1604.00	6.80
59	Co	294.46	P	5.09	1.73
60	Ni	137.11	P	11.34	8.27
63	Cu	732.69	P	42.73	5.83
66	Zn	3358.27	P	55.42	1.65
72	Ge	681861.81	P	8779.00	1.29
72	Ge	334988.91	P	2121.00	0.63
72	Ge	1113686.00	A	5501.00	0.49
75	As	167.11	P	7.95	4.76
78	Se	11.56	P	5.18	44.81
88	Sr	1233.43	P	29.63	2.40
90	Zr	1755.72	P	53.57	3.05
95	Mo	147.78	P	5.09	3.45
107	Ag	108.89	P	7.70	7.07
111	Cd	46.39	P	25.15	54.21
115	In	7719022.00	A	109500.00	1.42
118	Sn	315.57	P	38.49	12.20
121	Sb	474.47	P	38.49	8.11
137	Ba	1222.32	P	37.91	3.10
159	Tb	9870292.00	A	91600.00	0.93
182	W	243.34	P	38.44	15.80
205	Tl	400.02	P	29.63	7.41
208	Pb	1727.89	P	27.15	1.57
209	Bi	5903612.00	A	26790.00	0.45
235	U	8.89	P	1.93	21.66
238	U	267.79	P	23.41	8.74

Calibration Blank QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01004
Date Acquired:	May 18 2017 05:33 pm
Operator:	CCapul
Sample Name:	S0
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2
Last Cal Update:	May 18 2017 05:31 pm
Sample Type:	CalBlk
Total Dil Factor:	1.00

QC&ISTD Elements

Element		CPS Mean		SD	RSD(%)
6	Li	1477556.00	A	11440.00	0.77
7	Li	95805.32	P	1021.00	1.07
9	Be	12.22	P	1.93	15.75
11	B	1314.55	P	62.04	4.72
23	Na	70796.24	P	575.10	0.81
24	Mg	2771.46	P	120.80	4.36
27	Al	3599.44	P	20.10	0.56
28	Si	3567.22	P	49.12	1.38
31	P	28086.55	P	865.70	3.08
39	K	161837.20	P	274.00	0.17
40	Ca	44207.33	P	190.70	0.43
45	Sc	2504049.00	A	7709.00	0.31
45	Sc	599608.88	P	3406.00	0.57
45	Sc	4320355.00	A	47380.00	1.10
47	Ti	106.67	P	12.02	11.27
51	V	5025.32	P	87.39	1.74
52	Cr	3302.61	P	19.83	0.60
55	Mn	3283.81	P	105.10	3.20
56	Fe	5088.83	P	133.40	2.62
59	Co	165.56	P	35.33	21.34
60	Ni	91.78	P	7.90	8.61
63	Cu	430.68	P	8.51	1.98
66	Zn	1000.07	P	33.83	3.38
72	Ge	646366.69	P	5600.00	0.87
72	Ge	316483.00	P	1445.00	0.46
72	Ge	1049262.00	A	18770.00	1.79
75	As	166.22	P	14.30	8.60
78	Se	8.00	P	1.76	22.05
88	Sr	588.92	P	64.76	11.00
90	Zr	1375.67	P	100.10	7.28
95	Mo	62.22	P	6.94	11.15
107	Ag	83.34	P	5.77	6.93
111	Cd	16.48	P	26.60	161.42
115	In	7320842.00	A	78570.00	1.07
118	Sn	161.12	P	21.69	13.46
121	Sb	380.02	P	35.28	9.28
137	Ba	97.78	P	8.39	8.58
159	Tb	9222371.00	A	176400.00	1.91
182	W	174.45	P	19.53	11.20
205	Tl	147.78	P	27.15	18.37
208	Pb	945.60	P	60.03	6.35
209	Bi	5547617.00	A	28970.00	0.52
235	U	8.89	P	5.09	57.28
238	U	56.67	P	6.67	11.77

Calibration Standard QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01005.D\F6E01005.D#
Date Acquired: May 18 2017 05:37 pm
Operator: CCapul
Sample Name: S1 0.5
Misc Info:
Vial Number: 1104
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:36 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1501663.00	A	28420.00	1.89
7 Li	104508.80	P	603.20	0.58
9 Be	3009.27	P	73.38	2.44
11 B	6589.42	P	129.50	1.97
23 Na	462781.31	P	1778.00	0.38
24 Mg	1072573.00	A	10430.00	0.97
27 Al	1358299.00	A	3563.00	0.26
28 Si	202669.09	P	1140.00	0.56
31 P	63906.63	P	659.00	1.03
39 K	245883.59	P	890.70	0.36
40 Ca	842482.19	M	5159.00	0.61
45 Sc	2591384.00	A	21400.00	0.83
45 Sc	618802.13	P	1421.00	0.23
45 Sc	4420084.00	A	21720.00	0.49
47 Ti	1800.17	P	91.67	5.09
51 V	10532.21	P	129.00	1.22
52 Cr	10368.30	P	57.69	0.56
55 Mn	29604.81	P	297.70	1.01
56 Fe	1140987.00	A	13590.00	1.19
59 Co	21183.57	P	110.10	0.52
60 Ni	2546.90	P	27.36	1.07
63 Cu	7231.58	P	30.15	0.42
66 Zn	8745.13	P	210.80	2.41
72 Ge	673675.38	P	3013.00	0.45
72 Ge	323057.69	P	956.10	0.30
72 Ge	1053043.00	A	16390.00	1.56
75 As	1187.39	P	4.67	0.39
78 Se	436.01	P	14.11	3.24
88 Sr	30205.65	P	503.20	1.67
90 Zr	135918.41	P	1963.00	1.44
95 Mo	5532.37	P	119.40	2.16
107 Ag	15594.54	P	190.30	1.22
111 Cd	3598.85	P	132.70	3.69
115 In	7391781.00	A	25460.00	0.34
118 Sn	9318.96	P	317.80	3.41
121 Sb	13016.39	P	179.00	1.38
137 Ba	4662.06	P	179.40	3.85
159 Tb	9530817.00	A	168400.00	1.77
182 W	10417.69	P	384.60	3.69
205 Tl	23701.61	P	297.40	1.25
208 Pb	33916.91	P	692.40	2.04
209 Bi	5699715.00	A	48920.00	0.86
235 U	265.57	P	15.75	5.93
238 U	33451.18	P	265.80	0.79

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1501663.00	1.89	1477556.10	101.6	60 - 125	
45 Sc	2591383.80	0.83	2504048.50	103.5	60 - 125	
45 Sc	618802.06	0.23	599608.94	103.2	60 - 125	
45 Sc	4420084.00	0.49	4320355.00	102.3	60 - 125	
72 Ge	673675.44	0.45	646366.69	104.2	60 - 125	
72 Ge	323057.72	0.30	316482.97	102.1	60 - 125	
72 Ge	1053043.40	1.56	1049262.10	100.4	60 - 125	
115 In	7391780.50	0.34	7320841.50	101.0	60 - 125	
159 Tb	9530817.00	1.77	9222372.00	103.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01006.D\F6E01006.D#
Date Acquired: May 18 2017 05:42 pm
Operator: CCapul
Sample Name: S2 50
Misc Info:
Vial Number: 1105
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:40 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1510991.00	A	7066.00	0.47
7 Li	170674.00	P	725.50	0.43
9 Be	29963.23	P	79.48	0.27
11 B	46562.83	P	431.50	0.93
23 Na	35098392.00	A	399500.00	1.14
24 Mg	100196600.00	A	1120000.00	1.12
27 Al	129139500.00	A	498700.00	0.39
28 Si	1022816.00	A	9978.00	0.98
31 P	101240.00	P	1484.00	1.47
39 K	7948099.00	A	150800.00	1.90
40 Ca	70981536.00	A	1216000.00	1.71
45 Sc	2537495.00	A	23470.00	0.92
45 Sc	596682.38	P	4862.00	0.81
45 Sc	4416851.00	A	9841.00	0.22
47 Ti	141143.70	P	620.20	0.44
51 V	551496.31	P	6868.00	1.25
52 Cr	645644.19	P	4249.00	0.66
55 Mn	14603160.00	A	129900.00	0.89
56 Fe	104196100.00	A	2154000.00	2.07
59 Co	2003372.00	A	28100.00	1.40
60 Ni	231117.00	P	2342.00	1.01
63 Cu	590014.81	P	1883.00	0.32
66 Zn	325214.59	P	2187.00	0.67
72 Ge	651865.13	P	2696.00	0.41
72 Ge	312451.31	P	769.10	0.25
72 Ge	1056904.00	A	19980.00	1.89
75 As	97072.11	P	413.00	0.43
78 Se	40730.82	P	151.90	0.37
88 Sr	2895050.00	A	26210.00	0.91
90 Zr	362231.81	P	2261.00	0.62
95 Mo	544005.63	P	1365.00	0.25
107 Ag	144426.91	P	2496.00	1.73
111 Cd	322093.31	P	3876.00	1.20
115 In	7272377.00	A	19120.00	0.26
118 Sn	867139.38	P	3502.00	0.40
121 Sb	241003.09	P	1705.00	0.71
137 Ba	831820.19	P	10030.00	1.21
159 Tb	9222096.00	A	77250.00	0.84
182 W	103207.20	P	915.70	0.89
205 Tl	2262306.00	A	21030.00	0.93
208 Pb	3066317.00	A	14440.00	0.47
209 Bi	5462950.00	A	33230.00	0.61
235 U	23015.24	P	387.30	1.68
238 U	3210639.00	A	17800.00	0.55

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1510991.40	0.47	1477556.10	102.3	60 - 125	
45 Sc	2537494.50	0.92	2504048.50	101.3	60 - 125	
45 Sc	596682.44	0.81	599608.94	99.5	60 - 125	
45 Sc	4416851.00	0.22	4320355.00	102.2	60 - 125	
72 Ge	651865.13	0.41	646366.69	100.9	60 - 125	
72 Ge	312451.31	0.25	316482.97	98.7	60 - 125	
72 Ge	1056903.60	1.89	1049262.10	100.7	60 - 125	
115 In	7272377.50	0.26	7320841.50	99.3	60 - 125	
159 Tb	9222096.00	0.84	9222372.00	100.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01007.D\F6E01007.D#
Date Acquired:	May 18 2017 05:46 pm
Operator:	CCapul
Sample Name:	S3 250
Misc Info:	
Vial Number:	1106
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update:	May 18 2017 05:45 pm
Sample Type:	CalStd
Total Dil Factor:	1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1506865.00	A	8890.00	0.59
7 Li	480402.19	P	6363.00	1.32
9 Be	154459.59	P	1578.00	1.02
11 B	217491.20	P	2975.00	1.37
23 Na	182870500.00	A	2182000.00	1.19
24 Mg	518930590.00	A	7466000.00	1.44
27 Al	675125310.00	A	5403000.00	0.80
28 Si	5256352.00	A	101700.00	1.93
31 P	421925.50	P	5673.00	1.34
39 K	40826752.00	A	407200.00	1.00
40 Ca	369495620.00	A	6419000.00	1.74
45 Sc	2572992.00	A	29460.00	1.15
45 Sc	612197.00	P	9220.00	1.51
45 Sc	4537549.00	A	77420.00	1.71
47 Ti	742240.88	P	5476.00	0.74
51 V	2802892.00	A	24490.00	0.87
52 Cr	3238614.00	A	18090.00	0.56
55 Mn	74748952.00	A	1257000.00	1.68
56 Fe	531144290.00	A	1656000.00	0.31
59 Co	9848143.00	A	80470.00	0.82
60 Ni	1110942.00	A	9801.00	0.88
63 Cu	2834362.00	A	23430.00	0.83
66 Zn	1652635.00	A	5244.00	0.32
72 Ge	645254.00	P	3867.00	0.60
72 Ge	313035.19	P	1008.00	0.32
72 Ge	1081023.00	A	9405.00	0.87
75 As	499258.41	P	1509.00	0.30
78 Se	204233.91	P	2007.00	0.98
88 Sr	14547040.00	A	130000.00	0.89
90 Zr	928444.00	M	24050.00	2.59
95 Mo	2773971.00	A	31870.00	1.15
107 Ag	707554.88	P	5433.00	0.77
111 Cd	1612764.00	A	830.90	0.05
115 In	6979480.00	A	108300.00	1.55
118 Sn	4239882.00	A	13240.00	0.31
121 Sb	1209559.00	A	16520.00	1.37
137 Ba	4159357.00	A	37000.00	0.89
159 Tb	8950726.00	A	143200.00	1.60
182 W	511366.31	P	7774.00	1.52
205 Tl	10888400.00	A	61230.00	0.56
208 Pb	14780770.00	A	117400.00	0.79
209 Bi	5168475.00	A	25440.00	0.49
235 U	114659.80	P	470.20	0.41
238 U	15518140.00	A	49020.00	0.32

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1506864.90	0.59	1477556.10	102.0	60 - 125	
45 Sc	2572991.80	1.15	2504048.50	102.8	60 - 125	
45 Sc	612197.00	1.51	599608.94	102.1	60 - 125	
45 Sc	4537549.00	1.71	4320355.00	105.0	60 - 125	
72 Ge	645254.06	0.60	646366.69	99.8	60 - 125	
72 Ge	313035.25	0.32	316482.97	98.9	60 - 125	
72 Ge	1081022.80	0.87	1049262.10	103.0	60 - 125	
115 In	6979480.00	1.55	7320841.50	95.3	60 - 125	
159 Tb	8950726.00	1.60	9222372.00	97.1	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Calibration Standard QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01008.D\F6E01008.D#
Date Acquired: May 18 2017 05:51 pm
Operator: CCapul
Sample Name: S4 500
Misc Info:
Vial Number: 1107
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:49 pm
Sample Type: CalStd
Total Dil Factor: 1.00

QC&ISTD Elements

Element	CPS Mean		SD	RSD(%)
6 Li	1635514.00	A	26430.00	1.62
7 Li	949971.88	A	22580.00	2.38
9 Be	319791.91	P	3117.00	0.97
11 B	457229.69	P	6882.00	1.51
23 Na	395063710.00	A	8425000.00	2.13
24 Mg	1103345000.00	A	9536000.00	0.86
27 Al	1423319000.00	A	8731000.00	0.61
28 Si	11174430.00	A	280000.00	2.51
31 P	911993.13	A	13320.00	1.46
39 K	89150152.00	A	161600.00	0.18
40 Ca	795019070.00	A	19650000.00	2.47
45 Sc	2772372.00	A	33290.00	1.20
45 Sc	657843.13	P	4494.00	0.68
45 Sc	5012377.00	A	82350.00	1.64
47 Ti	1636536.00	A	17350.00	1.06
51 V	5861907.00	A	34940.00	0.60
52 Cr	6751076.00	A	32220.00	0.48
55 Mn	158993410.00	A	757600.00	0.48
56 Fe	1126402000.00	A	10470000.00	0.93
59 Co	20989250.00	A	134600.00	0.64
60 Ni	2333117.00	A	4938.00	0.21
63 Cu	5754211.00	A	40960.00	0.71
66 Zn	3461046.00	A	28710.00	0.83
72 Ge	671805.19	P	15270.00	2.27
72 Ge	330426.00	P	2161.00	0.65
72 Ge	1170594.00	A	23690.00	2.02
75 As	1017595.00	A	8841.00	0.87
78 Se	426913.59	P	5158.00	1.21
88 Sr	30579600.00	A	103700.00	0.34
90 Zr	2127858.00	A	15930.00	0.75
95 Mo	5831212.00	A	70400.00	1.21
107 Ag	1448055.00	A	8424.00	0.58
111 Cd	3321886.00	A	10740.00	0.32
115 In	7281542.00	A	34800.00	0.48
118 Sn	8809607.00	A	126100.00	1.43
121 Sb	2519229.00	A	36110.00	1.43
137 Ba	8532069.00	A	106800.00	1.25
159 Tb	9298069.00	A	158300.00	1.70
182 W	1069926.00	A	12680.00	1.19
205 Tl	21947310.00	A	289500.00	1.32
208 Pb	29743620.00	A	241000.00	0.81
209 Bi	5247071.00	A	15780.00	0.30
235 U	235606.41	P	184.10	0.08
238 U	32099030.00	A	285800.00	0.89

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1635513.60	1.62	1477556.10	110.7	60 - 125	
45 Sc	2772372.30	1.20	2504048.50	110.7	60 - 125	
45 Sc	657843.06	0.68	599608.94	109.7	60 - 125	
45 Sc	5012376.50	1.64	4320355.00	116.0	60 - 125	
72 Ge	671805.19	2.27	646366.69	103.9	60 - 125	
72 Ge	330425.97	0.65	316482.97	104.4	60 - 125	
72 Ge	1170594.00	2.02	1049262.10	111.6	60 - 125	
115 In	7281541.50	0.48	7320841.50	99.5	60 - 125	
159 Tb	9298069.00	1.70	9222372.00	100.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

ICV QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01009.D\F6E01009.D#
Date Acquired:	May 18 2017 05:55 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICV
Misc Info:	
Vial Number:	1204
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICV1
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc. RSD(%)	Expected	QC Range(%)	Flag
7 Li	29.53	ppb	552688.1	0.38	30.00	90 - 110	
9 Be	29.15	ppb	182014.6	1.44	30.00	90 - 110	
11 B	26.87	ppb	125761.6	2.34	30.00	90 - 110	Fail
23 Na	28530.00	ppb	226525600.0	0.47	30000.00	90 - 110	
24 Mg	29170.00	ppb	621722180.0	0.96	30000.00	90 - 110	
27 Al	29010.00	ppb	815752830.0	1.02	30000.00	90 - 110	
28 Si	2948.00	ppb	6377449.0	0.99	3000.00	90 - 110	
31 P	282.10	ppb	495715.6	0.96	300.00	90 - 110	
39 K	30050.00	ppb	50765840.0	1.18	30000.00	90 - 110	
40 Ca	28710.00	ppb	452798210.0	0.97	30000.00	90 - 110	
47 Ti	301.50	ppb	913510.5	0.66	300.00	90 - 110	
51 V	286.50	ppb	3278685.0	1.22	300.00	90 - 110	
52 Cr	279.20	ppb	3800340.0	1.66	300.00	90 - 110	
55 Mn	1801.00	ppb	95692968.0	1.48	2000.00	90 - 110	
56 Fe	28640.00	ppb	637275010.0	0.83	30000.00	90 - 110	
59 Co	260.10	ppb	11607470.0	0.85	300.00	90 - 110	Fail
60 Ni	278.20	ppb	1303297.0	1.21	300.00	90 - 110	
63 Cu	262.50	ppb	3291686.0	1.22	300.00	90 - 110	Fail
66 Zn	291.50	ppb	1979912.0	1.66	300.00	90 - 110	
75 As	290.20	ppb	581117.8	0.52	300.00	90 - 110	
78 Se	292.90	ppb	242817.1	0.83	300.00	90 - 110	
88 Sr	281.90	ppb	17116450.0	1.71	300.00	90 - 110	
90 Zr	20.49	ppb	1159609.0	2.43	30.00	90 - 110	Fail
95 Mo	309.90	ppb	3308789.0	1.14	300.00	90 - 110	
107 Ag	28.13	ppb	807642.1	0.82	30.00	90 - 110	
111 Cd	295.50	ppb	1912878.0	0.60	300.00	90 - 110	
118 Sn	302.80	ppb	5139427.0	0.41	300.00	90 - 110	
121 Sb	61.66	ppb	1485467.0	0.76	60.00	90 - 110	
137 Ba	303.70	ppb	2521649.0	1.71	300.00	90 - 110	
182 W	28.73	ppb	604794.4	0.72	30.00	90 - 110	
205 Tl	281.50	ppb	12504870.0	0.89	300.00	90 - 110	
208 Pb	283.30	ppb	17129680.0	1.43	300.00	90 - 110	
235 U	1.96	ppb	133937.2	1.61	2.20	90 - 110	Fail
238 U	287.60	ppb	18524540.0	1.57	300.00	90 - 110	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1571522.1	1.03	1477556.10	106.4	60 - 125	
45 Sc	2719253.3	1.28	2504048.50	108.6	60 - 125	
45 Sc	632662.7	1.74	599608.94	105.5	60 - 125	
45 Sc	4720672.5	1.02	4320355.00	109.3	60 - 125	
72 Ge	660280.8	0.69	646366.69	102.2	60 - 125	
72 Ge	318358.2	0.82	316482.97	100.6	60 - 125	
72 Ge	1114678.8	1.64	1049262.10	106.2	60 - 125	
115 In	7113384.0	0.63	7320841.50	97.2	60 - 125	
159 Tb	9205111.0	0.71	9222372.00	99.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

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

Data Results:

Analytes:	Fail
ISTD:	Pass

ICB QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01010.D\F6E01010.D#
Date Acquired:	May 18 2017 05:59 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICB
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.1405	ppb	105350.5	4.47	0.20	
9 Be	-0.0001	ppb	13.3	733.53	0.10	
11 B	0.1220	ppb	2466.9	8.27	5.00	
23 Na	4.0080	ppb	108382.0	7.89	40.00	
24 Mg	0.6530	ppb	17288.3	18.16	10.00	
27 Al	0.4947	ppb	18189.4	23.31	20.00	
28 Si	1.5870	ppb	7202.7	18.83	20.00	
31 P	0.2229	ppb	29662.4	137.86	10.00	
39 K	7.3860	ppb	184188.8	18.83	20.00	
40 Ca	1.6060	ppb	72395.5	4.52	25.00	
47 Ti	0.0252	ppb	202.2	50.30	0.50	
51 V	-0.0136	ppb	5176.3	37.61	0.50	
52 Cr	-0.0256	ppb	3248.6	6.32	0.20	
55 Mn	0.0716	ppb	7846.8	17.00	0.20	
56 Fe	3.7750	ppb	88345.5	6.63	10.00	
59 Co	0.0025	ppb	383.4	31.45	0.20	
60 Ni	0.0067	ppb	144.4	41.15	0.20	
63 Cu	0.0658	ppb	1367.9	3.07	0.40	
66 Zn	0.0098	ppb	1176.8	194.19	2.00	
75 As	0.0575	ppb	289.3	9.82	0.20	
78 Se	0.0709	ppb	70.0	30.07	0.20	
90 Zr	-0.0363	ppb	1194.5	3.42	2.00	
95 Mo	0.1050	ppb	1304.6	10.75	0.40	
107 Ag	0.0038	ppb	211.1	18.87	0.20	
111 Cd	0.0032	ppb	48.7	126.12	0.20	
118 Sn	0.1295	ppb	2602.6	11.61	0.20	
121 Sb	0.0134	ppb	771.2	25.53	0.40	
137 Ba	0.0044	ppb	145.6	132.92	0.20	
182 W	0.0230	ppb	691.2	18.94	1.00	
205 Tl	0.0315	ppb	1641.3	6.79	0.20	
208 Pb	0.0356	ppb	3308.1	7.65	0.10	
235 U	0.0002	ppb	24.4	113.07	1.00	
238 U	0.0321	ppb	2251.4	6.36	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1669284.5	0.78	1477556.10	113.0	60 - 125	
45 Sc	2684273.8	1.02	2504048.50	107.2	60 - 125	
45 Sc	641803.1	0.76	599608.94	107.0	60 - 125	
45 Sc	4819006.5	1.24	4320355.00	111.5	60 - 125	
72 Ge	691410.8	1.11	646366.69	107.0	60 - 125	
72 Ge	324150.3	1.07	316482.97	102.4	60 - 125	
72 Ge	1128845.0	1.13	1049262.10	107.6	60 - 125	
115 In	7856978.0	0.76	7320841.50	107.3	60 - 125	
159 Tb	9756542.0	0.71	9222372.00	105.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01011.D\F6E01011.D#
Date Acquired: May 18 2017 06:03 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: MRLE1801
Misc Info: 1/100/10 ppb
Vial Number: 1305
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	115941.7	0.0000	0.8129	ppb	9.75	50.00	
9 Be	# 3	6	6153.7	0.0000	0.9649	ppb	2.57	50.00	
11 B	# 3	6	47547.1	0.0000	9.7240	ppb	1.11	100.00	
23 Na	# 1	45	841217.3	0.0000	102.8000	ppb	1.64	50000.00	
24 Mg	# 3	45	2184337.0	0.0000	106.5000	ppb	1.20	50000.00	
27 Al	# 3	45	2775182.0	0.0000	102.5000	ppb	0.66	50000.00	
28 Si	# 1	45	10500.7	0.0000	3.3740	ppb	4.94	5000.00	
31 P	# 3	45	106913.8	0.0000	49.8400	ppb	0.55	500.00	
39 K	# 2	45	344159.2	0.0000	109.8000	ppb	1.73	50000.00	
40 Ca	# 1	45	1628670.0	0.0000	106.7000	ppb	1.48	50000.00	
47 Ti	# 3	45	3342.7	0.0000	1.1070	ppb	2.48	500.00	
51 V	# 2	45	16458.0	0.0000	1.0220	ppb	0.81	500.00	
52 Cr	# 2	45	16458.7	0.0000	0.9840	ppb	0.04	500.00	
55 Mn	# 3	45	58903.5	0.0000	1.0800	ppb	1.08	3000.00	
56 Fe	# 1	45	2210930.0	0.0000	105.4000	ppb	0.98	50000.00	
59 Co	# 3	45	42356.1	0.0000	0.9811	ppb	1.40	500.00	
60 Ni	# 2	45	4886.8	0.0000	1.0500	ppb	1.35	500.00	
63 Cu	# 2	45	13717.5	0.0000	1.0840	ppb	0.91	500.00	
66 Zn	# 3	72	70926.9	0.0000	10.5300	ppb	0.89	500.00	
75 As	# 2	72	2137.1	0.0000	0.9997	ppb	2.16	500.00	
78 Se	# 1	72	842.7	0.0000	1.0070	ppb	3.73	500.00	
88 Sr	# 3	72	124578.4	0.0000	2.0880	ppb	0.31	500.00	
90 Zr	# 3	72	107291.1	0.0000	1.8880	ppb	1.80	50.00	
95 Mo	# 3	115	11823.0	0.0000	1.0330	ppb	1.41	500.00	
107 Ag	# 3	115	30708.2	0.0000	1.0000	ppb	0.63	50.00	
111 Cd	# 3	115	6748.0	0.0000	0.9740	ppb	2.30	500.00	
118 Sn	# 3	115	19291.5	0.0000	1.0560	ppb	1.61	500.00	
121 Sb	# 3	115	25588.2	0.0000	0.9806	ppb	0.47	500.00	
137 Ba	# 3	115	8785.3	0.0000	0.9808	ppb	1.38	1000.00	
182 W	# 3	159	40854.3	0.0000	1.8730	ppb	2.05	50.00	
205 Tl	# 3	159	47681.1	0.0000	1.0370	ppb	1.73	500.00	
208 Pb	# 3	159	65819.6	0.0000	1.0390	ppb	1.57	500.00	
235 U	# 3	159	426.7	0.0000	0.0059	ppb	3.34	30.00	
238 U	# 3	159	63965.2	0.0000	0.9615	ppb	1.76	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1601747.00	1.02	1477556.10	108.4	60 - 125	
45 Sc # 1	2557975.00	0.41	2504048.50	102.2	60 - 125	
45 Sc # 2	614908.69	0.97	599608.94	102.6	60 - 125	
45 Sc # 3	4539034.00	1.24	4320355.00	105.1	60 - 125	
72 Ge # 1	659933.63	0.85	646366.69	102.1	60 - 125	
72 Ge # 2	313486.94	0.93	316482.97	99.1	60 - 125	
72 Ge # 3	1089456.80	1.38	1049262.10	103.8	60 - 125	
115 In # 3	7586306.50	1.35	7320841.50	103.6	60 - 125	
159 Tb # 3	9500368.00	1.82	9222372.00	103.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01012.D\F6E01012.D#
Date Acquired: May 18 2017 06:08 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: MRLE1802
Misc Info: 0.5/50/4 ppb
Vial Number: 1306
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	114037.8	0.0000	0.4605	ppb	12.53	50.00	
9 Be	# 3	6	3273.8	0.0000	0.4961	ppb	1.82	50.00	
11 B	# 3	6	7284.2	0.0000	1.1180	ppb	2.91	100.00	
23 Na	# 1	45	500179.4	0.0000	53.7800	ppb	2.20	50000.00	
24 Mg	# 3	45	1195723.0	0.0000	55.2600	ppb	1.92	50000.00	
27 Al	# 3	45	1513568.0	0.0000	53.0100	ppb	1.81	50000.00	
28 Si	# 1	45	18392.8	0.0000	6.7960	ppb	0.28	5000.00	
31 P	# 3	45	29453.6	0.0000	0.2386	ppb	175.15	500.00	
39 K	# 2	45	264304.0	0.0000	49.8500	ppb	6.68	50000.00	
40 Ca	# 1	45	904004.5	0.0000	54.8000	ppb	0.81	50000.00	
47 Ti	# 3	45	1671.3	0.0000	0.5044	ppb	6.98	500.00	
51 V	# 2	45	11688.4	0.0000	0.5192	ppb	1.74	500.00	
52 Cr	# 2	45	10380.3	0.0000	0.4696	ppb	1.40	500.00	
55 Mn	# 3	45	33391.9	0.0000	0.5473	ppb	2.51	3000.00	
56 Fe	# 1	45	1204054.0	0.0000	54.3600	ppb	1.06	50000.00	
59 Co	# 3	45	23333.5	0.0000	0.5103	ppb	1.65	500.00	
60 Ni	# 2	45	2753.2	0.0000	0.5391	ppb	2.46	500.00	
63 Cu	# 2	45	7930.2	0.0000	0.5638	ppb	2.63	500.00	
66 Zn	# 3	72	31358.5	0.0000	4.3380	ppb	1.44	500.00	
75 As	# 2	72	1277.8	0.0000	0.5208	ppb	4.99	500.00	
78 Se	# 1	72	461.8	0.0000	0.5218	ppb	1.15	500.00	
88 Sr	# 3	72	32831.3	0.0000	0.5160	ppb	1.85	500.00	
90 Zr	# 3	72	4131.8	0.0000	0.0141	ppb	22.54	50.00	
95 Mo	# 3	115	6437.2	0.0000	0.5364	ppb	3.82	500.00	
107 Ag	# 3	115	4812.1	0.0000	0.1478	ppb	3.35	50.00	
111 Cd	# 3	115	3600.0	0.0000	0.4961	ppb	4.34	500.00	
118 Sn	# 3	115	10384.2	0.0000	0.5406	ppb	0.38	500.00	
121 Sb	# 3	115	14152.0	0.0000	0.5125	ppb	0.86	500.00	
137 Ba	# 3	115	4976.6	0.0000	0.5272	ppb	0.80	1000.00	
182 W	# 3	159	327.8	0.0000	0.0064	ppb	9.45	50.00	
205 Tl	# 3	159	25597.4	0.0000	0.5313	ppb	1.78	500.00	
208 Pb	# 3	159	36378.5	0.0000	0.5423	ppb	1.58	500.00	
235 U	# 3	159	290.0	0.0000	0.0038	ppb	18.32	30.00	
238 U	# 3	159	34981.9	0.0000	0.5031	ppb	1.74	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1653746.50	0.10	1477556.10	111.9	60 - 125	
45 Sc # 1	2694831.80	2.69	2504048.50	107.6	60 - 125	
45 Sc # 2	660887.19	1.93	599608.94	110.2	60 - 125	
45 Sc # 3	4781466.00	1.37	4320355.00	110.7	60 - 125	
72 Ge # 1	691704.88	1.67	646366.69	107.0	60 - 125	
72 Ge # 2	335879.81	1.23	316482.97	106.1	60 - 125	
72 Ge # 3	1144380.60	0.27	1049262.10	109.1	60 - 125	
115 In # 3	7915452.50	1.42	7320841.50	108.1	60 - 125	
159 Tb # 3	9920749.00	0.77	9222372.00	107.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

ICS-A QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01013.D\F6E01013.D#
Date Acquired:	May 18 2017 06:12 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSA
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.34	ppb	94585.4	24.90	---	
9 Be	0.01	ppb	83.3	22.01	---	
11 B	0.64	ppb	4172.9	2.25	---	
23 Na	99210.00	ppb	752911230.0	1.30	120000.00	
24 Mg	96660.00	ppb	1994388000.0	2.56	120000.00	
27 Al	94270.00	ppb	2566875900.0	0.95	120000.00	
28 Si	6.62	ppb	17366.3	1.53	---	
31 P	96860.00	ppb	155276190.0	1.74	---	
39 K	100800.00	ppb	171145100.0	1.16	120000.00	
40 Ca	100200.00	ppb	1510938000.0	0.58	120000.00	
47 Ti	2136.00	ppb	6265738.0	0.32	2400.00	
51 V	-0.01	ppb	5150.9	10.76	---	
52 Cr	1.23	ppb	20470.5	0.05	---	
55 Mn	0.18	ppb	13084.0	2.40	---	
56 Fe	97500.00	ppb	2073764000.0	0.25	120000.00	
59 Co	0.22	ppb	9752.5	3.42	---	
60 Ni	0.18	ppb	980.9	4.07	---	
63 Cu	0.63	ppb	8507.8	1.27	---	
66 Zn	1.84	ppb	13765.8	2.59	---	
75 As	0.19	ppb	544.2	2.66	---	
78 Se	0.08	ppb	72.9	18.16	---	
88 Sr	0.62	ppb	38665.6	0.16	---	
90 Zr	0.25	ppb	17815.9	2.89	---	
95 Mo	2132.00	ppb	21864900.0	1.07	2400.00	
107 Ag	0.02	ppb	697.8	1.69	---	
111 Cd	0.22	ppb	1388.6	5.06	---	
118 Sn	0.04	ppb	835.6	10.83	---	
121 Sb	0.05	ppb	1622.4	4.27	---	
137 Ba	0.11	ppb	930.1	3.62	---	
182 W	0.12	ppb	2597.0	3.84	---	
205 Tl	0.01	ppb	470.0	5.69	---	
208 Pb	0.21	ppb	12935.1	1.00	---	
235 U	0.00	ppb	26.7	57.93	---	
238 U	0.01	ppb	430.0	6.41	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1394811.8	0.69	1477556.10	94.4	60 - 125	
45 Sc	2599083.8	1.46	2504048.50	103.8	60 - 125	
45 Sc	636885.4	0.54	599608.94	106.2	60 - 125	
45 Sc	4571475.0	1.68	4320355.00	105.8	60 - 125	
72 Ge	636934.8	2.20	646366.69	98.5	60 - 125	
72 Ge	319337.3	0.61	316482.97	100.9	60 - 125	
72 Ge	1128497.3	0.55	1049262.10	107.6	60 - 125	
115 In	6832432.0	1.10	7320841.50	93.3	60 - 125	
159 Tb	8849205.0	1.26	9222372.00	96.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01014.D\F6E01014.D#
Date Acquired: May 18 2017 06:17 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: ICSAB
Misc Info:
Vial Number: 1304
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: ICS-AB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	20.92	ppb	344328.5	1.25	20.00	80 - 120	
9 Be	20.97	ppb	107088.5	1.22	20.00	80 - 120	
11 B	19.58	ppb	75349.0	0.71	20.00	80 - 120	
23 Na	96560.00	ppb	724989180.0	1.09	100000.00	80 - 120	
24 Mg	93470.00	ppb	1911249000.0	0.28	100000.00	80 - 120	
27 Al	91980.00	ppb	2481486100.0	0.67	100000.00	80 - 120	
28 Si	201.40	ppb	415364.1	1.31	200.00	80 - 120	
31 P	93800.00	ppb	148994000.0	0.74	100000.00	80 - 120	
39 K	103200.00	ppb	167590700.0	1.00	100000.00	80 - 120	
40 Ca	98590.00	ppb	1470479000.0	2.20	100000.00	80 - 120	
47 Ti	2126.00	ppb	6177513.0	1.16	2000.00	80 - 120	
51 V	20.02	ppb	225431.3	0.97	20.00	80 - 120	
52 Cr	20.48	ppb	271816.3	1.57	20.00	80 - 120	
55 Mn	19.77	ppb	1011675.0	0.35	20.00	80 - 120	
56 Fe	97780.00	ppb	2057822000.0	0.47	100000.00	80 - 120	
59 Co	18.24	ppb	781246.0	0.91	20.00	80 - 120	
60 Ni	19.22	ppb	86873.7	0.75	20.00	80 - 120	
63 Cu	18.41	ppb	222918.8	1.62	20.00	80 - 120	
66 Zn	20.25	ppb	139076.4	0.50	20.00	80 - 120	
75 As	20.51	ppb	40288.0	0.65	20.00	80 - 120	
78 Se	21.93	ppb	17167.9	0.54	20.00	80 - 120	
88 Sr	19.43	ppb	1184769.0	1.46	20.00	80 - 120	
90 Zr	5.59	ppb	319716.0	1.45	20.00	80 - 120	Fail
95 Mo	2149.00	ppb	22018700.0	1.84	2000.00	80 - 120	
107 Ag	19.29	ppb	531349.0	1.13	20.00	80 - 120	
111 Cd	19.97	ppb	124061.9	0.45	20.00	80 - 120	
118 Sn	20.42	ppb	332627.6	0.96	20.00	80 - 120	
121 Sb	20.57	ppb	475807.5	0.83	20.00	80 - 120	
137 Ba	20.72	ppb	165177.7	1.86	20.00	80 - 120	
182 W	18.58	ppb	377947.1	1.27	20.00	80 - 120	
205 Tl	19.03	ppb	816749.7	1.58	20.00	80 - 120	
208 Pb	19.44	ppb	1136769.0	0.92	20.00	80 - 120	
235 U	0.13	ppb	8836.6	3.27	0.14	80 - 120	
238 U	19.31	ppb	1201509.0	1.63	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1285259.8	0.84	1477556.10	87.0	60 - 125	
45 Sc	2571724.5	0.71	2504048.50	102.7	60 - 125	
45 Sc	609586.6	1.30	599608.94	101.7	60 - 125	
45 Sc	4528793.0	0.53	4320355.00	104.8	60 - 125	
72 Ge	623244.1	1.78	646366.69	96.4	60 - 125	
72 Ge	311054.6	0.87	316482.97	98.3	60 - 125	
72 Ge	1118666.4	1.02	1049262.10	106.6	60 - 125	
115 In	6826248.0	0.67	7320841.50	93.2	60 - 125	
159 Tb	8894826.0	0.64	9222372.00	96.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01016.D\F6E01016.D#
Date Acquired: May 18 2017 06:26 pm
Operator: CCapul
Sample Name: CCV1
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:53 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	25.86 ppb	0.14	25.00	90 - 110	
9 Be	26.23 ppb	1.21	25.00	90 - 110	
11 B	50.43 ppb	1.07	50.00	90 - 110	
23 Na	23750.00 ppb	0.89	25000.00	90 - 110	
24 Mg	24540.00 ppb	0.60	25000.00	90 - 110	
27 Al	23880.00 ppb	2.63	25000.00	90 - 110	
28 Si	2425.00 ppb	1.03	2500.00	90 - 110	
31 P	230.60 ppb	1.24	250.00	90 - 110	
39 K	25310.00 ppb	0.78	25000.00	90 - 110	
40 Ca	24310.00 ppb	0.15	25000.00	90 - 110	
47 Ti	251.60 ppb	0.26	250.00	90 - 110	
51 V	253.50 ppb	0.92	250.00	90 - 110	
52 Cr	242.80 ppb	1.97	250.00	90 - 110	
55 Mn	1468.00 ppb	1.44	1500.00	90 - 110	
56 Fe	24820.00 ppb	1.87	25000.00	90 - 110	
59 Co	230.70 ppb	2.02	250.00	90 - 110	
60 Ni	244.30 ppb	1.12	250.00	90 - 110	
63 Cu	232.00 ppb	1.33	250.00	90 - 110	
66 Zn	250.50 ppb	1.55	250.00	90 - 110	
75 As	251.30 ppb	0.42	250.00	90 - 110	
78 Se	252.80 ppb	0.22	250.00	90 - 110	
88 Sr	249.70 ppb	1.76	250.00	90 - 110	
90 Zr	16.96 ppb	2.81	25.00	90 - 110	Fail
95 Mo	261.20 ppb	2.55	250.00	90 - 110	
107 Ag	25.29 ppb	0.55	25.00	90 - 110	
111 Cd	255.10 ppb	0.12	250.00	90 - 110	
118 Sn	256.70 ppb	1.65	250.00	90 - 110	
121 Sb	51.18 ppb	1.52	50.00	90 - 110	
137 Ba	514.60 ppb	2.25	500.00	90 - 110	
182 W	24.81 ppb	1.51	25.00	90 - 110	
205 Tl	252.30 ppb	1.46	250.00	90 - 110	
208 Pb	251.80 ppb	0.20	250.00	90 - 110	
235 U	1.72 ppb	0.49	1.80	90 - 110	
238 U	246.20 ppb	0.58	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1360392.10	1.03	1477556.10	92.1	60 - 125	
45 Sc	2627157.80	1.67	2504048.50	104.9	60 - 125	
45 Sc	603661.69	0.85	599608.94	100.7	60 - 125	
45 Sc	4670890.00	1.76	4320355.00	108.1	60 - 125	
72 Ge	649646.38	0.75	646366.69	100.5	60 - 125	
72 Ge	308793.91	0.53	316482.97	97.6	60 - 125	
72 Ge	1133491.00	2.80	1049262.10	108.0	60 - 125	
115 In	7498926.50	1.69	7320841.50	102.4	60 - 125	
159 Tb	9734387.00	0.45	9222372.00	105.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01017.D\F6E01017.D#
Date Acquired: May 18 2017 06:30 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: CCB1
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0994	ppb	88277.4	71.11	0.20	
9 Be	0.0013	ppb	18.9	53.73	0.10	
11 B	0.1599	ppb	2209.1	19.02	5.00	
23 Na	7.7100	ppb	128959.8	5.81	40.00	
24 Mg	0.7659	ppb	18466.3	9.75	10.00	
27 Al	0.5380	ppb	18187.1	13.40	20.00	
28 Si	1.0380	ppb	5662.4	5.91	20.00	
31 P	-1.1240	ppb	25567.2	15.37	10.00	
39 K	4.8240	ppb	165506.2	21.41	20.00	
40 Ca	1.2760	ppb	63123.8	6.80	25.00	
47 Ti	0.0297	ppb	202.2	24.84	0.50	
51 V	0.0339	ppb	5271.0	23.73	0.50	
52 Cr	-0.0295	ppb	2939.9	21.52	0.20	
55 Mn	0.0330	ppb	5375.6	11.85	0.20	
56 Fe	3.5100	ppb	77479.7	6.39	10.00	
59 Co	0.0002	ppb	262.2	140.40	0.20	
60 Ni	0.0045	ppb	123.1	15.76	0.20	
63 Cu	0.0349	ppb	897.4	7.83	0.40	
66 Zn	0.0082	ppb	1140.1	117.12	2.00	
75 As	0.0263	ppb	215.6	19.94	0.20	
78 Se	0.0327	ppb	34.9	15.54	0.20	
88 Sr	0.0045	ppb	902.3	27.75	0.20	
90 Zr	-0.0460	ppb	627.8	2.12	2.00	
95 Mo	0.1183	ppb	1460.1	8.10	0.40	
107 Ag	0.0008	ppb	116.7	63.22	0.20	
111 Cd	0.0020	ppb	40.6	47.97	0.20	
118 Sn	0.0688	ppb	1462.4	3.52	0.20	
121 Sb	0.0246	ppb	1067.9	13.86	0.40	
137 Ba	0.0125	ppb	220.0	19.90	0.20	
182 W	0.0107	ppb	432.2	22.14	1.00	
205 Tl	0.0114	ppb	720.0	16.16	0.20	
208 Pb	0.0051	ppb	1404.5	21.68	0.10	
235 U	0.0003	ppb	28.9	44.77	1.00	
238 U	0.0223	ppb	1634.6	13.90	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1390022.8	0.88	1477556.10	94.1	60 - 125	
45 Sc	2519835.5	1.43	2504048.50	100.6	60 - 125	
45 Sc	590730.6	0.87	599608.94	98.5	60 - 125	
45 Sc	4499722.0	1.38	4320355.00	104.2	60 - 125	
72 Ge	653567.0	0.47	646366.69	101.1	60 - 125	
72 Ge	309446.9	0.73	316482.97	97.8	60 - 125	
72 Ge	1103030.8	0.98	1049262.10	105.1	60 - 125	
115 In	7847228.0	0.50	7320841.50	107.2	60 - 125	
159 Tb	10094537.0	0.30	9222372.00	109.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01018.D\F6E01018.D#
Date Acquired: May 18 2017 06:35 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: IME013WB
Misc Info:
Vial Number: 2101
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: MBW
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0274	ppb	87728.9	427.84	1.00	
9 Be	0.0024	ppb	24.4	40.59	0.50	
11 B	0.3845	ppb	3072.6	2.42	5.00	
23 Na	13.5200	ppb	168175.8	2.73	50.00	
24 Mg	2.4150	ppb	51950.3	8.46	50.00	
27 Al	2.6660	ppb	75189.9	1.00	50.00	
28 Si	2.3230	ppb	8065.7	4.65	25.00	
31 P	-0.6311	ppb	26342.8	50.75	25.00	
39 K	1.4630	ppb	160966.2	171.77	50.00	
40 Ca	22.0800	ppb	359659.6	0.89	50.00	
47 Ti	0.0983	ppb	400.0	5.69	1.00	
51 V	0.0587	ppb	5561.7	8.74	0.50	
52 Cr	-0.0221	ppb	3048.6	26.45	0.50	
55 Mn	0.1052	ppb	9033.0	1.27	0.50	
56 Fe	3.1490	ppb	68612.4	1.10	50.00	
59 Co	-0.0009	ppb	215.6	80.81	0.50	
60 Ni	0.0340	ppb	253.3	15.73	0.50	
63 Cu	0.1162	ppb	1857.7	2.43	0.50	
66 Zn	1.0730	ppb	8360.4	1.10	10.00	
75 As	0.0134	ppb	190.9	78.77	0.50	
78 Se	0.0138	ppb	19.1	21.22	0.50	
88 Sr	0.0549	ppb	3965.1	4.71	1.00	
90 Zr	-0.0427	ppb	821.2	1.57	2.50	
95 Mo	0.0552	ppb	723.4	2.23	1.00	
107 Ag	0.0004	ppb	103.3	182.75	0.50	
111 Cd	-0.0022	ppb	10.4	28.28	0.50	
118 Sn	0.0347	ppb	832.3	10.72	0.50	
121 Sb	0.0431	ppb	1573.5	6.55	0.50	
137 Ba	0.1154	ppb	1173.4	5.45	0.50	
182 W	0.0025	ppb	241.1	47.24	1.00	
205 Tl	0.0041	ppb	362.2	23.29	0.50	
208 Pb	0.0273	ppb	2852.5	3.63	0.50	
235 U	0.0000	ppb	13.3	269.17	---	
238 U	0.0071	ppb	558.9	8.00	0.50	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1366135.1	1.10	1477556.10	92.5	60 - 125	
45 Sc	2468033.5	0.89	2504048.50	98.6	60 - 125	
45 Sc	593597.0	1.49	599608.94	99.0	60 - 125	
45 Sc	4499041.5	0.37	4320355.00	104.1	60 - 125	
72 Ge	642891.1	0.30	646366.69	99.5	60 - 125	
72 Ge	310410.9	1.22	316482.97	98.1	60 - 125	
72 Ge	1112052.1	1.38	1049262.10	106.0	60 - 125	
115 In	7923518.0	0.79	7320841.50	108.2	60 - 125	
159 Tb	10010376.0	0.05	9222372.00	108.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

LCS QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01019.D\F6E01019.D#
Date Acquired:	May 18 2017 06:40 pm
Operator:	CCapul
Sample Name:	IME013WL
Misc Info:	
Vial Number:	2102
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	471340.41	30.41	ppb	0.49	30.00	80 - 120	
9 Be	162678.30	31.29	ppb	1.44	30.00	80 - 120	
11 B	113905.30	29.26	ppb	1.02	30.00	80 - 120	
23 Na	20008200.00	2836.00	ppb	0.74	3000.00	80 - 120	
24 Mg	58176192.00	2892.00	ppb	1.46	3000.00	80 - 120	
27 Al	73773360.00	2780.00	ppb	0.89	3000.00	80 - 120	
28 Si	13738.96	5.39	ppb	8.43	3000.00	80 - 120	Fail
31 P	27177.18	0.07	ppb	568.91	300.00	80 - 120	Fail
39 K	4781627.00	3024.00	ppb	1.14	3000.00	80 - 120	
40 Ca	41050300.00	2936.00	ppb	0.83	3000.00	80 - 120	
47 Ti	82932.50	28.97	ppb	1.50	30.00	80 - 120	
51 V	318672.41	30.24	ppb	1.30	30.00	80 - 120	
52 Cr	376846.59	30.23	ppb	0.57	30.00	80 - 120	
55 Mn	1500768.00	29.85	ppb	2.22	30.00	80 - 120	
56 Fe	59812380.00	3035.00	ppb	0.68	3000.00	80 - 120	
59 Co	1192632.00	28.31	ppb	2.68	30.00	80 - 120	
60 Ni	133445.59	31.33	ppb	0.60	30.00	80 - 120	
63 Cu	343036.09	30.06	ppb	0.50	30.00	80 - 120	
66 Zn	413316.91	62.28	ppb	0.77	60.00	80 - 120	
75 As	54980.24	28.77	ppb	0.43	30.00	80 - 120	
78 Se	23302.34	29.85	ppb	0.73	30.00	80 - 120	
88 Sr	1798979.00	30.37	ppb	0.35	30.00	80 - 120	
90 Zr	2140.24	-0.02	ppb	8.52	20.00	80 - 120	Fail
95 Mo	335685.91	28.88	ppb	0.86	30.00	80 - 120	
107 Ag	903952.13	28.93	ppb	1.12	30.00	80 - 120	
111 Cd	200598.91	28.47	ppb	0.60	30.00	80 - 120	
118 Sn	554789.69	30.03	ppb	1.34	30.00	80 - 120	
121 Sb	767993.69	29.28	ppb	0.85	30.00	80 - 120	
137 Ba	269351.69	29.80	ppb	0.71	30.00	80 - 120	
182 W	444.47	0.01	ppb	6.63	30.00	80 - 120	Fail
205 Tl	1483334.00	31.24	ppb	0.96	30.00	80 - 120	
208 Pb	1943031.00	30.06	ppb	0.68	30.00	80 - 120	
235 U	14225.94	0.20	ppb	0.60	0.21	80 - 120	
238 U	2011713.00	29.22	ppb	0.85	29.79	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1308435.00	1.13	1477556.10	88.6	60 - 125	
45 Sc	2408408.00	1.03	2504048.50	96.2	60 - 125	
45 Sc	574852.69	0.97	599608.94	95.9	60 - 125	
45 Sc	4455501.00	1.57	4320355.00	103.1	60 - 125	
72 Ge	621465.00	0.70	646366.69	96.1	60 - 125	
72 Ge	303019.47	0.77	316482.97	95.7	60 - 125	
72 Ge	1086724.00	1.29	1049262.10	103.6	60 - 125	
115 In	7742190.00	1.24	7320841.50	105.8	60 - 125	
159 Tb	9838097.00	0.92	9222372.00	106.7	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes:	Fail
ISTD:	Pass

LCS QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01020.D\F6E01020.D#
Date Acquired:	May 18 2017 06:44 pm
Operator:	CCapul
Sample Name:	IME013WC
Misc Info:	
Vial Number:	2103
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	LCS
Final Dil Factor:	1.00

Analyte Elements

Element	CPS Mean	Conc.		RSD(%)	Expected	QC Range(%)	Flag
7 Li	468221.59	30.22	ppb	1.33	30.00	80 - 120	
9 Be	161413.41	31.10	ppb	2.48	30.00	80 - 120	
11 B	112924.40	29.05	ppb	1.55	30.00	80 - 120	
23 Na	20179060.00	2776.00	ppb	0.07	3000.00	80 - 120	
24 Mg	56090760.00	2800.00	ppb	1.77	3000.00	80 - 120	
27 Al	72427272.00	2740.00	ppb	1.52	3000.00	80 - 120	
28 Si	10004.82	3.28	ppb	2.84	3000.00	80 - 120	Fail
31 P	26843.88	-0.08	ppb	163.04	300.00	80 - 120	Fail
39 K	4764550.00	2954.00	ppb	0.34	3000.00	80 - 120	
40 Ca	40932592.00	2841.00	ppb	0.59	3000.00	80 - 120	
47 Ti	81574.62	28.61	ppb	2.03	30.00	80 - 120	
51 V	316164.69	29.42	ppb	0.31	30.00	80 - 120	
52 Cr	373785.50	29.42	ppb	1.10	30.00	80 - 120	
55 Mn	1489935.00	29.75	ppb	1.23	30.00	80 - 120	
56 Fe	60108080.00	2960.00	ppb	0.54	3000.00	80 - 120	
59 Co	1176292.00	28.03	ppb	1.73	30.00	80 - 120	
60 Ni	131941.20	30.39	ppb	0.31	30.00	80 - 120	
63 Cu	345788.50	29.73	ppb	0.83	30.00	80 - 120	
66 Zn	626655.31	94.85	ppb	0.69	60.00	80 - 120	Fail
75 As	54726.59	28.59	ppb	0.62	30.00	80 - 120	
78 Se	23471.91	29.57	ppb	0.21	30.00	80 - 120	
88 Sr	1751205.00	29.67	ppb	0.93	30.00	80 - 120	
90 Zr	15944.84	0.23	ppb	3.83	20.00	80 - 120	Fail
95 Mo	331679.41	28.91	ppb	0.90	30.00	80 - 120	
107 Ag	876665.38	28.42	ppb	0.91	30.00	80 - 120	
111 Cd	196479.59	28.25	ppb	0.47	30.00	80 - 120	
118 Sn	539220.31	29.57	ppb	0.90	30.00	80 - 120	
121 Sb	755784.63	29.19	ppb	1.31	30.00	80 - 120	
137 Ba	261676.91	29.33	ppb	0.60	30.00	80 - 120	
182 W	401.13	0.01	ppb	7.71	30.00	80 - 120	Fail
205 Tl	1454169.00	31.09	ppb	1.04	30.00	80 - 120	
208 Pb	1900511.00	29.84	ppb	1.33	30.00	80 - 120	
235 U	13770.98	0.19	ppb	1.25	0.21	80 - 120	
238 U	1979775.00	29.19	ppb	1.25	29.79	80 - 120	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1306298.40	1.08	1477556.10	88.4	60 - 125	
45 Sc	2481142.50	0.98	2504048.50	99.1	60 - 125	
45 Sc	585895.31	0.77	599608.94	97.7	60 - 125	
45 Sc	4437722.00	1.66	4320355.00	102.7	60 - 125	
72 Ge	631895.31	1.09	646366.69	97.8	60 - 125	
72 Ge	303522.88	0.66	316482.97	95.9	60 - 125	
72 Ge	1082861.50	0.37	1049262.10	103.2	60 - 125	
115 In	7642222.50	0.80	7320841.50	104.4	60 - 125	
159 Tb	9693102.00	1.36	9222372.00	105.1	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01024.D\F6E01024.D#
Date Acquired: May 18 2017 07:02 pm
Operator: CCapul
Sample Name: CCV2
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:53 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.01 ppb	0.83	25.00	90 - 110	
9 Be	25.35 ppb	0.36	25.00	90 - 110	
11 B	51.70 ppb	1.56	50.00	90 - 110	
23 Na	24340.00 ppb	0.37	25000.00	90 - 110	
24 Mg	24770.00 ppb	1.31	25000.00	90 - 110	
27 Al	24420.00 ppb	1.95	25000.00	90 - 110	
28 Si	2601.00 ppb	0.57	2500.00	90 - 110	
31 P	243.60 ppb	0.90	250.00	90 - 110	
39 K	25620.00 ppb	0.27	25000.00	90 - 110	
40 Ca	24710.00 ppb	0.58	25000.00	90 - 110	
47 Ti	258.60 ppb	1.44	250.00	90 - 110	
51 V	250.20 ppb	1.54	250.00	90 - 110	
52 Cr	243.80 ppb	1.10	250.00	90 - 110	
55 Mn	1455.00 ppb	0.66	1500.00	90 - 110	
56 Fe	24470.00 ppb	0.94	25000.00	90 - 110	
59 Co	231.00 ppb	0.12	250.00	90 - 110	
60 Ni	244.70 ppb	1.35	250.00	90 - 110	
63 Cu	226.70 ppb	1.81	250.00	90 - 110	
66 Zn	248.50 ppb	0.48	250.00	90 - 110	
75 As	252.40 ppb	0.41	250.00	90 - 110	
78 Se	250.80 ppb	0.50	250.00	90 - 110	
88 Sr	244.70 ppb	0.83	250.00	90 - 110	
90 Zr	16.71 ppb	0.78	25.00	90 - 110	Fail
95 Mo	268.00 ppb	0.46	250.00	90 - 110	
107 Ag	25.27 ppb	0.69	25.00	90 - 110	
111 Cd	250.50 ppb	0.31	250.00	90 - 110	
118 Sn	258.90 ppb	0.45	250.00	90 - 110	
121 Sb	51.57 ppb	0.43	50.00	90 - 110	
137 Ba	519.60 ppb	0.79	500.00	90 - 110	
182 W	24.39 ppb	0.91	25.00	90 - 110	
205 Tl	244.40 ppb	0.35	250.00	90 - 110	
208 Pb	242.10 ppb	0.50	250.00	90 - 110	
235 U	1.65 ppb	2.00	1.80	90 - 110	
238 U	239.20 ppb	0.84	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1634531.80	0.57	1477556.10	110.6	60 - 125	
45 Sc	2954304.30	1.90	2504048.50	118.0	60 - 125	
45 Sc	674177.00	1.25	599608.94	112.4	60 - 125	
45 Sc	5181951.00	0.74	4320355.00	119.9	60 - 125	
72 Ge	719364.44	0.53	646366.69	111.3	60 - 125	
72 Ge	336066.91	0.30	316482.97	106.2	60 - 125	
72 Ge	1236101.50	0.81	1049262.10	117.8	60 - 125	
115 In	7826541.50	0.41	7320841.50	106.9	60 - 125	
159 Tb	10173077.00	1.04	9222372.00	110.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01025.D\F6E01025.D#
Date Acquired:	May 18 2017 07:06 pm
Acq. Method:	EM6020R2.M
Operator:	CCapu1
Sample Name:	CCB2
Misc Info:	
Vial Number:	1201
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	CCB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	-0.0534	ppb	104949.5	193.71	0.20	
9 Be	0.0019	ppb	25.6	113.18	0.10	
11 B	1.7180	ppb	10121.5	8.13	5.00	
23 Na	48.1300	ppb	479375.6	3.62	40.00	Fail
24 Mg	0.5910	ppb	16865.5	6.29	10.00	
27 Al	0.3817	ppb	15822.2	7.46	20.00	
28 Si	1.2450	ppb	6834.0	11.90	20.00	
31 P	1.1880	ppb	33070.7	10.26	10.00	
39 K	6.1000	ppb	191006.5	16.53	20.00	
40 Ca	0.7633	ppb	62582.1	8.19	25.00	
47 Ti	0.0209	ppb	200.0	33.79	0.50	
51 V	0.0450	ppb	6145.1	13.01	0.50	
52 Cr	-0.0750	ppb	2694.9	5.43	0.20	
55 Mn	0.0169	ppb	5164.4	4.52	0.20	
56 Fe	2.5490	ppb	64837.4	8.49	10.00	
59 Co	0.0000	ppb	287.8	3217.50	0.20	
60 Ni	0.0003	ppb	119.3	127.02	0.20	
63 Cu	0.0983	ppb	1869.0	7.77	0.40	
66 Zn	0.0075	ppb	1251.2	30.16	2.00	
75 As	0.0356	ppb	258.0	15.51	0.20	
78 Se	0.0284	ppb	34.9	11.21	0.20	
88 Sr	0.0058	ppb	1081.2	16.82	0.20	
90 Zr	-0.0463	ppb	675.6	0.48	2.00	
95 Mo	0.0690	ppb	954.5	2.68	0.40	
107 Ag	-0.0001	ppb	94.4	137.14	0.20	
111 Cd	0.0001	ppb	29.1	2771.00	0.20	
118 Sn	0.0593	ppb	1394.6	7.06	0.20	
121 Sb	0.0273	ppb	1235.7	4.23	0.40	
137 Ba	0.0078	ppb	192.2	32.05	0.20	
182 W	0.0087	ppb	396.7	26.41	1.00	
205 Tl	0.0112	ppb	731.2	4.39	0.20	
208 Pb	0.0009	ppb	1159.0	68.16	0.10	
235 U	0.0001	ppb	21.1	48.47	1.00	
238 U	0.0214	ppb	1622.4	14.07	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1641108.6	1.28	1477556.10	111.1	60 - 125	
45 Sc	2834503.8	1.80	2504048.50	113.2	60 - 125	
45 Sc	673576.8	0.65	599608.94	112.3	60 - 125	
45 Sc	5092971.0	0.17	4320355.00	117.9	60 - 125	
72 Ge	726726.6	1.18	646366.69	112.4	60 - 125	
72 Ge	341525.1	0.43	316482.97	107.9	60 - 125	
72 Ge	1215426.5	0.88	1049262.10	115.8	60 - 125	
115 In	8516321.0	1.06	7320841.50	116.3	60 - 125	
159 Tb	10404707.0	0.66	9222372.00	112.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes:	Fail
ISTD:	Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01027.D\F6E01027.D#
Date Acquired: May 18 2017 07:15 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-01
Misc Info:
Vial Number: 2107
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	99731.5	0.0000	-0.0415	ppb	87.61	50.00	
9 Be	# 3	6	12.2	0.0000	-0.0001	ppb	288.05	50.00	
11 B	# 3	6	6092.5	0.0000	0.9519	ppb	5.63	100.00	
23 Na	# 1	45	419395.0	0.0000	43.6000	ppb	2.96	50000.00	
24 Mg	# 3	45	63486.0	0.0000	2.7480	ppb	1.35	50000.00	
27 Al	# 3	45	118523.2	0.0000	3.9510	ppb	2.30	50000.00	
28 Si	# 1	45	22175.9	0.0000	8.5850	ppb	3.94	5000.00	
31 P	# 3	45	35209.9	0.0000	3.3140	ppb	3.15	500.00	
39 K	# 2	45	185397.9	0.0000	8.4100	ppb	17.34	50000.00	
40 Ca	# 1	45	888922.1	0.0000	53.9400	ppb	1.16	50000.00	
47 Ti	# 3	45	411.1	0.0000	0.0914	ppb	9.89	500.00	
51 V	# 2	45	6511.0	0.0000	0.1032	ppb	7.62	500.00	
52 Cr	# 2	45	3551.4	0.0000	-0.0030	ppb	245.46	500.00	
55 Mn	# 3	45	9357.7	0.0000	0.0978	ppb	1.56	3000.00	
56 Fe	# 1	45	65800.8	0.0000	2.7460	ppb	25.31	50000.00	
59 Co	# 3	45	296.7	0.0000	0.0005	ppb	102.82	500.00	
60 Ni	# 2	45	317.3	0.0000	0.0433	ppb	10.49	500.00	
63 Cu	# 2	45	4998.6	0.0000	0.3524	ppb	5.46	500.00	
66 Zn	# 3	72	29194.1	0.0000	3.8880	ppb	0.36	500.00	
75 As	# 2	72	228.4	0.0000	0.0262	ppb	27.98	500.00	
78 Se	# 1	72	12.7	0.0000	0.0049	ppb	54.83	500.00	
88 Sr	# 3	72	4951.0	0.0000	0.0662	ppb	1.36	500.00	
90 Zr	# 3	72	1766.8	0.0000	-0.0277	ppb	5.93	50.00	
95 Mo	# 3	115	378.9	0.0000	0.0247	ppb	9.94	500.00	
107 Ag	# 3	115	142.2	0.0000	0.0014	ppb	40.68	50.00	
111 Cd	# 3	115	51.6	0.0000	0.0031	ppb	115.90	500.00	
118 Sn	# 3	115	899.0	0.0000	0.0360	ppb	12.79	500.00	
121 Sb	# 3	115	1984.7	0.0000	0.0549	ppb	7.86	500.00	
137 Ba	# 3	115	1023.4	0.0000	0.0940	ppb	9.84	1000.00	
182 W	# 3	159	220.0	0.0000	0.0013	ppb	69.31	50.00	
205 Tl	# 3	159	302.2	0.0000	0.0027	ppb	2.73	500.00	
208 Pb	# 3	159	3680.3	0.0000	0.0380	ppb	4.09	500.00	
235 U	# 3	159	10.0	0.0000	0.0000	ppb	1765.00	30.00	
238 U	# 3	159	403.4	0.0000	0.0047	ppb	7.02	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1556407.10	1.60	1477556.10	105.3	60 - 125	
45 Sc # 1	2689864.30	2.15	2504048.50	107.4	60 - 125	
45 Sc # 2	639941.13	0.80	599608.94	106.7	60 - 125	
45 Sc # 3	4863744.00	0.95	4320355.00	112.6	60 - 125	
72 Ge # 1	684229.63	1.37	646366.69	105.9	60 - 125	
72 Ge # 2	328138.56	0.60	316482.97	103.7	60 - 125	
72 Ge # 3	1183551.80	0.21	1049262.10	112.8	60 - 125	
115 In # 3	8317452.50	1.99	7320841.50	113.6	60 - 125	
159 Tb # 3	10358388.00	1.34	9222372.00	112.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01028.D\F6E01028.D#
Date Acquired: May 18 2017 07:20 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-04
Misc Info:
Vial Number: 2108
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	97222.3	0.0000	-0.0363	ppb	354.53	50.00	
9 Be	# 3	6	13.3	0.0000	0.0001	ppb	727.92	50.00	
11 B	# 3	6	5212.2	0.0000	0.7895	ppb	8.17	100.00	
23 Na	# 1	45	374113.6	0.0000	37.8300	ppb	1.39	50000.00	
24 Mg	# 3	45	59927.5	0.0000	2.5920	ppb	0.63	50000.00	
27 Al	# 3	45	65081.1	0.0000	2.1110	ppb	1.63	50000.00	
28 Si	# 1	45	22538.9	0.0000	8.7520	ppb	0.93	5000.00	
31 P	# 3	45	33946.8	0.0000	2.6130	ppb	15.38	500.00	
39 K	# 2	45	176643.8	0.0000	3.5380	ppb	32.14	50000.00	
40 Ca	# 1	45	428158.1	0.0000	24.4000	ppb	1.29	50000.00	
47 Ti	# 3	45	354.5	0.0000	0.0734	ppb	17.34	500.00	
51 V	# 2	45	6571.5	0.0000	0.1099	ppb	4.14	500.00	
52 Cr	# 2	45	3179.5	0.0000	-0.0294	ppb	7.60	500.00	
55 Mn	# 3	45	7320.9	0.0000	0.0608	ppb	5.52	3000.00	
56 Fe	# 1	45	40722.8	0.0000	1.6020	ppb	1.07	50000.00	
59 Co	# 3	45	206.7	0.0000	-0.0014	ppb	70.03	500.00	
60 Ni	# 2	45	165.1	0.0000	0.0113	ppb	5.96	500.00	
63 Cu	# 2	45	3253.0	0.0000	0.2154	ppb	7.01	500.00	
66 Zn	# 3	72	8792.9	0.0000	1.0680	ppb	1.23	500.00	
75 As	# 2	72	210.0	0.0000	0.0174	ppb	2.81	500.00	
78 Se	# 1	72	12.7	0.0000	0.0049	ppb	55.79	500.00	
88 Sr	# 3	72	3872.9	0.0000	0.0500	ppb	4.96	500.00	
90 Zr	# 3	72	844.5	0.0000	-0.0430	ppb	0.51	50.00	
95 Mo	# 3	115	253.3	0.0000	0.0149	ppb	23.26	500.00	
107 Ag	# 3	115	100.0	0.0000	0.0002	ppb	393.80	50.00	
111 Cd	# 3	115	52.6	0.0000	0.0034	ppb	17.12	500.00	
118 Sn	# 3	115	650.0	0.0000	0.0239	ppb	7.72	500.00	
121 Sb	# 3	115	1764.6	0.0000	0.0480	ppb	1.53	500.00	
137 Ba	# 3	115	776.7	0.0000	0.0697	ppb	6.50	1000.00	
182 W	# 3	159	200.0	0.0000	0.0004	ppb	158.94	50.00	
205 Tl	# 3	159	246.7	0.0000	0.0016	ppb	37.50	500.00	
208 Pb	# 3	159	2067.9	0.0000	0.0143	ppb	4.75	500.00	
235 U	# 3	159	10.0	0.0000	0.0000	ppb	2150.20	30.00	
238 U	# 3	159	313.3	0.0000	0.0034	ppb	12.14	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1516532.50	2.06	1477556.10	102.6	60 - 125	
45 Sc # 1	2689479.50	0.49	2504048.50	107.4	60 - 125	
45 Sc # 2	638286.31	0.62	599608.94	106.5	60 - 125	
45 Sc # 3	4854994.00	1.15	4320355.00	112.4	60 - 125	
72 Ge # 1	682225.50	0.28	646366.69	105.5	60 - 125	
72 Ge # 2	327795.31	1.20	316482.97	103.6	60 - 125	
72 Ge # 3	1173859.10	0.75	1049262.10	111.9	60 - 125	
115 In # 3	8198681.50	1.67	7320841.50	112.0	60 - 125	
159 Tb # 3	10363291.00	1.85	9222372.00	112.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01029.D\F6E01029.D#
Date Acquired: May 18 2017 07:25 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-06
Misc Info:
Vial Number: 2109
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	94621.9	0.0000	-0.0304	ppb	118.71	50.00	
9 Be	# 3	6	12.2	0.0000	0.0000	ppb	72464.00	50.00	
11 B	# 3	6	4742.0	0.0000	0.7138	ppb	1.60	100.00	
23 Na	# 1	45	430297.9	0.0000	46.0200	ppb	0.39	50000.00	
24 Mg	# 3	45	98902.5	0.0000	4.4890	ppb	1.51	50000.00	
27 Al	# 3	45	65285.1	0.0000	2.1770	ppb	3.81	50000.00	
28 Si	# 1	45	19052.8	0.0000	7.2910	ppb	3.74	5000.00	
31 P	# 3	45	33248.8	0.0000	2.7150	ppb	12.20	500.00	
39 K	# 2	45	175486.0	0.0000	4.6180	ppb	21.40	50000.00	
40 Ca	# 1	45	389360.9	0.0000	22.3900	ppb	1.50	50000.00	
47 Ti	# 3	45	314.5	0.0000	0.0633	ppb	6.98	500.00	
51 V	# 2	45	6490.1	0.0000	0.1125	ppb	8.89	500.00	
52 Cr	# 2	45	3224.8	0.0000	-0.0220	ppb	21.25	500.00	
55 Mn	# 3	45	7275.4	0.0000	0.0635	ppb	6.04	3000.00	
56 Fe	# 1	45	54312.3	0.0000	2.2650	ppb	10.90	50000.00	
59 Co	# 3	45	242.2	0.0000	-0.0005	ppb	173.46	500.00	
60 Ni	# 2	45	245.3	0.0000	0.0291	ppb	7.87	500.00	
63 Cu	# 2	45	3938.6	0.0000	0.2749	ppb	4.86	500.00	
66 Zn	# 3	72	8217.0	0.0000	1.0020	ppb	3.05	500.00	
75 As	# 2	72	210.2	0.0000	0.0192	ppb	31.92	500.00	
78 Se	# 1	72	8.7	0.0000	0.0002	ppb	720.76	500.00	
88 Sr	# 3	72	6136.0	0.0000	0.0866	ppb	2.33	500.00	
90 Zr	# 3	72	762.3	0.0000	-0.0442	ppb	2.23	50.00	
95 Mo	# 3	115	297.8	0.0000	0.0189	ppb	12.18	500.00	
107 Ag	# 3	115	121.1	0.0000	0.0009	ppb	89.21	50.00	
111 Cd	# 3	115	6.6	0.0000	-0.0028	ppb	126.28	500.00	
118 Sn	# 3	115	626.7	0.0000	0.0231	ppb	3.75	500.00	
121 Sb	# 3	115	1874.6	0.0000	0.0528	ppb	2.45	500.00	
137 Ba	# 3	115	1100.1	0.0000	0.1050	ppb	2.48	1000.00	
182 W	# 3	159	207.8	0.0000	0.0009	ppb	151.62	50.00	
205 Tl	# 3	159	227.8	0.0000	0.0013	ppb	65.33	500.00	
208 Pb	# 3	159	2372.4	0.0000	0.0193	ppb	5.29	500.00	
235 U	# 3	159	15.6	0.0000	0.0001	ppb	192.04	30.00	
238 U	# 3	159	253.3	0.0000	0.0027	ppb	5.42	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1474286.40	0.83	1477556.10	99.8	60 - 125	
45 Sc # 1	2639577.80	1.01	2504048.50	105.4	60 - 125	
45 Sc # 2	627570.63	0.54	599608.94	104.7	60 - 125	
45 Sc # 3	4729975.50	0.89	4320355.00	109.5	60 - 125	
72 Ge # 1	683627.50	0.83	646366.69	105.8	60 - 125	
72 Ge # 2	322475.31	0.76	316482.97	101.9	60 - 125	
72 Ge # 3	1159483.40	0.15	1049262.10	110.5	60 - 125	
115 In # 3	8092987.50	0.36	7320841.50	110.5	60 - 125	
159 Tb # 3	10217358.00	1.82	9222372.00	110.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

CCV QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01032.D\F6E01032.D#
Date Acquired: May 18 2017 07:39 pm
Operator: CCapul
Sample Name: CCV3
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:53 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.09 ppb	2.44	25.00	90 - 110	
9 Be	26.60 ppb	1.94	25.00	90 - 110	
11 B	50.51 ppb	0.85	50.00	90 - 110	
23 Na	23960.00 ppb	1.11	25000.00	90 - 110	
24 Mg	23620.00 ppb	1.31	25000.00	90 - 110	
27 Al	23640.00 ppb	0.91	25000.00	90 - 110	
28 Si	2509.00 ppb	1.47	2500.00	90 - 110	
31 P	234.10 ppb	0.94	250.00	90 - 110	
39 K	25730.00 ppb	0.60	25000.00	90 - 110	
40 Ca	24870.00 ppb	1.12	25000.00	90 - 110	
47 Ti	249.70 ppb	1.31	250.00	90 - 110	
51 V	252.00 ppb	0.75	250.00	90 - 110	
52 Cr	242.90 ppb	1.01	250.00	90 - 110	
55 Mn	1452.00 ppb	1.60	1500.00	90 - 110	
56 Fe	24980.00 ppb	0.83	25000.00	90 - 110	
59 Co	228.30 ppb	0.89	250.00	90 - 110	
60 Ni	243.20 ppb	1.56	250.00	90 - 110	
63 Cu	229.60 ppb	0.72	250.00	90 - 110	
66 Zn	248.70 ppb	0.79	250.00	90 - 110	
75 As	251.10 ppb	0.64	250.00	90 - 110	
78 Se	253.40 ppb	0.83	250.00	90 - 110	
88 Sr	252.90 ppb	0.87	250.00	90 - 110	
90 Zr	17.08 ppb	0.61	25.00	90 - 110	Fail
95 Mo	263.00 ppb	0.89	250.00	90 - 110	
107 Ag	24.69 ppb	0.80	25.00	90 - 110	
111 Cd	252.30 ppb	0.31	250.00	90 - 110	
118 Sn	258.00 ppb	1.14	250.00	90 - 110	
121 Sb	51.91 ppb	1.28	50.00	90 - 110	
137 Ba	516.00 ppb	0.79	500.00	90 - 110	
182 W	24.54 ppb	0.71	25.00	90 - 110	
205 Tl	243.60 ppb	1.50	250.00	90 - 110	
208 Pb	244.40 ppb	1.44	250.00	90 - 110	
235 U	1.68 ppb	1.32	1.80	90 - 110	
238 U	240.60 ppb	0.37	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1339115.30	1.75	1477556.10	90.6	60 - 125	
45 Sc	2721314.30	1.65	2504048.50	108.7	60 - 125	
45 Sc	632761.69	0.35	599608.94	105.5	60 - 125	
45 Sc	4888971.00	1.07	4320355.00	113.2	60 - 125	
72 Ge	682699.25	0.70	646366.69	105.6	60 - 125	
72 Ge	322236.53	0.21	316482.97	101.8	60 - 125	
72 Ge	1175863.60	0.35	1049262.10	112.1	60 - 125	
115 In	7885605.00	0.76	7320841.50	107.7	60 - 125	
159 Tb	10301506.00	0.48	9222372.00	111.7	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01033.D\F6E01033.D#
Date Acquired: May 18 2017 07:43 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: CCB3
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.0303	ppb	87592.2	314.70	0.20	
9 Be	0.0008	ppb	15.6	86.65	0.10	
11 B	0.4392	ppb	3258.2	9.72	5.00	
23 Na	16.8200	ppb	201611.2	1.91	40.00	
24 Mg	0.8418	ppb	20987.4	11.27	10.00	
27 Al	0.4696	ppb	17144.7	14.33	20.00	
28 Si	1.0190	ppb	5785.7	7.67	20.00	
31 P	-0.9493	ppb	27137.0	35.14	10.00	
39 K	2.1530	ppb	167710.2	95.26	20.00	
40 Ca	1.5820	ppb	69537.6	6.48	25.00	
47 Ti	0.0374	ppb	235.6	21.47	0.50	
51 V	0.0713	ppb	5895.4	7.05	0.50	
52 Cr	-0.0663	ppb	2571.8	6.78	0.20	
55 Mn	0.0110	ppb	4477.5	21.10	0.20	
56 Fe	4.2200	ppb	94776.7	4.64	10.00	
59 Co	-0.0007	ppb	234.5	68.54	0.20	
60 Ni	0.0068	ppb	138.7	29.70	0.20	
63 Cu	0.1216	ppb	1987.0	17.66	0.40	
66 Zn	0.0055	ppb	1195.7	189.93	2.00	
75 As	0.0183	ppb	207.6	36.53	0.20	
78 Se	0.0353	ppb	38.0	14.44	0.20	
88 Sr	0.0035	ppb	897.8	8.89	0.20	
90 Zr	-0.0468	ppb	623.4	1.33	2.00	
95 Mo	0.1892	ppb	2443.6	5.67	0.40	
107 Ag	0.0000	ppb	95.6	6026.90	0.20	
111 Cd	-0.0009	ppb	21.2	320.60	0.20	
118 Sn	0.0609	ppb	1400.1	1.54	0.20	
121 Sb	0.0209	ppb	1030.1	17.76	0.40	
137 Ba	0.0104	ppb	213.3	17.00	0.20	
182 W	0.0077	ppb	378.9	49.17	1.00	
205 Tl	0.0111	ppb	734.5	14.82	0.20	
208 Pb	0.0015	ppb	1223.4	28.23	0.10	
235 U	0.0001	ppb	22.2	61.25	1.00	
238 U	0.0207	ppb	1596.8	15.44	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1352318.6	0.69	1477556.10	91.5	60 - 125	
45 Sc	2591768.5	0.50	2504048.50	103.5	60 - 125	
45 Sc	614296.1	1.76	599608.94	102.4	60 - 125	
45 Sc	4725301.0	1.16	4320355.00	109.4	60 - 125	
72 Ge	668690.4	1.34	646366.69	103.5	60 - 125	
72 Ge	321367.9	0.84	316482.97	101.5	60 - 125	
72 Ge	1175333.3	0.19	1049262.10	112.0	60 - 125	
115 In	8360373.0	1.59	7320841.50	114.2	60 - 125	
159 Tb	10571391.0	0.83	9222372.00	114.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Pass
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01034.D\F6E01034.D#
Date Acquired: May 18 2017 07:47 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-02
Misc Info:
Vial Number: 2110
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	10434570.0	0.0000	1287.0000	ppb	0.33	50.00	>LRS
9 Be	# 3	6	44.4	0.0000	0.0114	ppb	12.01	50.00	
11 B	# 3	6	7621409.0	0.0000	3129.0000	ppb	1.18	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	76751392.0	0.0000	4209.0000	ppb	0.45	50000.00	
27 Al	# 3	45	104112.2	0.0000	4.1880	ppb	0.96	50000.00	
28 Si	# 1	45	15775770.0	0.0000	9418.0000	ppb	0.98	5000.00	>LRS
31 P	# 3	45	42583.4	0.0000	12.7400	ppb	0.93	500.00	
39 K	# 2	45	51844420.0	0.0000	34610.0000	ppb	0.20	50000.00	
40 Ca	# 1	45	1474855000.0	0.0000	120700.0000	ppb	1.03	50000.00	>LRS
47 Ti	# 3	45	4797.6	0.0000	1.8110	ppb	3.17	500.00	
51 V	# 2	45	9183.3	0.0000	0.4460	ppb	0.62	500.00	
52 Cr	# 2	45	6812.5	0.0000	0.3037	ppb	4.19	500.00	
55 Mn	# 3	45	15666090.0	0.0000	344.5000	ppb	0.11	3000.00	
56 Fe	# 1	45	1541512.0	0.0000	89.1900	ppb	0.07	50000.00	
59 Co	# 3	45	12535.7	0.0000	0.3224	ppb	3.25	500.00	
60 Ni	# 2	45	1433.9	0.0000	0.3214	ppb	1.89	500.00	
63 Cu	# 2	45	7586.6	0.0000	0.6404	ppb	1.28	500.00	
66 Zn	# 3	72	13002.8	0.0000	2.4620	ppb	1.22	500.00	
75 As	# 2	72	1522.3	0.0000	0.9375	ppb	2.60	500.00	
78 Se	# 1	72	153.3	0.0000	0.2545	ppb	1.59	500.00	
88 Sr	# 3	72	136550900.0	0.0000	3080.0000	ppb	0.68	500.00	>LRS
90 Zr	# 3	72	8532.8	0.0000	0.1499	ppb	4.75	50.00	
95 Mo	# 3	115	899615.3	0.0000	126.2000	ppb	0.74	500.00	
107 Ag	# 3	115	198.9	0.0000	0.0075	ppb	21.62	50.00	
111 Cd	# 3	115	-409.8	0.0000	-0.0988	ppb	132.71	500.00	
118 Sn	# 3	115	786.7	0.0000	0.0602	ppb	15.68	500.00	
121 Sb	# 3	115	1611.3	0.0000	0.0846	ppb	13.37	500.00	
137 Ba	# 3	115	234521.9	0.0000	42.3000	ppb	0.55	1000.00	
182 W	# 3	159	30686.3	0.0000	2.2930	ppb	1.13	50.00	
205 Tl	# 3	159	270.0	0.0000	0.0062	ppb	7.09	500.00	
208 Pb	# 3	159	1115.6	0.0000	0.0130	ppb	6.13	500.00	
235 U	# 3	159	287.8	0.0000	0.0065	ppb	4.67	30.00	
238 U	# 3	159	26746.6	0.0000	0.6543	ppb	1.31	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	829122.19	1.27	1477556.10	56.1	60 - 125	ISFail
45 Sc # 1	2106159.00	1.95	2504048.50	84.1	60 - 125	
45 Sc # 2	561146.44	1.07	599608.94	93.6	60 - 125	
45 Sc # 3	4038692.50	0.44	4320355.00	93.5	60 - 125	
72 Ge # 1	461750.72	1.98	646366.69	71.4	60 - 125	
72 Ge # 2	236898.06	0.84	316482.97	74.9	60 - 125	
72 Ge # 3	813731.31	0.51	1049262.10	77.6	60 - 125	
115 In # 3	4749383.50	0.77	7320841.50	64.9	60 - 125	
159 Tb # 3	5834608.50	0.60	9222372.00	63.3	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01035.D\F6E01035.D#
Date Acquired: May 18 2017 07:52 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-03
Misc Info:
Vial Number: 2111
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	9182045.0	0.0000	854.3000	ppb	1.21	50.00	>LRS
9 Be	# 3	6	26.7	0.0000	0.0041	ppb	40.04	50.00	
11 B	# 3	6	5819633.0	0.0000	1807.0000	ppb	2.76	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	342391200.0	0.0000	15930.0000	ppb	1.12	50000.00	
27 Al	# 3	45	198111.0	0.0000	6.8450	ppb	2.50	50000.00	
28 Si	# 1	45	28992970.0	0.0000	14030.0000	ppb	0.39	5000.00	>LRS
31 P	# 3	45	61645.5	0.0000	19.5800	ppb	2.18	500.00	
39 K	# 2	45	36915080.0	0.0000	21100.0000	ppb	0.59	50000.00	
40 Ca	# 1	45	2170565900.0	0.0000	144000.0000	ppb	0.91	50000.00	>LRS
47 Ti	# 3	45	8015.0	0.0000	2.5820	ppb	1.34	500.00	
51 V	# 2	45	27050.7	0.0000	1.8300	ppb	0.23	500.00	
52 Cr	# 2	45	9560.0	0.0000	0.4188	ppb	0.68	500.00	
55 Mn	# 3	45	5211442.0	0.0000	97.1300	ppb	0.39	3000.00	
56 Fe	# 1	45	225340.0	0.0000	10.3500	ppb	0.36	50000.00	
59 Co	# 3	45	19211.9	0.0000	0.4208	ppb	3.82	500.00	
60 Ni	# 2	45	3969.0	0.0000	0.7958	ppb	0.75	500.00	
63 Cu	# 2	45	10577.6	0.0000	0.7742	ppb	2.42	500.00	
66 Zn	# 3	72	49092.1	0.0000	8.1920	ppb	0.28	500.00	
75 As	# 2	72	5298.1	0.0000	2.9060	ppb	0.91	500.00	
78 Se	# 1	72	200.0	0.0000	0.2692	ppb	0.90	500.00	
88 Sr	# 3	72	162555010.0	0.0000	3092.0000	ppb	0.70	500.00	>LRS
90 Zr	# 3	72	3665.0	0.0000	0.0178	ppb	25.01	50.00	
95 Mo	# 3	115	445444.9	0.0000	52.0100	ppb	0.77	500.00	
107 Ag	# 3	115	221.1	0.0000	0.0068	ppb	9.57	50.00	
111 Cd	# 3	115	-693.8	0.0000	-0.1371	ppb	62.91	500.00	
118 Sn	# 3	115	642.3	0.0000	0.0379	ppb	3.73	500.00	
121 Sb	# 3	115	2233.6	0.0000	0.1000	ppb	1.31	500.00	
137 Ba	# 3	115	318219.9	0.0000	47.7700	ppb	0.79	1000.00	
182 W	# 3	159	20947.8	0.0000	1.3130	ppb	0.54	50.00	
205 Tl	# 3	159	15118.9	0.0000	0.4482	ppb	0.97	500.00	
208 Pb	# 3	159	2169.0	0.0000	0.0315	ppb	12.67	500.00	
235 U	# 3	159	4469.8	0.0000	0.0868	ppb	0.07	30.00	
238 U	# 3	159	612145.1	0.0000	12.6100	ppb	0.54	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1096670.30	1.57	1477556.10	74.2	60 - 125	
45 Sc # 1	2599373.80	0.49	2504048.50	103.8	60 - 125	
45 Sc # 2	654077.38	0.16	599608.94	109.1	60 - 125	
45 Sc # 3	4762293.50	1.14	4320355.00	110.2	60 - 125	
72 Ge # 1	570665.50	0.68	646366.69	88.3	60 - 125	
72 Ge # 2	281717.88	1.13	316482.97	89.0	60 - 125	
72 Ge # 3	964934.44	0.34	1049262.10	92.0	60 - 125	
115 In # 3	5705974.00	0.46	7320841.50	77.9	60 - 125	
159 Tb # 3	6937917.00	0.44	9222372.00	75.2	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01036.D\F6E01036.D#
Date Acquired: May 18 2017 07:56 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-05
Misc Info:
Vial Number: 2112
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	4972844.0	0.0000	375.0000	ppb	0.56	50.00	>LRS
9 Be	# 3	6	38.9	0.0000	0.0052	ppb	5.59	50.00	
11 B	# 3	6	4380043.0	0.0000	1113.0000	ppb	1.45	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	1508935900.0	0.0000	65550.0000	ppb	1.02	50000.00	>LRS
27 Al	# 3	45	102871.9	0.0000	3.2470	ppb	0.50	50000.00	
28 Si	# 1	45	33890392.0	0.0000	14920.0000	ppb	0.65	5000.00	>LRS
31 P	# 3	45	78631.3	0.0000	26.6500	ppb	1.56	500.00	
39 K	# 2	45	23335490.0	0.0000	12460.0000	ppb	0.18	50000.00	
40 Ca	# 1	45	2266010100.0	0.0000	136700.0000	ppb	0.88	50000.00	>LRS
47 Ti	# 3	45	9293.2	0.0000	2.8000	ppb	1.04	500.00	
51 V	# 2	45	32427.0	0.0000	2.1120	ppb	0.38	500.00	
52 Cr	# 2	45	6154.9	0.0000	0.1490	ppb	2.02	500.00	
55 Mn	# 3	45	29703280.0	0.0000	517.4000	ppb	0.74	3000.00	
56 Fe	# 1	45	731270.0	0.0000	31.0300	ppb	1.43	50000.00	
59 Co	# 3	45	24135.8	0.0000	0.4947	ppb	0.89	500.00	
60 Ni	# 2	45	6909.9	0.0000	1.3130	ppb	1.26	500.00	
63 Cu	# 2	45	5706.7	0.0000	0.3707	ppb	3.44	500.00	
66 Zn	# 3	72	61867.6	0.0000	9.5420	ppb	0.85	500.00	
75 As	# 2	72	7733.8	0.0000	3.9590	ppb	0.77	500.00	
78 Se	# 1	72	126.2	0.0000	0.1482	ppb	16.89	500.00	
88 Sr	# 3	72	191900800.0	0.0000	3365.0000	ppb	0.57	500.00	>LRS
90 Zr	# 3	72	2839.3	0.0000	-0.0037	ppb	56.61	50.00	
95 Mo	# 3	115	454864.2	0.0000	48.1500	ppb	1.01	500.00	
107 Ag	# 3	115	220.0	0.0000	0.0058	ppb	19.49	50.00	
111 Cd	# 3	115	-248.2	0.0000	-0.0471	ppb	121.87	500.00	
118 Sn	# 3	115	678.9	0.0000	0.0359	ppb	13.90	500.00	
121 Sb	# 3	115	3140.5	0.0000	0.1318	ppb	1.24	500.00	
137 Ba	# 3	115	380256.7	0.0000	51.7600	ppb	0.96	1000.00	
182 W	# 3	159	38041.7	0.0000	2.1670	ppb	2.01	50.00	
205 Tl	# 3	159	6636.3	0.0000	0.1764	ppb	1.75	500.00	
208 Pb	# 3	159	1969.0	0.0000	0.0231	ppb	10.82	500.00	
235 U	# 3	159	1336.8	0.0000	0.0235	ppb	5.17	30.00	
238 U	# 3	159	170749.9	0.0000	3.1890	ppb	0.53	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1339574.60	0.99	1477556.10	90.7	60 - 125	
45 Sc # 1	2857500.00	1.61	2504048.50	114.1	60 - 125	
45 Sc # 2	698119.63	0.28	599608.94	116.4	60 - 125	
45 Sc # 3	5098630.50	0.80	4320355.00	118.0	60 - 125	
72 Ge # 1	635760.13	0.28	646366.69	98.4	60 - 125	
72 Ge # 2	304199.28	0.67	316482.97	96.1	60 - 125	
72 Ge # 3	1046745.30	0.40	1049262.10	99.8	60 - 125	
115 In # 3	6293763.50	0.63	7320841.50	86.0	60 - 125	
159 Tb # 3	7651391.50	0.40	9222372.00	83.0	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01037.D\F6E01037.D#
Date Acquired: May 18 2017 08:01 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-07
Misc Info:
Vial Number: 2201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	5704906.0	0.0000	405.5000	ppb	1.48	50.00	>LRS
9 Be	# 3	6	183.3	0.0000	0.0304	ppb	17.49	50.00	
11 B	# 3	6	8365256.0	0.0000	2000.0000	ppb	0.41	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	1935737000.0	0.0000	80070.0000	ppb	0.85	50000.00	>LRS
27 Al	# 3	45	122658.5	0.0000	3.7060	ppb	0.97	50000.00	
28 Si	# 1	45	34378100.0	0.0000	14760.0000	ppb	1.44	5000.00	>LRS
31 P	# 3	45	151607.7	0.0000	63.4100	ppb	1.25	500.00	
39 K	# 2	45	21732550.0	0.0000	11380.0000	ppb	0.26	50000.00	
40 Ca	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
47 Ti	# 3	45	10079.3	0.0000	2.8930	ppb	0.99	500.00	
51 V	# 2	45	15242.2	0.0000	0.7265	ppb	1.59	500.00	
52 Cr	# 2	45	5211.4	0.0000	0.0798	ppb	7.19	500.00	
55 Mn	# 3	45	53356768.0	0.0000	885.0000	ppb	0.39	3000.00	
56 Fe	# 1	45	174447010.0	0.0000	7277.0000	ppb	0.56	50000.00	
59 Co	# 3	45	38161.2	0.0000	0.7479	ppb	1.60	500.00	
60 Ni	# 2	45	7180.7	0.0000	1.3400	ppb	0.30	500.00	
63 Cu	# 2	45	5981.2	0.0000	0.3826	ppb	3.19	500.00	
66 Zn	# 3	72	44540.1	0.0000	6.3790	ppb	0.77	500.00	
75 As	# 2	72	9460.9	0.0000	4.6510	ppb	0.75	500.00	
78 Se	# 1	72	367.1	0.0000	0.4399	ppb	7.42	500.00	
88 Sr	# 3	72	211239300.0	0.0000	3467.0000	ppb	0.82	500.00	>LRS
90 Zr	# 3	72	24100.7	0.0000	0.3685	ppb	0.84	50.00	
95 Mo	# 3	115	282030.2	0.0000	27.8200	ppb	0.35	500.00	
107 Ag	# 3	115	300.0	0.0000	0.0082	ppb	10.23	50.00	
111 Cd	# 3	115	-80.9	0.0000	-0.0168	ppb	238.21	500.00	
118 Sn	# 3	115	624.5	0.0000	0.0294	ppb	13.72	500.00	
121 Sb	# 3	115	4081.8	0.0000	0.1629	ppb	1.74	500.00	
137 Ba	# 3	115	711239.1	0.0000	90.2200	ppb	0.72	1000.00	
182 W	# 3	159	2116.9	0.0000	0.1033	ppb	2.49	50.00	
205 Tl	# 3	159	136.7	0.0000	0.0001	ppb	414.62	500.00	
208 Pb	# 3	159	5235.0	0.0000	0.0797	ppb	3.23	500.00	
235 U	# 3	159	7211.1	0.0000	0.1168	ppb	1.92	30.00	
238 U	# 3	159	967268.9	0.0000	16.6100	ppb	0.49	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1423420.10	0.91	1477556.10	96.3	60 - 125	
45 Sc # 1	2929504.80	1.39	2504048.50	117.0	60 - 125	
45 Sc # 2	711252.25	0.76	599608.94	118.6	60 - 125	
45 Sc # 3	5354821.50	0.97	4320355.00	123.9	60 - 125	
72 Ge # 1	650078.50	0.06	646366.69	100.6	60 - 125	
72 Ge # 2	317708.03	0.63	316482.97	100.4	60 - 125	
72 Ge # 3	1118128.40	0.75	1049262.10	106.6	60 - 125	
115 In # 3	6753631.00	0.27	7320841.50	92.3	60 - 125	
159 Tb # 3	8320685.50	0.23	9222372.00	90.2	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01038.D\F6E01038.D#
Date Acquired: May 18 2017 08:06 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-08
Misc Info:
Vial Number: 2202
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	8297737.0	0.0000	805.6000	ppb	1.89	50.00	>LRS
9 Be	# 3	6	51.1	0.0000	0.0102	ppb	10.02	50.00	
11 B	# 3	6	5694984.0	0.0000	1845.0000	ppb	1.76	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	1931692000.0	0.0000	89790.0000	ppb	1.47	50000.00	>LRS
27 Al	# 3	45	78446.8	0.0000	2.6240	ppb	2.65	50000.00	
28 Si	# 1	45	30476130.0	0.0000	15120.0000	ppb	0.39	5000.00	>LRS
31 P	# 3	45	76838.6	0.0000	28.6500	ppb	1.59	500.00	
39 K	# 2	45	35343240.0	0.0000	20420.0000	ppb	0.28	50000.00	
40 Ca	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
47 Ti	# 3	45	10372.9	0.0000	3.3520	ppb	1.20	500.00	
51 V	# 2	45	11386.2	0.0000	0.5143	ppb	2.11	500.00	
52 Cr	# 2	45	4955.3	0.0000	0.0952	ppb	3.26	500.00	
55 Mn	# 3	45	34234008.0	0.0000	638.1000	ppb	1.52	3000.00	
56 Fe	# 1	45	59522288.0	0.0000	2868.0000	ppb	0.26	50000.00	
59 Co	# 3	45	39544.9	0.0000	0.8718	ppb	2.35	500.00	
60 Ni	# 2	45	2592.2	0.0000	0.5175	ppb	2.70	500.00	
63 Cu	# 2	45	4406.5	0.0000	0.3019	ppb	4.11	500.00	
66 Zn	# 3	72	13821.4	0.0000	2.2620	ppb	3.54	500.00	
75 As	# 2	72	898.9	0.0000	0.4392	ppb	3.35	500.00	
78 Se	# 1	72	102.2	0.0000	0.1423	ppb	5.25	500.00	
88 Sr	# 3	72	426549090.0	0.0000	8361.0000	ppb	0.19	500.00	>LRS
90 Zr	# 3	72	4974.4	0.0000	0.0477	ppb	7.82	50.00	
95 Mo	# 3	115	81593.9	0.0000	9.7610	ppb	1.33	500.00	
107 Ag	# 3	115	382.2	0.0000	0.0142	ppb	13.64	50.00	
111 Cd	# 3	115	-150.0	0.0000	-0.0334	ppb	45.48	500.00	
118 Sn	# 3	115	785.6	0.0000	0.0498	ppb	5.45	500.00	
121 Sb	# 3	115	1413.5	0.0000	0.0594	ppb	5.91	500.00	
137 Ba	# 3	115	330611.4	0.0000	50.8800	ppb	0.73	1000.00	
182 W	# 3	159	2448.1	0.0000	0.1494	ppb	2.43	50.00	
205 Tl	# 3	159	141.1	0.0000	0.0009	ppb	73.90	500.00	
208 Pb	# 3	159	1477.9	0.0000	0.0170	ppb	7.96	500.00	
235 U	# 3	159	466.7	0.0000	0.0091	ppb	10.65	30.00	
238 U	# 3	159	58417.6	0.0000	1.2260	ppb	1.05	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	1050475.60	1.07	1477556.10	71.1	60 - 125	
45 Sc # 1	2535573.50	1.08	2504048.50	101.3	60 - 125	
45 Sc # 2	646968.50	0.63	599608.94	107.9	60 - 125	
45 Sc # 3	4765628.50	1.05	4320355.00	110.3	60 - 125	
72 Ge # 1	534870.63	0.29	646366.69	82.8	60 - 125	
72 Ge # 2	272976.19	0.33	316482.97	86.3	60 - 125	
72 Ge # 3	936315.94	0.54	1049262.10	89.2	60 - 125	
115 In # 3	5566715.50	1.25	7320841.50	76.0	60 - 125	
159 Tb # 3	6803225.50	0.51	9222372.00	73.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

Sample QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01039.D\F6E01039.D#
Date Acquired: May 18 2017 08:10 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: E058-09
Misc Info:
Vial Number: 2203
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: Sample
Dilution Factor: 1.00
Autodil Factor: Undiluted
Final Dil Factor: 1.00

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

QC Elements

Element	Tune	ISTD	CPS	Corr Conc	Raw Conc	Units	Conc RSD(%)	High Limit	Flag
7 Li	# 3	6	10663860.0	0.0000	1396.0000	ppb	2.00	50.00	>LRS
9 Be	# 3	6	18.9	0.0000	0.0040	ppb	28.80	50.00	
11 B	# 3	6	6769418.0	0.0000	2947.0000	ppb	0.88	100.00	>LRS
23 Na	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
24 Mg	# 3	45	1413925000.0	0.0000	73130.0000	ppb	1.27	50000.00	>LRS
27 Al	# 3	45	74637.3	0.0000	2.7860	ppb	0.43	50000.00	
28 Si	# 1	45	25849770.0	0.0000	13870.0000	ppb	1.12	5000.00	>LRS
31 P	# 3	45	52582.2	0.0000	17.6900	ppb	1.84	500.00	
39 K	# 2	45	64467960.0	0.0000	40050.0000	ppb	0.55	50000.00	
40 Ca	# 1	45	--------	----	--------	ppb	--------	50000.00	>LRS
47 Ti	# 3	45	10406.2	0.0000	3.7460	ppb	0.95	500.00	
51 V	# 2	45	12699.9	0.0000	0.7056	ppb	1.25	500.00	
52 Cr	# 2	45	5538.8	0.0000	0.1661	ppb	4.65	500.00	
55 Mn	# 3	45	31206300.0	0.0000	647.2000	ppb	0.41	3000.00	
56 Fe	# 1	45	13802920.0	0.0000	719.2000	ppb	0.23	50000.00	
59 Co	# 3	45	38376.1	0.0000	0.9418	ppb	0.77	500.00	
60 Ni	# 2	45	2340.6	0.0000	0.5003	ppb	1.53	500.00	
63 Cu	# 2	45	4977.1	0.0000	0.3746	ppb	1.20	500.00	
66 Zn	# 3	72	12062.0	0.0000	2.2640	ppb	2.18	500.00	
75 As	# 2	72	5813.2	0.0000	3.7570	ppb	1.70	500.00	
78 Se	# 1	72	144.4	0.0000	0.2297	ppb	1.25	500.00	
88 Sr	# 3	72	448436990.0	0.0000	10080.0000	ppb	0.49	500.00	>LRS
90 Zr	# 3	72	4804.3	0.0000	0.0590	ppb	4.71	50.00	
95 Mo	# 3	115	332565.2	0.0000	46.0100	ppb	0.88	500.00	
107 Ag	# 3	115	448.9	0.0000	0.0203	ppb	8.55	50.00	
111 Cd	# 3	115	-53.4	0.0000	-0.0157	ppb	384.53	500.00	
118 Sn	# 3	115	633.4	0.0000	0.0458	ppb	15.76	500.00	
121 Sb	# 3	115	1842.4	0.0000	0.0975	ppb	3.00	500.00	
137 Ba	# 3	115	237617.3	0.0000	42.2700	ppb	0.92	1000.00	
182 W	# 3	159	11684.3	0.0000	0.8632	ppb	2.46	50.00	
205 Tl	# 3	159	151.1	0.0000	0.0020	ppb	12.28	500.00	
208 Pb	# 3	159	1352.3	0.0000	0.0190	ppb	0.46	500.00	
235 U	# 3	159	366.7	0.0000	0.0083	ppb	10.86	30.00	
238 U	# 3	159	40588.7	0.0000	0.9880	ppb	0.78	500.00	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li # 3	781906.00	1.51	1477556.10	52.9	60 - 125	ISFail
45 Sc # 1	2344640.30	1.11	2504048.50	93.6	60 - 125	
45 Sc # 2	603194.56	0.70	599608.94	100.6	60 - 125	
45 Sc # 3	4282641.50	1.23	4320355.00	99.1	60 - 125	
72 Ge # 1	480272.44	0.49	646366.69	74.3	60 - 125	
72 Ge # 2	240675.70	0.98	316482.97	76.0	60 - 125	
72 Ge # 3	816418.19	0.27	1049262.10	77.8	60 - 125	
115 In # 3	4815326.50	0.61	7320841.50	65.8	60 - 125	
159 Tb # 3	5866410.50	0.04	9222372.00	63.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Fail

ICS-A QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01040.D\F6E01040.D#
Date Acquired:	May 18 2017 08:31 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSA3
Misc Info:	
Vial Number:	1303
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICS-A
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	1.00	ppb	92439.7	13.48	---	
9 Be	0.01	ppb	70.0	27.31	---	
11 B	3.74	ppb	15096.7	0.20	---	
23 Na	97890.00	ppb	735470530.0	1.05	120000.00	
24 Mg	90030.00	ppb	1833519000.0	0.90	120000.00	
27 Al	91700.00	ppb	2464126000.0	0.63	120000.00	
28 Si	7.54	ppb	19085.1	2.36	---	
31 P	93200.00	ppb	147466590.0	0.68	---	
39 K	104700.00	ppb	172374900.0	0.62	120000.00	
40 Ca	100400.00	ppb	1497825000.0	0.47	120000.00	
47 Ti	2125.00	ppb	6151280.0	1.66	2400.00	
51 V	0.08	ppb	6009.7	6.13	---	
52 Cr	1.15	ppb	18690.6	1.58	---	
55 Mn	0.18	ppb	12737.0	1.94	---	
56 Fe	98590.00	ppb	2075991000.0	0.96	120000.00	
59 Co	0.23	ppb	10118.3	2.87	---	
60 Ni	0.20	ppb	1013.6	2.05	---	
63 Cu	0.91	ppb	11667.3	3.47	---	
66 Zn	1.86	ppb	14495.4	1.10	---	
75 As	0.12	ppb	406.5	6.56	---	
78 Se	0.05	ppb	50.4	16.01	---	
88 Sr	0.65	ppb	42333.7	0.23	---	
90 Zr	0.01	ppb	4269.7	29.53	---	
95 Mo	2063.00	ppb	23325940.0	0.06	2400.00	
107 Ag	0.02	ppb	637.8	4.75	---	
111 Cd	0.19	ppb	1334.4	34.07	---	
118 Sn	0.02	ppb	580.0	9.56	---	
121 Sb	0.05	ppb	1612.4	5.23	---	
137 Ba	0.10	ppb	946.7	11.29	---	
182 W	0.12	ppb	2976.0	3.85	---	
205 Tl	0.00	ppb	285.6	37.07	---	
208 Pb	0.20	ppb	14015.6	1.72	---	
235 U	0.00	ppb	34.4	48.94	---	
238 U	0.00	ppb	152.2	5.70	---	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1245757.1	1.78	1477556.10	84.3	60 - 125	
45 Sc	2573509.8	2.55	2504048.50	102.8	60 - 125	
45 Sc	618148.9	1.45	599608.94	103.1	60 - 125	
45 Sc	4511068.5	0.32	4320355.00	104.4	60 - 125	
72 Ge	659017.8	1.18	646366.69	102.0	60 - 125	
72 Ge	322901.3	0.10	316482.97	102.0	60 - 125	
72 Ge	1176320.9	1.46	1049262.10	112.1	60 - 125	
115 In	7531688.0	0.36	7320841.50	102.9	60 - 125	
159 Tb	9904214.0	1.31	9222372.00	107.4	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes: Pass
ISTD: Pass

ICS-AB QC Report

Data File:	C:\DATA\IF62017\E\IF6E01.B\F6E01041.D\F6E01041.D#
Date Acquired:	May 18 2017 08:35 pm
Acq. Method:	EM6020R2.M
Operator:	CCapul
Sample Name:	ICSAB3
Misc Info:	
Vial Number:	1304
Current Method:	C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File:	C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update:	May 18 2017 05:53 pm
Sample Type:	ICS-AB
Dilution Factor:	1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	Expected	QC Range(%)	Flag
7 Li	21.15	ppb	311802.0	1.64	20.00	80 - 120	
9 Be	21.04	ppb	96493.2	1.35	20.00	80 - 120	
11 B	21.49	ppb	74147.2	0.77	20.00	80 - 120	
23 Na	96860.00	ppb	713904900.0	2.49	100000.00	80 - 120	
24 Mg	88400.00	ppb	1787694000.0	0.14	100000.00	80 - 120	
27 Al	88640.00	ppb	2364871900.0	0.91	100000.00	80 - 120	
28 Si	214.50	ppb	434210.0	1.37	200.00	80 - 120	
31 P	92310.00	ppb	145023200.0	0.35	100000.00	80 - 120	
39 K	104300.00	ppb	169249200.0	0.56	100000.00	80 - 120	
40 Ca	101300.00	ppb	1483328000.0	1.30	100000.00	80 - 120	
47 Ti	2153.00	ppb	6188352.0	0.51	2000.00	80 - 120	
51 V	19.73	ppb	221999.7	0.79	20.00	80 - 120	
52 Cr	19.85	ppb	263193.6	0.40	20.00	80 - 120	
55 Mn	19.83	ppb	1003422.0	0.28	20.00	80 - 120	
56 Fe	99290.00	ppb	2051450000.0	0.77	100000.00	80 - 120	
59 Co	18.45	ppb	781533.8	0.29	20.00	80 - 120	
60 Ni	18.76	ppb	84662.2	0.11	20.00	80 - 120	
63 Cu	18.23	ppb	220473.9	0.51	20.00	80 - 120	
66 Zn	19.45	ppb	138822.3	0.64	20.00	80 - 120	
75 As	19.92	ppb	39759.4	0.05	20.00	80 - 120	
78 Se	21.29	ppb	17318.1	0.92	20.00	80 - 120	
88 Sr	20.42	ppb	1293716.0	1.08	20.00	80 - 120	
90 Zr	5.45	ppb	324177.4	0.31	20.00	80 - 120	Fail
95 Mo	2053.00	ppb	23318250.0	0.48	2000.00	80 - 120	
107 Ag	18.65	ppb	569537.1	0.85	20.00	80 - 120	
111 Cd	19.71	ppb	135747.2	0.46	20.00	80 - 120	
118 Sn	20.46	ppb	369390.0	0.81	20.00	80 - 120	
121 Sb	20.47	ppb	524787.1	1.77	20.00	80 - 120	
137 Ba	21.15	ppb	186849.2	1.34	20.00	80 - 120	
182 W	18.46	ppb	422472.1	0.63	20.00	80 - 120	
205 Tl	19.17	ppb	925672.3	1.09	20.00	80 - 120	
208 Pb	19.42	ppb	1277059.0	1.32	20.00	80 - 120	
235 U	0.14	ppb	10025.3	0.91	0.14	80 - 120	
238 U	19.51	ppb	1365820.0	0.93	19.86	80 - 120	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1154289.6	1.04	1477556.10	78.1	60 - 125	
45 Sc	2525047.5	2.08	2504048.50	100.8	60 - 125	
45 Sc	608760.7	0.54	599608.94	101.5	60 - 125	
45 Sc	4479143.5	0.49	4320355.00	103.7	60 - 125	
72 Ge	647481.5	1.38	646366.69	100.2	60 - 125	
72 Ge	316005.3	0.36	316482.97	99.8	60 - 125	
72 Ge	1162457.8	1.10	1049262.10	110.8	60 - 125	
115 In	7566429.0	0.66	7320841.50	103.4	60 - 125	
159 Tb	10005088.0	0.71	9222372.00	108.5	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:

Analytes:	Fail
ISTD:	Pass

CCV QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01042.D\F6E01042.D#
Date Acquired: May 18 2017 08:40 pm
Operator: CCapul
Sample Name: CCV4
Misc Info:
Vial Number: 1206
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal Update: May 18 2017 05:53 pm
Sample Type: CCV
Total Dil Factor: 1.00

QC Elements

Element	Conc.	RSD(%)	Expected	QC Range(%)	Flag
7 Li	26.04 ppb	0.05	25.00	90 - 110	
9 Be	26.61 ppb	0.40	25.00	90 - 110	
11 B	51.57 ppb	1.19	50.00	90 - 110	
23 Na	23900.00 ppb	1.91	25000.00	90 - 110	
24 Mg	22750.00 ppb	0.60	25000.00	90 - 110	
27 Al	22900.00 ppb	0.54	25000.00	90 - 110	
28 Si	2620.00 ppb	0.95	2500.00	90 - 110	
31 P	231.10 ppb	0.81	250.00	90 - 110	
39 K	26170.00 ppb	0.44	25000.00	90 - 110	
40 Ca	25000.00 ppb	1.30	25000.00	90 - 110	
47 Ti	250.00 ppb	0.51	250.00	90 - 110	
51 V	251.10 ppb	0.37	250.00	90 - 110	
52 Cr	237.80 ppb	0.41	250.00	90 - 110	
55 Mn	1484.00 ppb	0.11	1500.00	90 - 110	
56 Fe	25270.00 ppb	1.43	25000.00	90 - 110	
59 Co	236.20 ppb	0.96	250.00	90 - 110	
60 Ni	235.90 ppb	1.06	250.00	90 - 110	
63 Cu	225.20 ppb	1.19	250.00	90 - 110	
66 Zn	242.70 ppb	0.19	250.00	90 - 110	
75 As	247.30 ppb	0.22	250.00	90 - 110	
78 Se	248.40 ppb	0.32	250.00	90 - 110	
88 Sr	257.50 ppb	0.67	250.00	90 - 110	
90 Zr	17.36 ppb	0.46	25.00	90 - 110	Fail
95 Mo	257.90 ppb	0.87	250.00	90 - 110	
107 Ag	24.54 ppb	0.39	25.00	90 - 110	
111 Cd	250.90 ppb	0.89	250.00	90 - 110	
118 Sn	260.50 ppb	1.05	250.00	90 - 110	
121 Sb	52.07 ppb	0.80	50.00	90 - 110	
137 Ba	536.90 ppb	0.38	500.00	90 - 110	
182 W	24.23 ppb	0.66	25.00	90 - 110	
205 Tl	243.60 ppb	0.32	250.00	90 - 110	
208 Pb	241.40 ppb	0.82	250.00	90 - 110	
235 U	1.66 ppb	0.19	1.80	90 - 110	
238 U	240.10 ppb	0.42	250.00	90 - 110	

ISTD Elements

Element	CPS Mean	RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1218581.60	0.10	1477556.10	82.5	60 - 125	
45 Sc	2679907.80	1.94	2504048.50	107.0	60 - 125	
45 Sc	615173.56	0.44	599608.94	102.6	60 - 125	
45 Sc	4643318.50	0.58	4320355.00	107.5	60 - 125	
72 Ge	691350.81	0.91	646366.69	107.0	60 - 125	
72 Ge	318976.00	0.47	316482.97	100.8	60 - 125	
72 Ge	1169798.00	0.61	1049262.10	111.5	60 - 125	
115 In	8091553.00	0.69	7320841.50	110.5	60 - 125	
159 Tb	10868517.00	0.27	9222372.00	117.8	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

CCB QC Report

Data File: C:\DATA\IF62017\E\IF6E01.B\F6E01043.D\F6E01043.D#
Date Acquired: May 18 2017 08:44 pm
Acq. Method: EM6020R2.M
Operator: CCapul
Sample Name: CCB4
Misc Info:
Vial Number: 1201
Current Method: C:\ICPCHEM\1\METHODS\EM6020R2.M
Calibration File: C:\DATA\IF62017\A\IF6A01.B\EM6020R2.C
Last Cal. Update: May 18 2017 05:53 pm
Sample Type: CCB
Dilution Factor: 1.00

QC Elements

Element	Conc.		CPS	Conc RSD(%)	High Limit	Flag
7 Li	0.2548	ppb	83148.3	15.74	0.20	Fail
9 Be	0.0026	ppb	23.3	2.01	0.10	
11 B	1.9460	ppb	8488.2	2.92	5.00	
23 Na	150.0000	ppb	1216653.0	1.94	40.00	Fail
24 Mg	1.5030	ppb	34371.8	5.24	10.00	
27 Al	0.4861	ppb	17249.3	10.06	20.00	
28 Si	0.8808	ppb	5534.5	10.99	20.00	
31 P	-0.6064	ppb	27139.6	72.81	10.00	
39 K	14.2400	ppb	189611.5	6.00	20.00	
40 Ca	1.6140	ppb	70441.7	8.87	25.00	
47 Ti	0.0604	ppb	298.9	16.03	0.50	
51 V	-0.0249	ppb	4883.1	21.05	0.50	
52 Cr	-0.1254	ppb	1810.3	1.58	0.20	
55 Mn	-0.0033	ppb	3636.1	177.74	0.20	
56 Fe	4.0770	ppb	92269.1	6.54	10.00	
59 Co	0.0001	ppb	266.7	267.45	0.20	
60 Ni	0.0351	ppb	270.2	13.93	0.20	
63 Cu	0.2320	ppb	3370.4	8.29	0.40	
66 Zn	0.0107	ppb	1243.4	24.21	2.00	
75 As	-0.0037	ppb	166.7	161.96	0.20	
78 Se	0.0360	ppb	40.2	21.01	0.20	
88 Sr	0.0055	ppb	1039.0	12.99	0.20	
90 Zr	-0.0475	ppb	582.3	0.38	2.00	
95 Mo	0.2003	ppb	2773.7	12.03	0.40	
107 Ag	-0.0003	ppb	92.2	55.39	0.20	
111 Cd	-0.0051	ppb	-12.2	56.76	0.20	
118 Sn	0.0513	ppb	1297.9	8.32	0.20	
121 Sb	0.0084	ppb	727.8	18.14	0.40	
137 Ba	0.0095	ppb	220.0	12.32	0.20	
182 W	0.0085	ppb	430.0	34.84	1.00	
205 Tl	0.0119	ppb	837.8	13.38	0.20	
208 Pb	-0.0003	ppb	1182.3	326.25	0.10	
235 U	0.0000	ppb	12.2	500.62	1.00	
238 U	0.0191	ppb	1591.3	6.98	0.10	

ISTD Elements

Element	CPS Mean	CPS RSD(%)	Ref Value	Rec(%)	QC Range(%)	Flag
6 Li	1241862.8	1.12	1477556.10	84.0	60 - 125	
45 Sc	2607959.0	1.43	2504048.50	104.1	60 - 125	
45 Sc	621140.3	0.46	599608.94	103.6	60 - 125	
45 Sc	4628386.0	1.12	4320355.00	107.1	60 - 125	
72 Ge	699120.7	0.54	646366.69	108.2	60 - 125	
72 Ge	328326.2	0.29	316482.97	103.7	60 - 125	
72 Ge	1185872.0	0.53	1049262.10	113.0	60 - 125	
115 In	8979511.0	0.91	7320841.50	122.7	60 - 125	
159 Tb	11402293.0	0.52	9222372.00	123.6	60 - 125	

ISTD Ref File : C:\DATA\IF62017\E\IF6E01.B\F6E01004.D\F6E01004.D#

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

Data Results:
Analytes: Fail
ISTD: Pass

EMAX LABORATORIES, INC.

DIGESTION LOG
for
ICP-MS METALS

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

Comments:

Digestion Vessel Lot # 1501179 - 7A - 5241

all the samples are pH < 2

Book #: EIM-064
Batch: TME0131W
Matrix: Water
Digestor ID: E

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

Start	Temp	End	Temp
	90.8 °C		92.6 °C

Standards	ID	Amount Added (ml/g)
LCS-1	SM6A - 007 - 04 - 06	0.15
LCS-2	↓ - 04 - 07	0.15
MS	same spike soln & vol as LCS 1&2	
Blank Soil (Bead)	NA	NA
Reagent	**Lot# / ID**	**Amount Added (ml)**
HNO_3	SWIA - 006 - 04 - 04	0.5 + 1
HCl	↓ - 03 - 10	0.25 + 0.25
H_2O_2	NA	NA
HNO_3(1:1)	NA	NA
pH Strip (0-14)	HC681919	NA
Digestate Location	Metals	
Extract Location	NA	
☑ Reagent Water ID:	SM5A - 03 - 03 - 20	
☑ Thermometer ID:	150590610/E7	
☑ Pipette ID:	239360316	
☐ Pipette ID:	NA	
☐ Pipette ID:	NA	
☐ HNO_3 dispenser checked @ 5.0 ml with Class A volumetric flask		
☐ HCl dispenser checked @ 5.0 ml with Class A volumetric flask		

Prepared By: SP
Standard Added By: SP Witnessed By: ✓
Extract Rcvd By: ✓ Checked By: ✓

EMAX LABORATORIES, INC.

DIGESTION LOG FOR METALS

PrepBatchID	LabSampleID	Aliquot	Unit	DateTime	Vd(ml)	ExpAmt	ExpVd(ml)	PrepFctr	Comments
17IME013W01	IME013WB	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W02	IME013WL	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W03	IME013WC	50	ml	5/16/17 10:29	50	50	50	1	
17IME013W04	E031-01	50	ml	5/16/17 10:29	50	50	50	1	DISSOLVED
17IME013W05	E031-02	50	ml	5/16/17 10:30	50	50	50	1	DISSOLVED
17IME013W06	E031-03	50	ml	5/16/17 10:30	50	50	50	1	DISSOLVED
17IME013W07	E053-02	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W08	E053-02M	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W09	E053-02S	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W10	E053-03	50	ml	5/16/17 10:31	50	50	50	1	DISSOLVED
17IME013W11	E058-01	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W12	E058-02	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W13	E058-03	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W14	E058-04	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W15	E058-05	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W16	E058-06	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W17	E058-07	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W18	E058-08	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W19	E058-09	50	ml	5/16/17 10:32	50	50	50	1	DISSOLVED
17IME013W20	E071-04	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W21	E075-03	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W22	E075-08	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W23	E075-09	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W24	E075-10	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED
17IME013W25	E075-11	50	ml	5/16/17 10:33	50	50	50	1	DISSOLVED

SP 5/16/17

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

☑ Digestion Started @ 5/16/17 11:50 Prepared By: SPara

☑ Digestion Ended @ 5/16/17 16:51 Checked By: CW

Comments: Date 5/16/17

SOP EMAX-6020 Rev. 9

LABORATORY REPORT FOR

ASSET LABS

PG&E

METHOD E218.6
HEXAVALENT CHROMIUM

SDG#: 17E058

CASE NARRATIVE

Client : ASSET LABS

Project: PG&E

SDG : 17E058

METHOD E218.6
HEXAVALENT CHROMIUM

A total of nine (9) water samples were received on 05/09/17 to be analyzed for Hexavalent Chromium in accordance with Method E218.6 and project specific requirements.

Holding Time
Samples were analyzed within the prescribed holding time.

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

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

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

Matrix QC Sample
Matrix spike sample was prepared and analyzed at a frequency required by the project. For this SDG, one (1) set of MS/MSD, and eight (8) sets of MS were analyzed. Hexavalent Chromium was within MS QC limits in E058-07M/S, E058-01M, -02IM, -03M, -04M, -05M, -06M, -08IM and -09IM. Refer to Matrix QC summary forms for details.

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

Samples E058-02, -08, and -09 were reported from dilution factor, DF=5, due to matrix interference.

SAMPLE RESULTS

METHOD E218.6
HEXAVALENT CHROMIUM

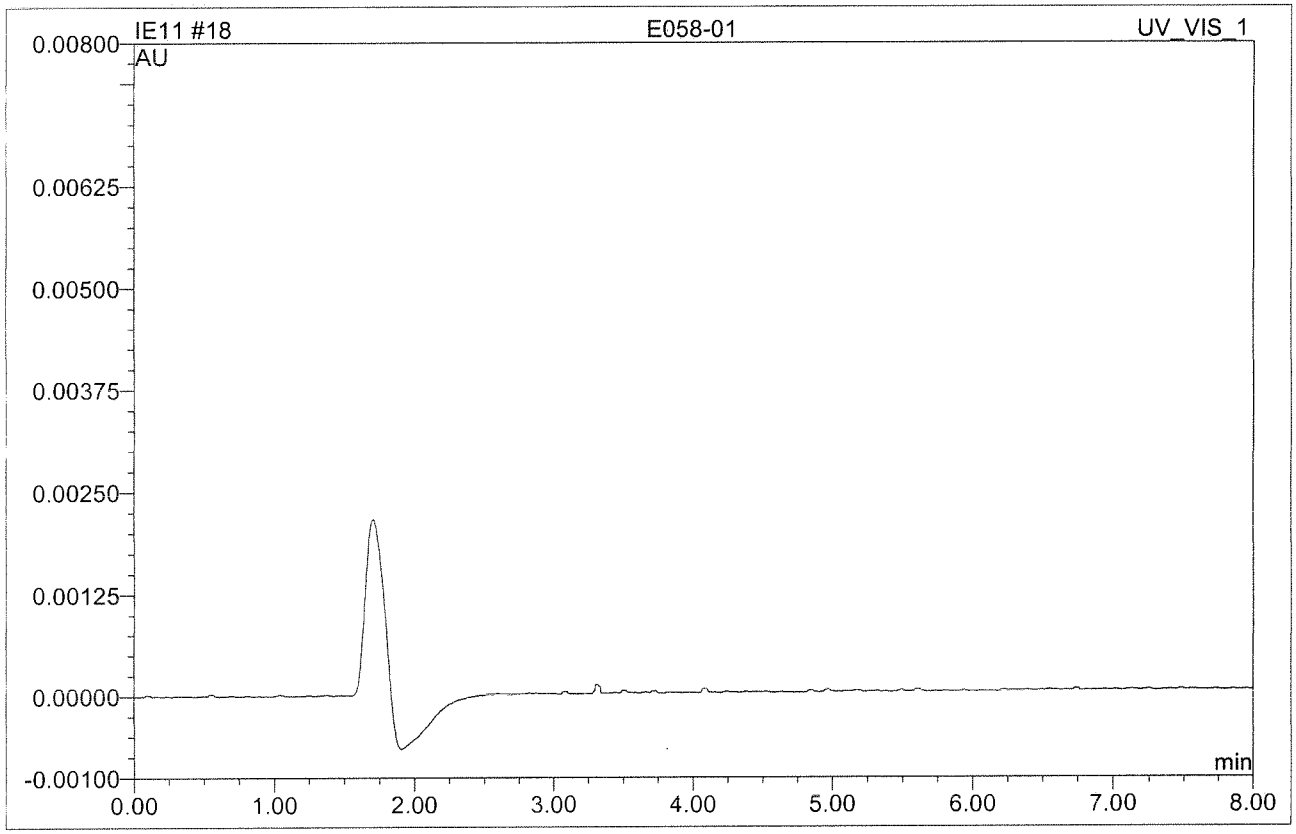
Client : ASSET LABS
Project : PG&E
Batch No. : 17E058

Matrix : WATER
InstrumentID : 59

CLIENT SAMPLE ID	EMAX SAMPLE ID	RESULTS (ug/L)	DIL'N. FACTOR	MOIST (%)	LOQ (ug/L)	LOD (ug/L)	ANALYSIS DATETIME	PREPARATION DATETIME	DATA FILE ID	CAL REF	PREP BATCH	COLLECTION DATETIME	RECEIVED DATETIME
MBLK1W	HCE013WB	ND	1	NA	0.2	0.1	05/11/1710:51	NA	IE11004	IE11002	HCE013W	NA	NA
LCS1W	HCE013WL	2.0	1	NA	0.2	0.1	05/11/1711:01	NA	IE11005	IE11002	HCE013W	NA	NA
LCD1W	HCE013WC	2.1	1	NA	0.2	0.1	05/11/1711:12	NA	IE11006	IE11002	HCE013W	NA	NA
MW-54-195-EB-Q217	E058-01	ND	1	NA	0.2	0.1	05/11/1711:22	NA	IE11007	IE11002	HCE013W	05/04/1707:40	05/09/17
MW-54-140-Q217	E058-03	ND	1	NA	0.2	0.1	05/11/1711:43	NA	IE11009	IE11002	HCE013W	05/04/1708:10	05/09/17
MW-54-140-EB-Q217	E058-04	ND	1	NA	0.2	0.1	05/11/1711:53	NA	IE11010	IE11002	HCE013W	05/04/1708:15	05/09/17
MW-54-085-Q217	E058-05	ND	1	NA	0.2	0.1	05/11/1712:04	NA	IE11011	IE11002	HCE013W	05/04/1708:50	05/09/17
MW-54-085-EB-Q217	E058-06	ND	1	NA	0.2	0.1	05/11/1712:14	NA	IE11012	IE11002	HCE013W	05/04/1708:55	05/09/17
MW-56S-Q217	E058-07	ND	1	NA	0.2	0.1	05/11/1712:25	NA	IE11013	IE11002	HCE013W	05/04/1711:29	05/09/17
MW-54-195-EB-Q217MS	E058-01M	0.99	1	NA	0.2	0.1	05/11/1713:17	NA	IE11018	IE11014	HCE013W	05/04/1707:40	05/09/17
MW-54-140-Q217MS	E058-03M	0.91	1	NA	0.2	0.1	05/11/1713:37	NA	IE11020	IE11014	HCE013W	05/04/1708:10	05/09/17
MW-54-140-EB-Q217MS	E058-04M	1.0	1	NA	0.2	0.1	05/11/1713:48	NA	IE11021	IE11014	HCE013W	05/04/1708:15	05/09/17
MW-54-085-Q217MS	E058-05M	0.99	1	NA	0.2	0.1	05/11/1713:58	NA	IE11022	IE11014	HCE013W	05/04/1708:50	05/09/17
MW-54-085-EB-Q217MS	E058-06M	0.96	1	NA	0.2	0.1	05/11/1714:09	NA	IE11023	IE11014	HCE013W	05/04/1708:55	05/09/17
MW-56S-Q217MS	E058-07M	1.0	1	NA	0.2	0.1	05/11/1714:19	NA	IE11024	IE11014	HCE013W	05/04/1711:29	05/09/17
MW-56S-Q217MSD	E058-07S	1.1	1	NA	0.2	0.1	05/11/1715:11	NA	IE11029	IE11026	HCE013W	05/04/1711:29	05/09/17
MW-54-195-Q217MS	E058-02IM	4.9	5	NA	1	0.5	05/11/1715:21	NA	IE11030	IE11026	HCE013W	05/04/1708:42	05/09/17
MW-56M-Q217MS	E058-08IM	4.9	5	NA	1	0.5	05/11/1715:32	NA	IE11031	IE11026	HCE013W	05/04/1712:04	05/09/17
MW-56D-Q217MS	E058-09IM	5.0	5	NA	1	0.5	05/11/1715:42	NA	IE11032	IE11026	HCE013W	05/04/1711:26	05/09/17
MW-54-195-Q217	E058-02I	ND	5	NA	1	0.5	05/11/1715:53	NA	IE11033	IE11026	HCE013W	05/04/1708:42	05/09/17
MW-56M-Q217	E058-08I	ND	5	NA	1	0.5	05/11/1716:03	NA	IE11034	IE11026	HCE013W	05/04/1712:04	05/09/17
MW-56D-Q217	E058-09I	ND	5	NA	1	0.5	05/11/1716:13	NA	IE11035	IE11026	HCE013W	05/04/1711:26	05/09/17

IE11 007 E058-01

Sample Name:	**E058-01**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 11:22**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

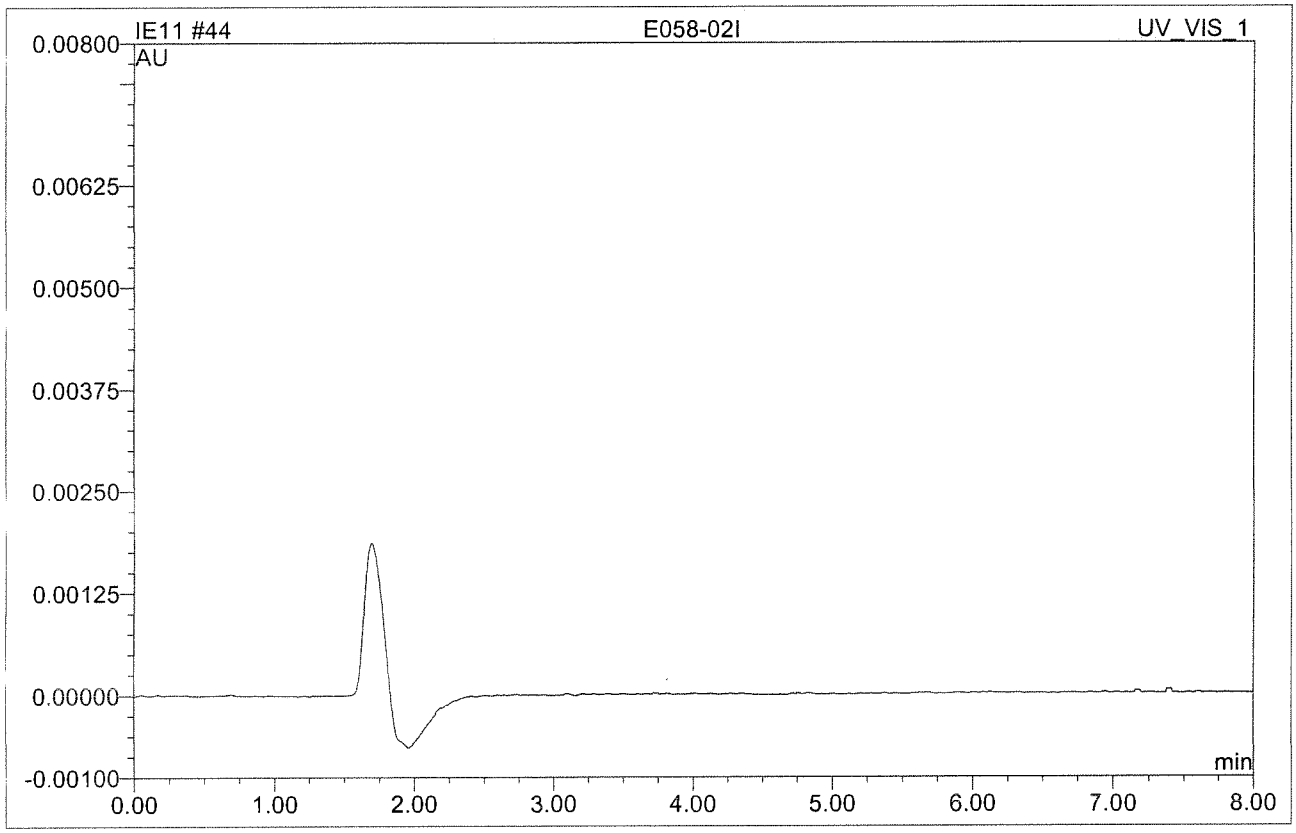


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 033 E058-02I

DF=5

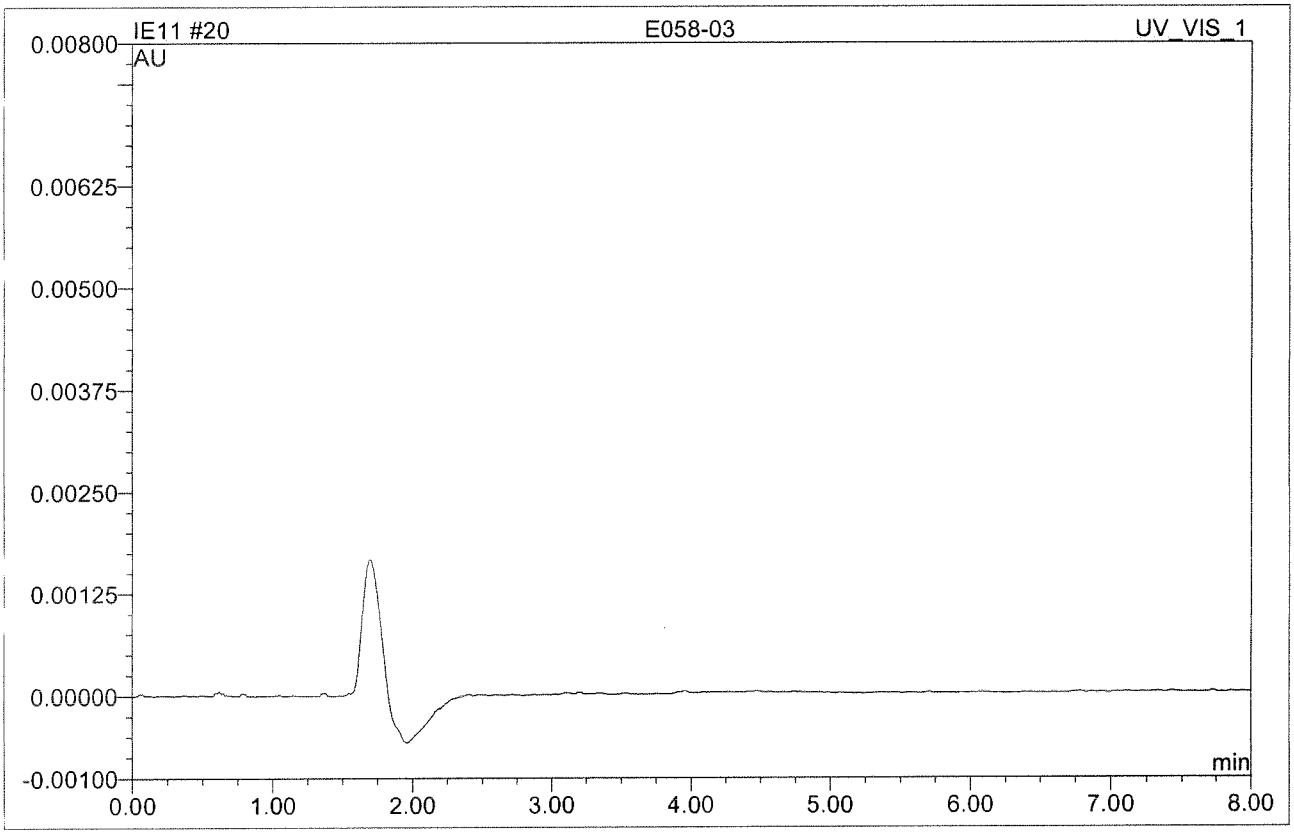
Sample Name:	**E058-02I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**5**
Recording Time:	**5/11/2017 15:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 009 E058-03

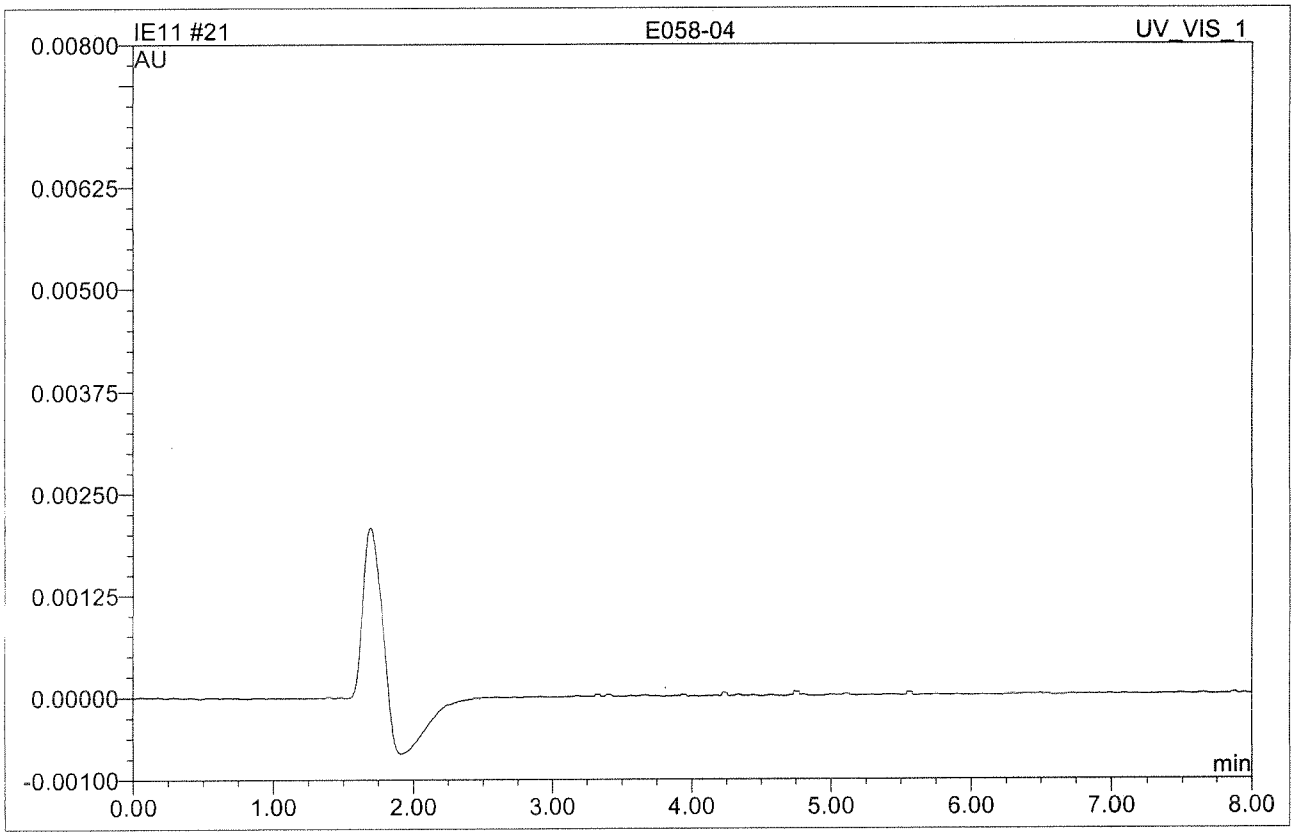
Sample Name:	**E058-03**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 11:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 010 E058-04

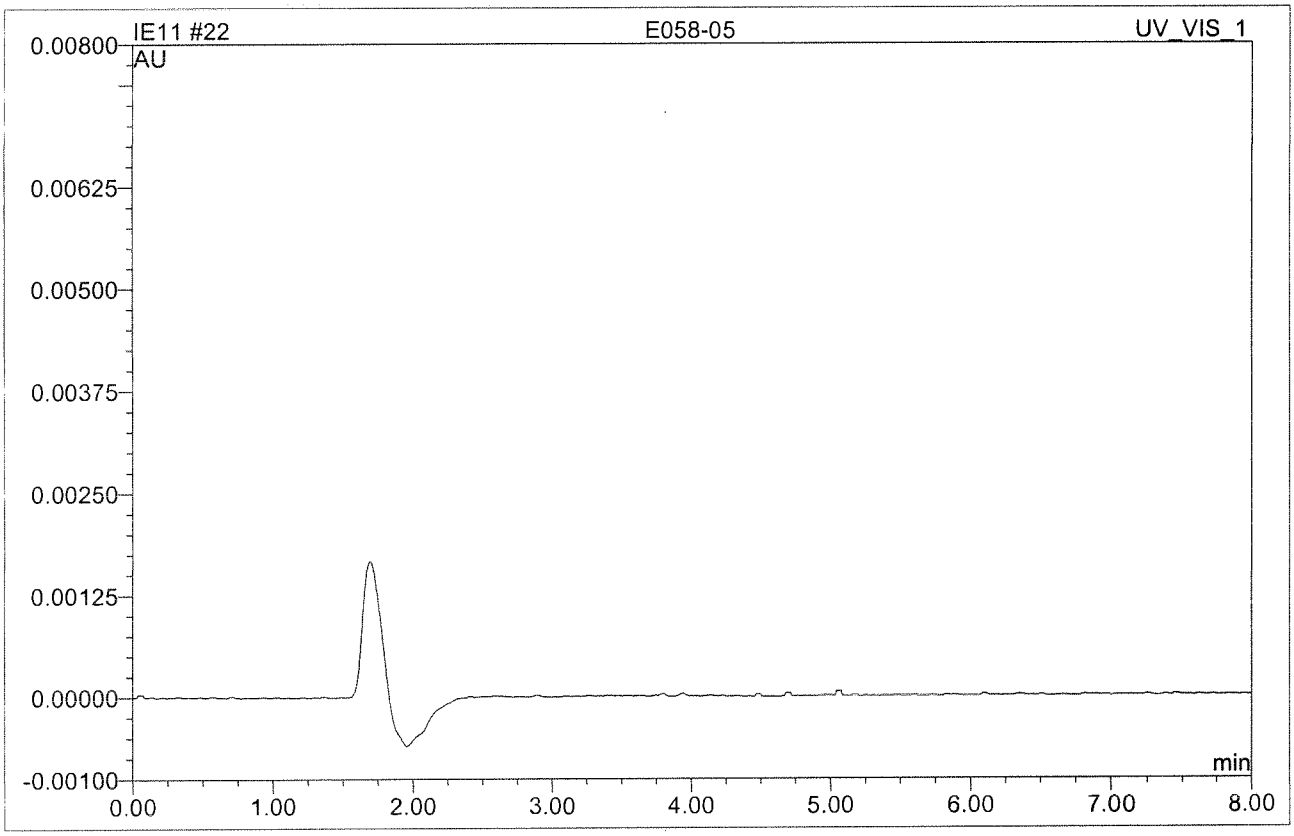
Sample Name:	**E058-04**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 11:53**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 011 E058-05

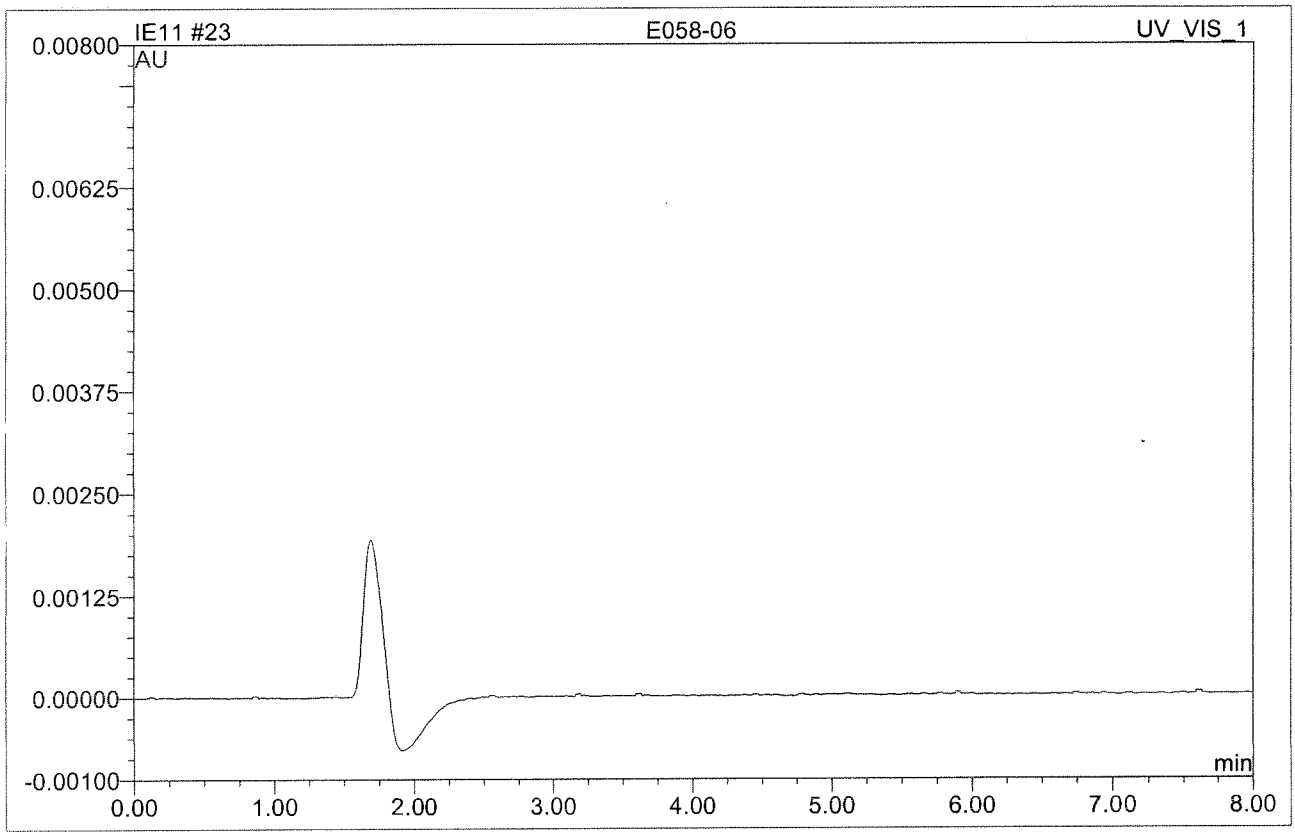
Sample Name:	**E058-05**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 12:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 012 E058-06

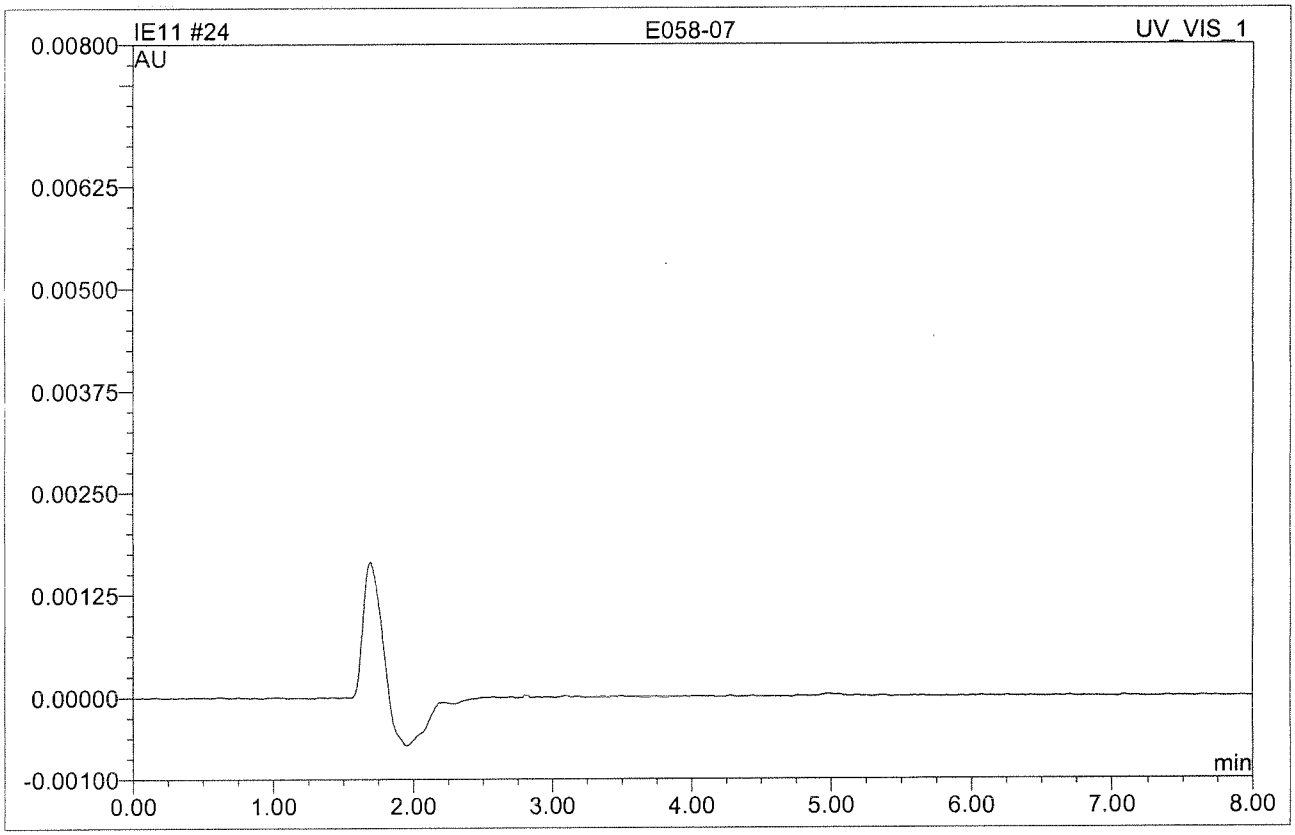
Sample Name:	**E058-06**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 12:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 013 E058-07

Sample Name:	**E058-07**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 12:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

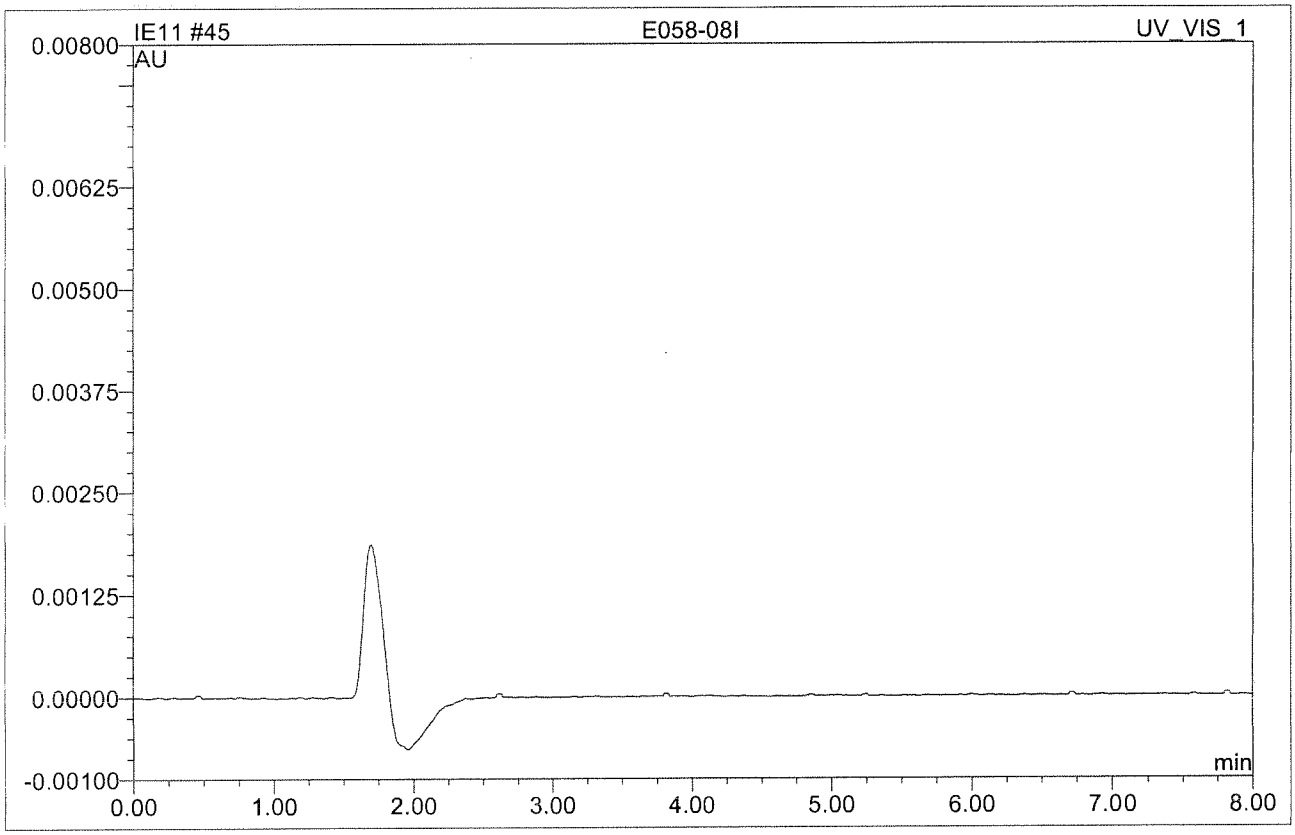


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 034 E058-08I

DF=5

Sample Name:	**E058-08I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**5**
Recording Time:	**5/11/2017 16:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**

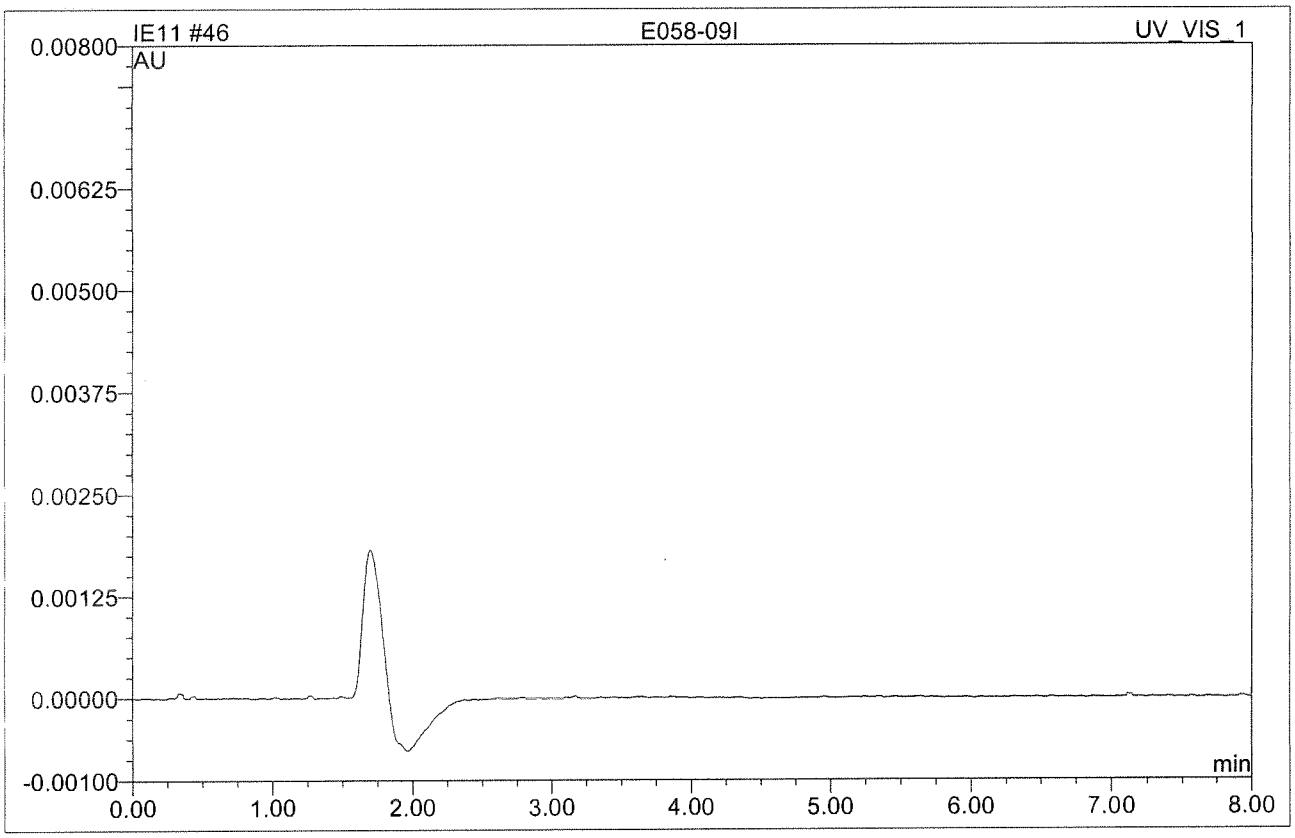


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

IE11 035 E058-09I

DF=5

Sample Name:	**E058-09I**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**5**
Recording Time:	**5/11/2017 16:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

QC SUMMARIES

EMAX QUALITY CONTROL DATA
LAB CONTROL SAMPLE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MBLK1W	LCS1W	LCD1W
LAB SAMPLE ID :	HCE013WB	HCE013WL	HCE013WC
LAB FILE ID :	IE11004	IE11005	IE11006
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	05/11/1710:51	05/11/1711:01	05/11/1711:12
PREP BATCH :	HCE013W	HCE013W	HCE013W
CALIBRATION REF:	IE11002	IE11002	IE11002

ACCESSION:

PARAMETER	MB RESULT (ug/L)	SPIKE AMT (ug/L)	BS RESULT (ug/L)	BS REC (%)	SPIKE AMT (ug/L)	BSD RESULT (ug/L)	BSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	2.0	2.0	100	2.0	2.1	105	5	90-110	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID : MW-54-195-EB-Q217 MW-54-195-EB-Q217MS
LAB SAMPLE ID : E058-01 E058-01M
LAB FILE ID : IE11007 IE11018
DATE PREPARED : NA NA
DATE ANALYZED : 05/11/1711:22 05/11/1713:17
PREP BATCH : HCE013W HCE013W
CALIBRATION REF: IE11002 IE11014

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.0	0.99	99	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 5	5
SAMPLE ID	: MW-54-195-Q217	MW-54-195-Q217MS
LAB SAMPLE ID	: E058-02I	E058-02M
LAB FILE ID	: IE11033	IE11030
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1715:53	05/11/1715:21
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11026	IE11026

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.0	4.9	98	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID : MW-54-140-Q217 MW-54-140-Q217MS
LAB SAMPLE ID : E058-03 E058-03M
LAB FILE ID : IE11009 IE11020
DATE PREPARED : NA NA
DATE ANALYZED : 05/11/1711:43 05/11/1713:37
PREP BATCH : HCE013W HCE013W
CALIBRATION REF: IE11002 IE11014

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.0	0.91	91	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

==========

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-54-140-EB-Q217	MW-54-140-EB-Q217MS
LAB SAMPLE ID	: E058-04	E058-04M
LAB FILE ID	: IE11010	IE11021
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1711:53	05/11/1713:48
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11002	IE11014

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.0	1.0	100	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX	: WATER	% MOISTURE: NA
DILUTION FACTOR	: 1	1
SAMPLE ID	: MW-54-085-Q217	MW-54-085-Q217MS
LAB SAMPLE ID	: E058-05	E058-05M
LAB FILE ID	: IE11011	IE11022
DATE PREPARED	: NA	NA
DATE ANALYZED	: 05/11/1712:04	05/11/1713:58
PREP BATCH	: HCE013W	HCE013W
CALIBRATION REF	: IE11002	IE11014

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.0	0.99	99	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 1 1
SAMPLE ID : MW-54-085-EB-Q217 MW-54-085-EB-Q217MS
LAB SAMPLE ID : E058-06 E058-06M
LAB FILE ID : IE11012 IE11023
DATE PREPARED : NA NA
DATE ANALYZED : 05/11/1712:14 05/11/1714:09
PREP BATCH : HCE013W HCE013W
CALIBRATION REF: IE11002 IE11014

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	1.0	0.96	96	90-110

EMAX QUALITY CONTROL DATA
MS/MSD ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA

DILUTION FACTOR:	1	1	1
SAMPLE ID :	MW-56S-Q217	MW-56S-Q217MS	MW-56S-Q217MSD
LAB SAMPLE ID :	E058-07	E058-07M	E058-07S
LAB FILE ID :	IE11013	IE11024	IE11029
DATE PREPARED :	NA	NA	NA
DATE ANALYZED :	05/11/1712:25	05/11/1714:19	05/11/1715:11
PREP BATCH :	HCE013W	HCE013W	HCE013W
CALIBRATION REF:	IE11026	IE11026	IE11026

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	SPIKE AMT (ug/L)	MSD RESULT (ug/L)	MSD REC (%)	RPD (%)	QC LIMIT (%)	MAX RPD (%)
HEXAVALENT CHROMIUM	ND	1.0	1.0	100	1.0	1.1	110	10	90-110	20

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 5 5
SAMPLE ID : MW-56M-Q217 MW-56M-Q217MS
LAB SAMPLE ID : E058-08I E058-08M
LAB FILE ID : IE11034 IE11031
DATE PREPARED : NA NA
DATE ANALYZED : 05/11/1716:03 05/11/1715:32
PREP BATCH : HCE013W HCE013W
CALIBRATION REF: IE11026 IE11026

ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.0	4.9	98	90-110

EMAX QUALITY CONTROL DATA
MATRIX SPIKE ANALYSIS

CLIENT : ASSET LABS
PROJECT : PG&E
BATCH NO. : 17E058
METHOD : E218.6

MATRIX : WATER % MOISTURE: NA
DILUTION FACTOR: 5 5
SAMPLE ID : MW-56D-Q217 MW-56D-Q217MS
LAB SAMPLE ID : E058-09I E058-09M
LAB FILE ID : IE11035 IE11032
DATE PREPARED : NA NA
DATE ANALYZED : 05/11/1716:13 05/11/1715:42
PREP BATCH : HCE013W HCE013W
CALIBRATION REF: IE11026 IE11026

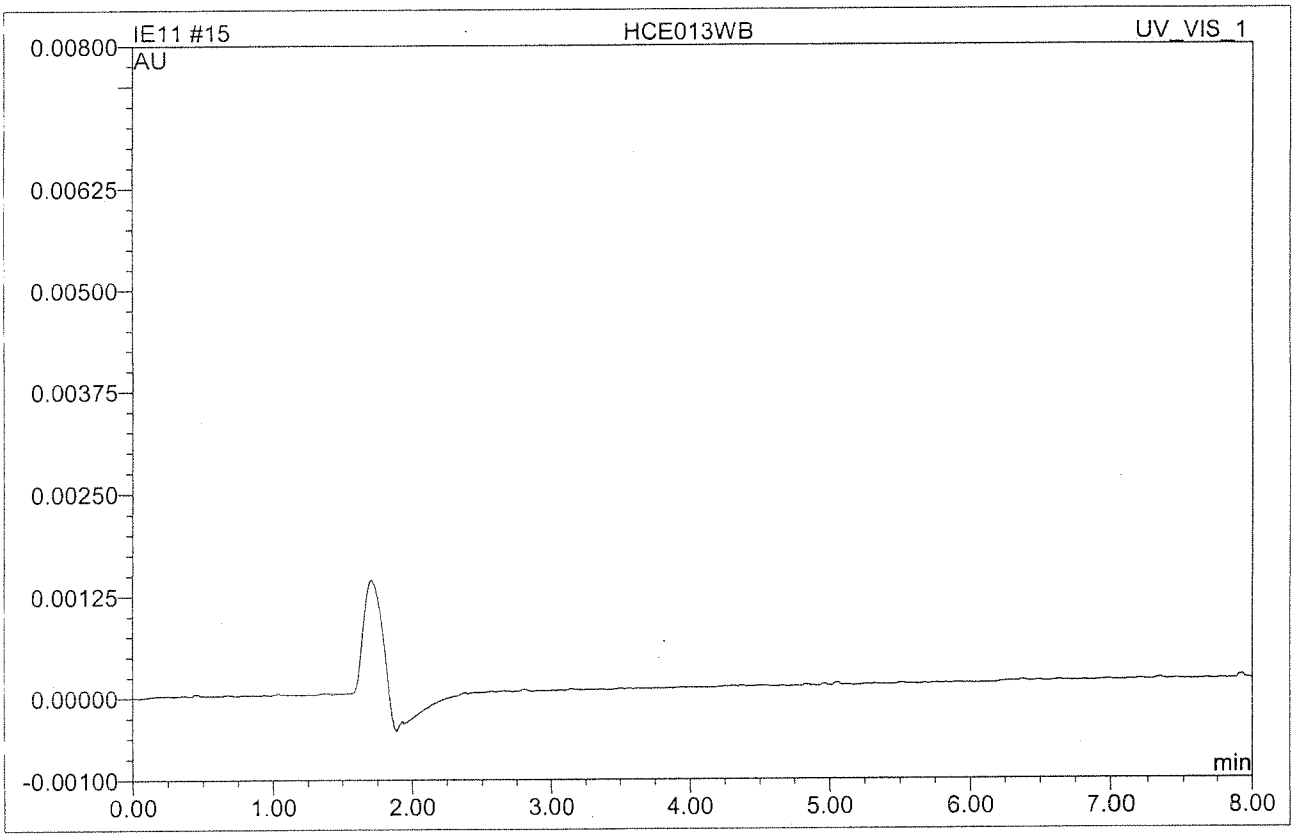
ACCESSION:

PARAMETER	PARENT RESULT (ug/L)	SPIKE AMT (ug/L)	MS RESULT (ug/L)	MS REC (%)	QC LIMIT (%)
HEXAVALENT CHROMIUM	ND	5.0	5.0	100	90-110

QC DATA

IE11 004 HCE013WB

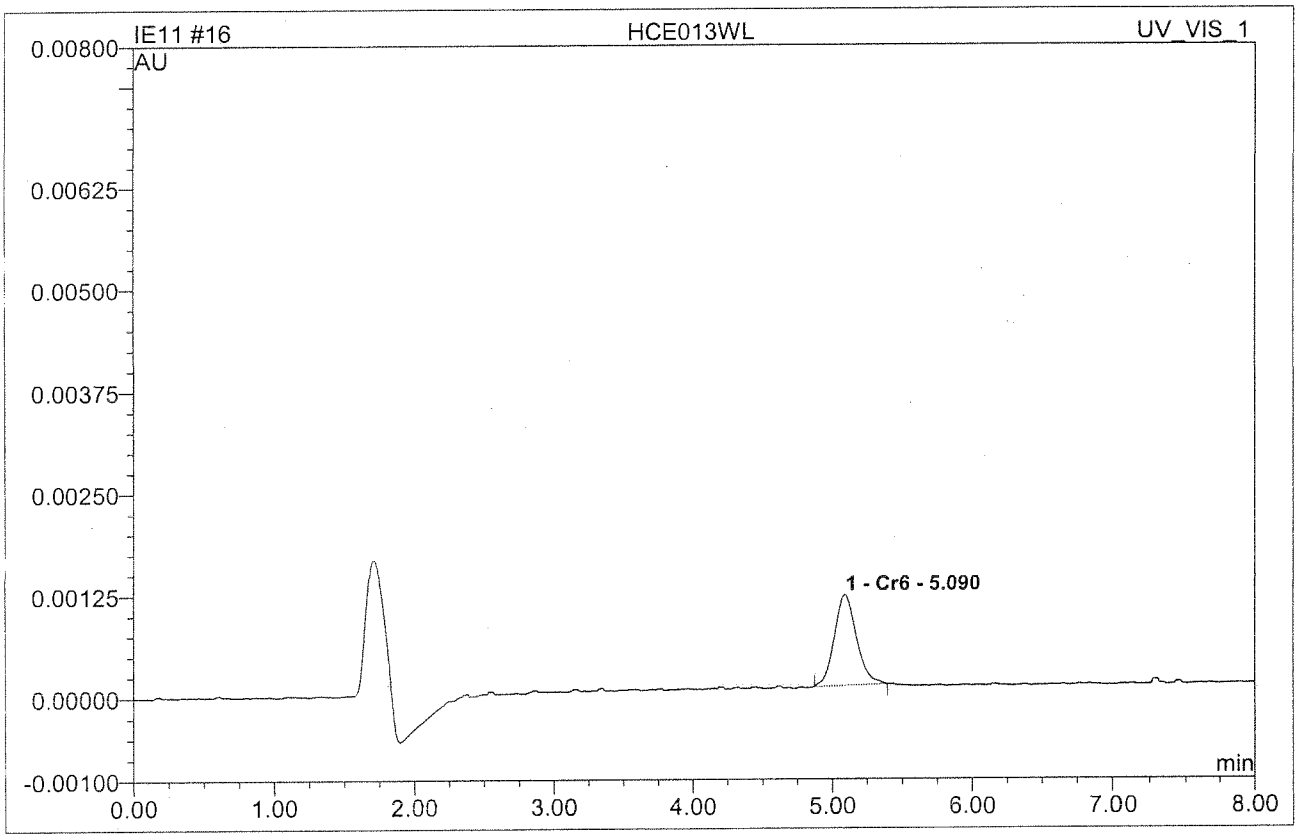
Sample Name:	**HCE013WB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 10:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 005 HCE013WL

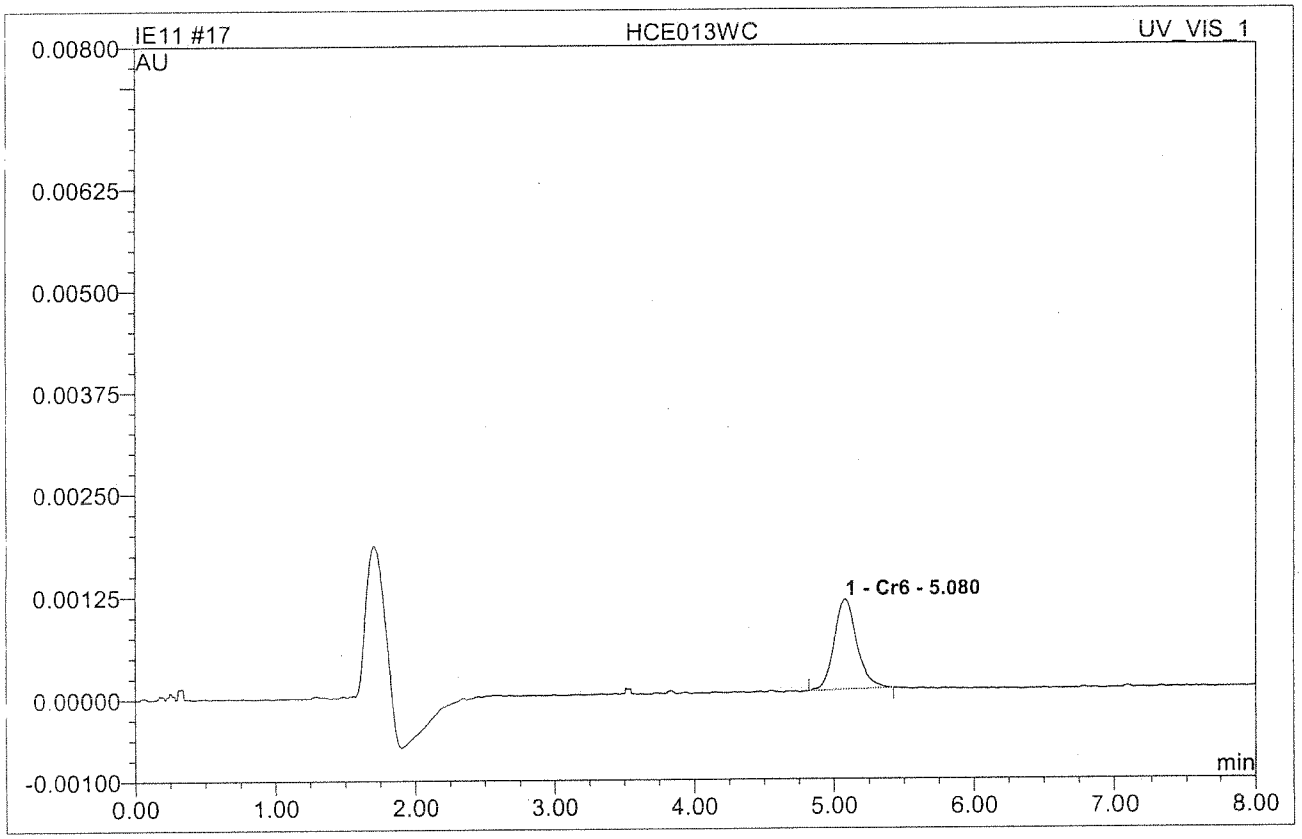
Sample Name:	**HCE013WL**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 11:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.09	Cr6	0.0011140	0.0002042	100.00	2.042	BMB
Total:			0.001	0.000	100.00	2.042	

IE11 006 HCE013WC

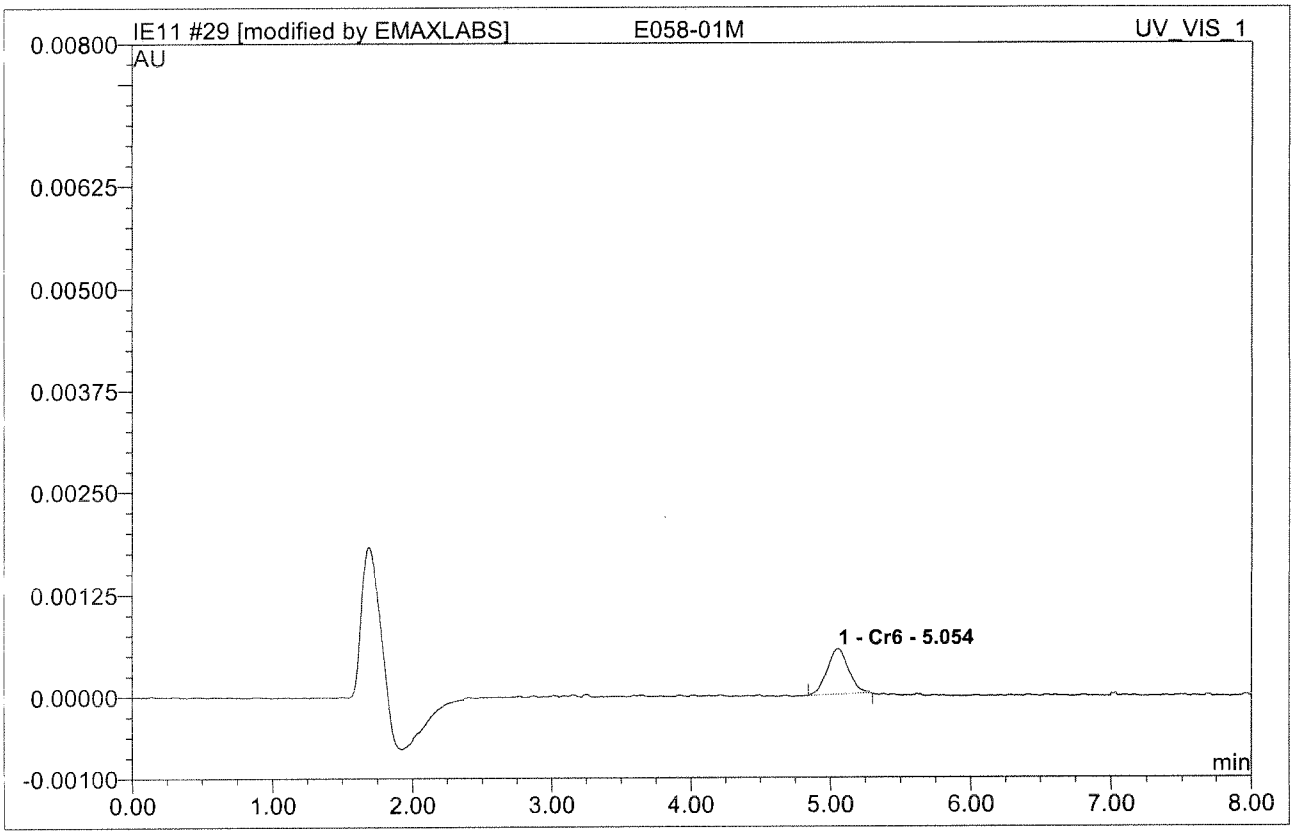
Sample Name:	**HCE013WC**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 11:12**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.08	Cr6	0.0011010	0.0002071	100.00	2.071	BMB
Total:			0.001	0.000	100.00	2.071	

IE11 018 E058-01M

Sample Name:	**E058-01M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 13:17**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**

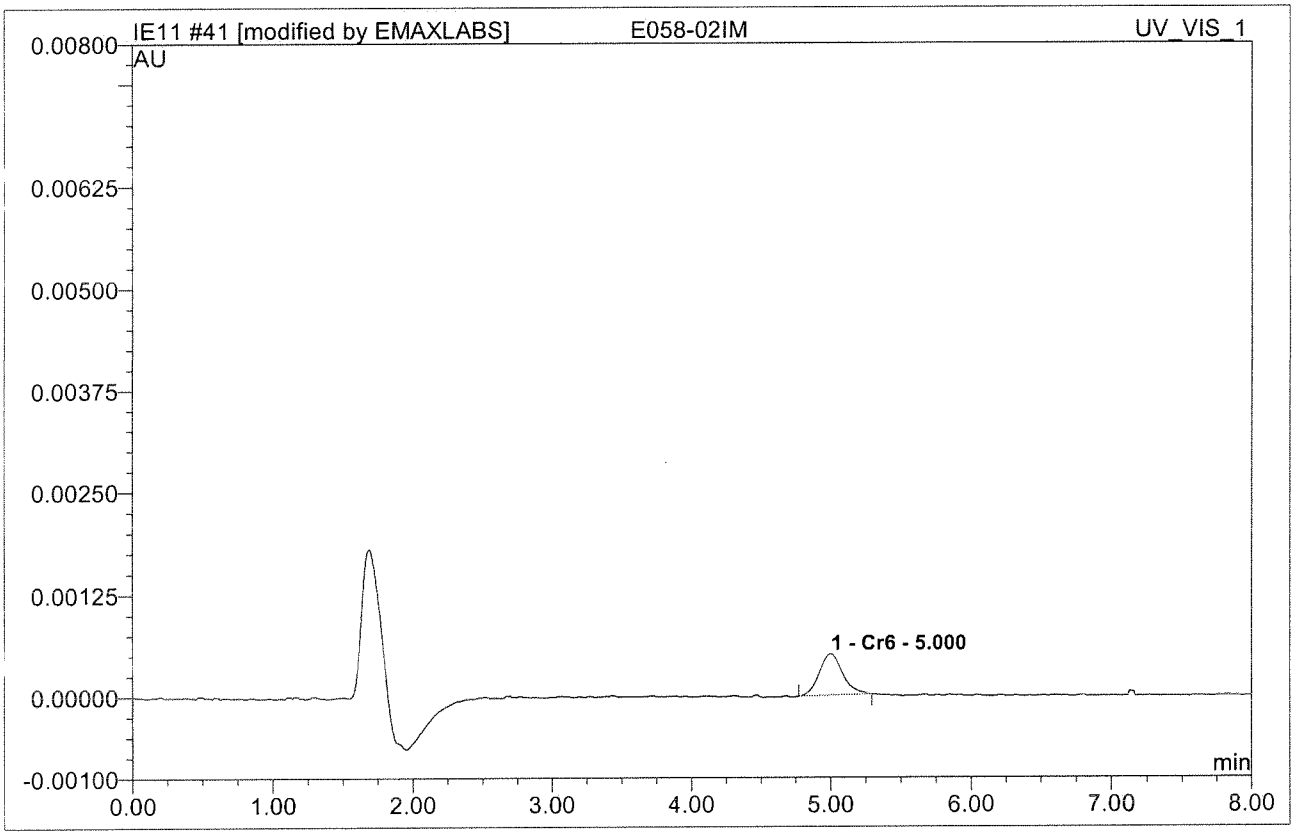


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0005590	0.0000979	100.00	0.990	BMB*
Total:			0.001	0.000	100.00	0.990	

IE11 030 E058-02IM

DF=5

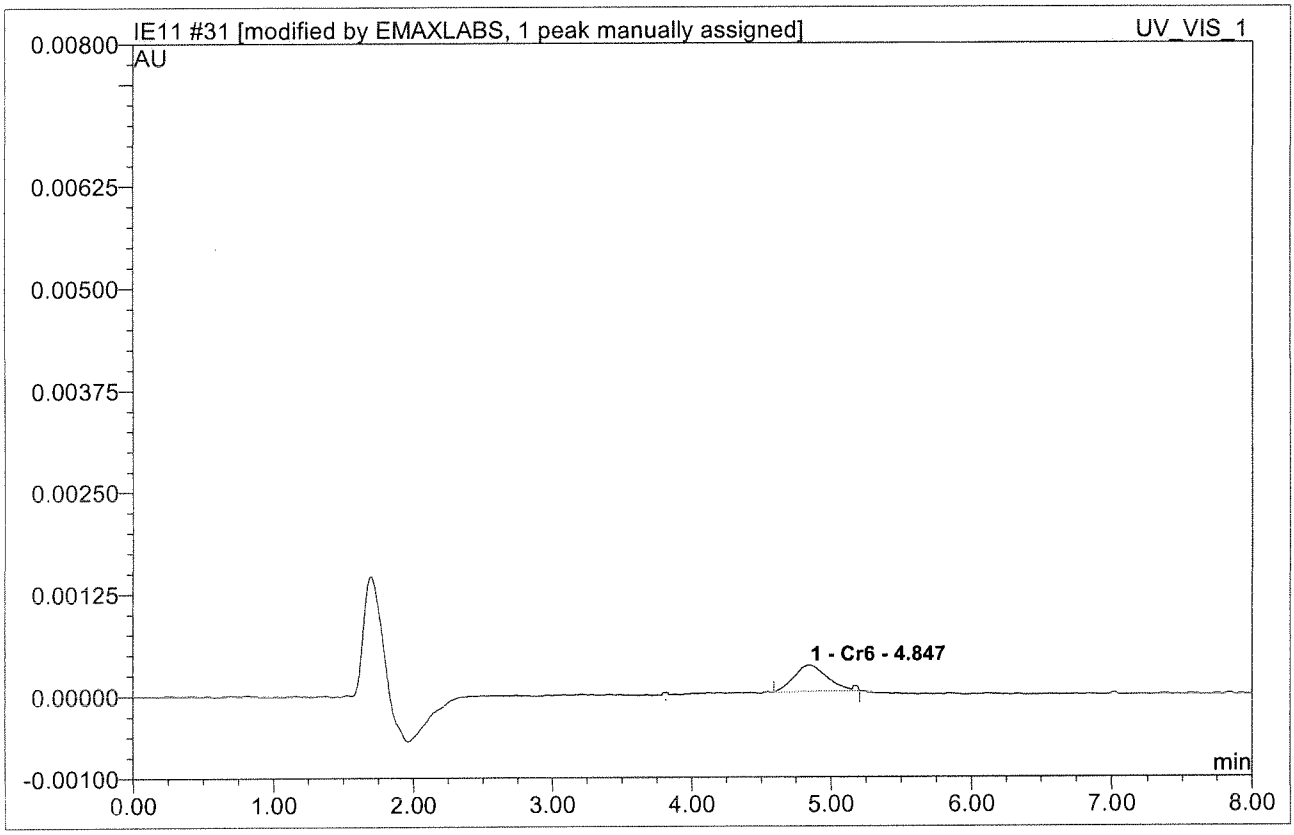
Sample Name:	**E058-02IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**5**
Recording Time:	**5/11/2017 15:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.89**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.00	Cr6	0.0005080	0.0000979	100.00	4.947	BMB*
Total:			0.001	0.000	100.00	4.947	

IE11 020 E058-03M

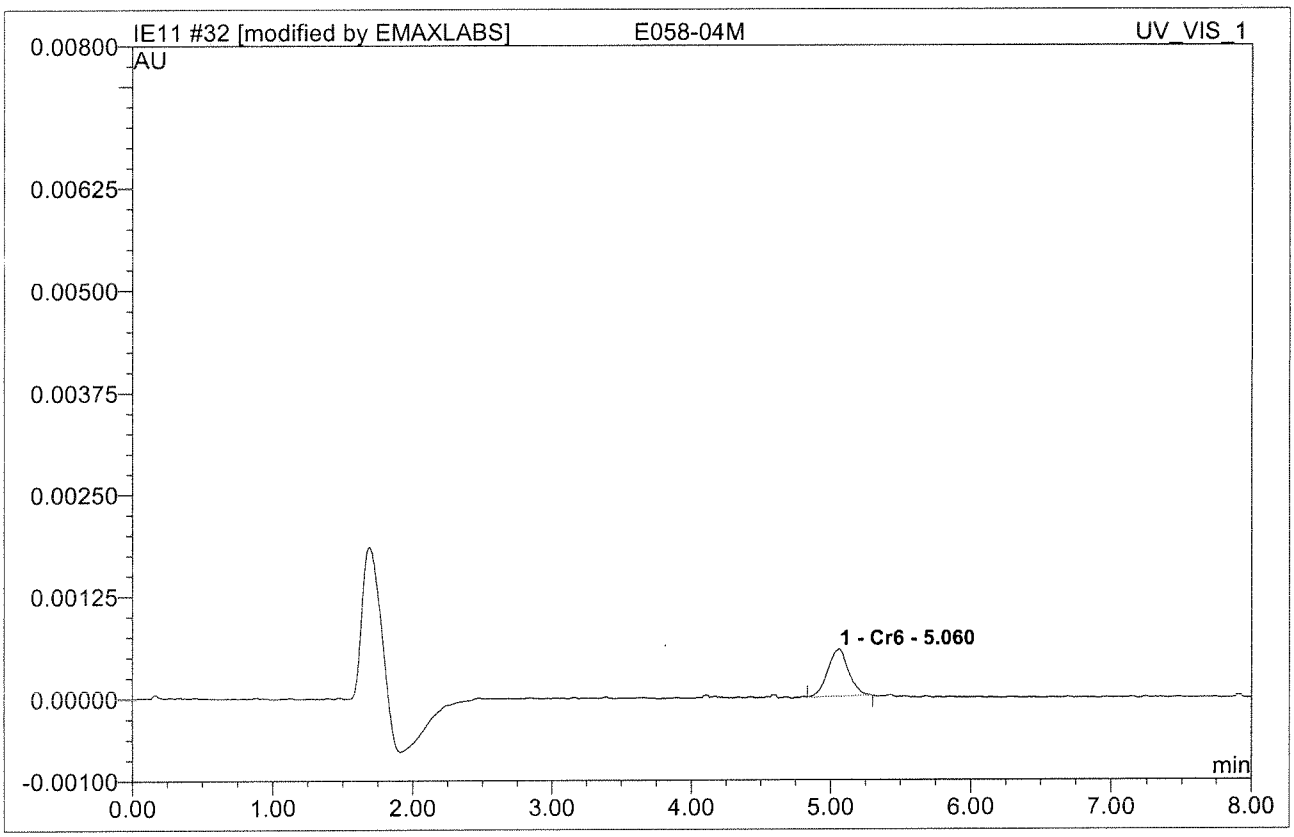
Sample Name:	**E058-03M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 13:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.85	Cr6	0.0003260	0.0000902	100.00	0.913	BMB*^
Total:			0.000	0.000	100.00	0.913	

IE11 021 E058-04M

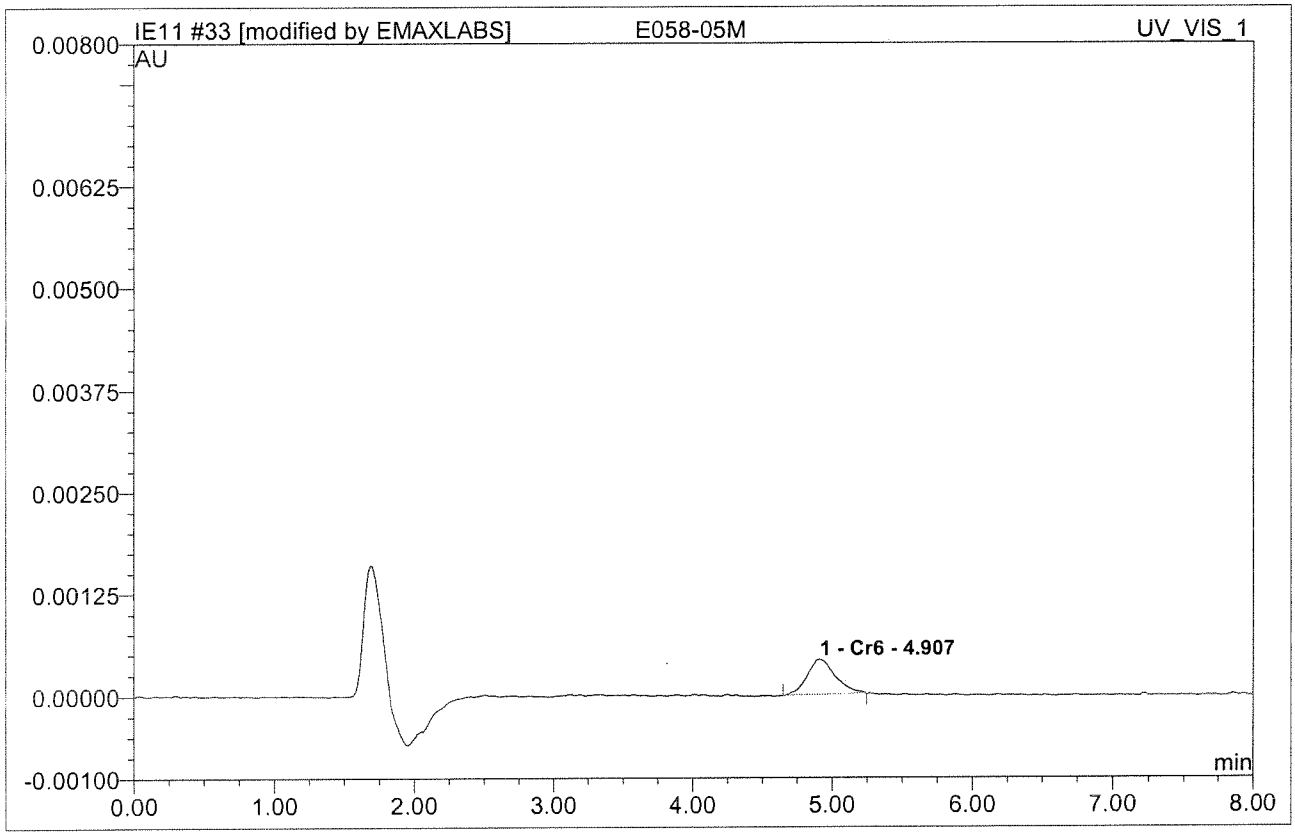
Sample Name:	**E058-04M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 13:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.89**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0005800	0.0000991	100.00	1.002	BMB*
Total:			0.001	0.000	100.00	1.002	

IE11 022 E058-05M

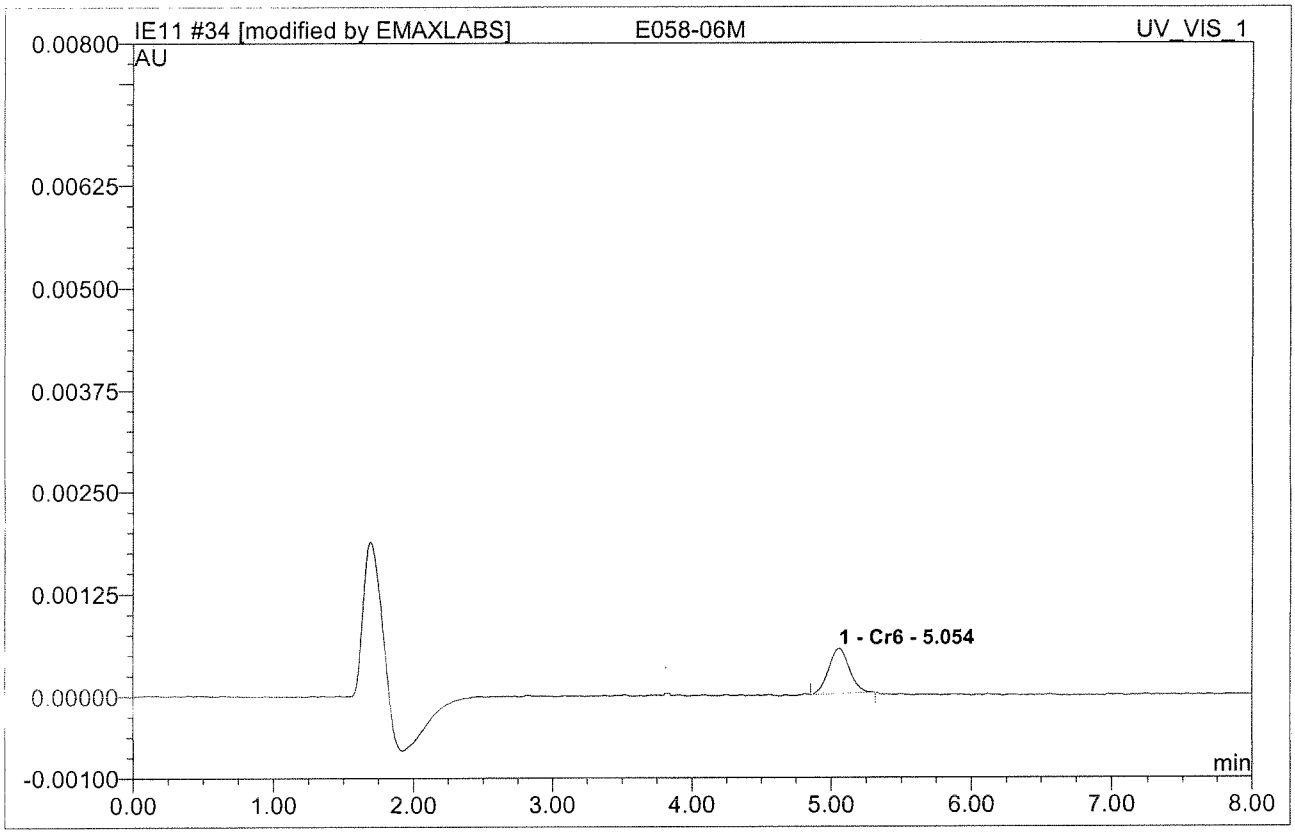
Sample Name:	**E058-05M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 13:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.91	Cr6	0.0004280	0.0000981	100.00	0.992	BMB*
Total:			0.000	0.000	100.00	0.992	

IE11 023 E058-06M

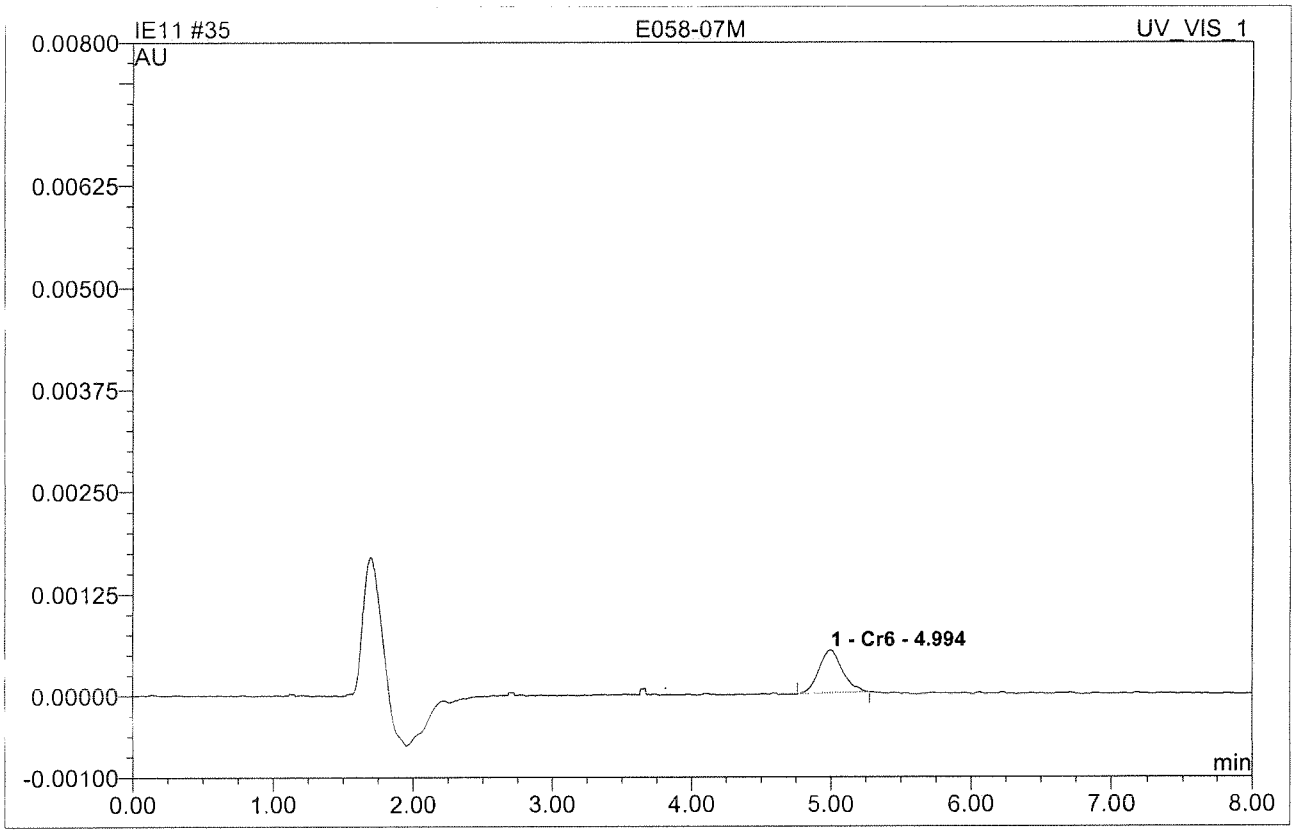
Sample Name:	**E058-06M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 14:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0005550	0.0000951	100.00	0.962	BMB*
Total:			0.001	0.000	100.00	0.962	

IE11 024 E058-07M

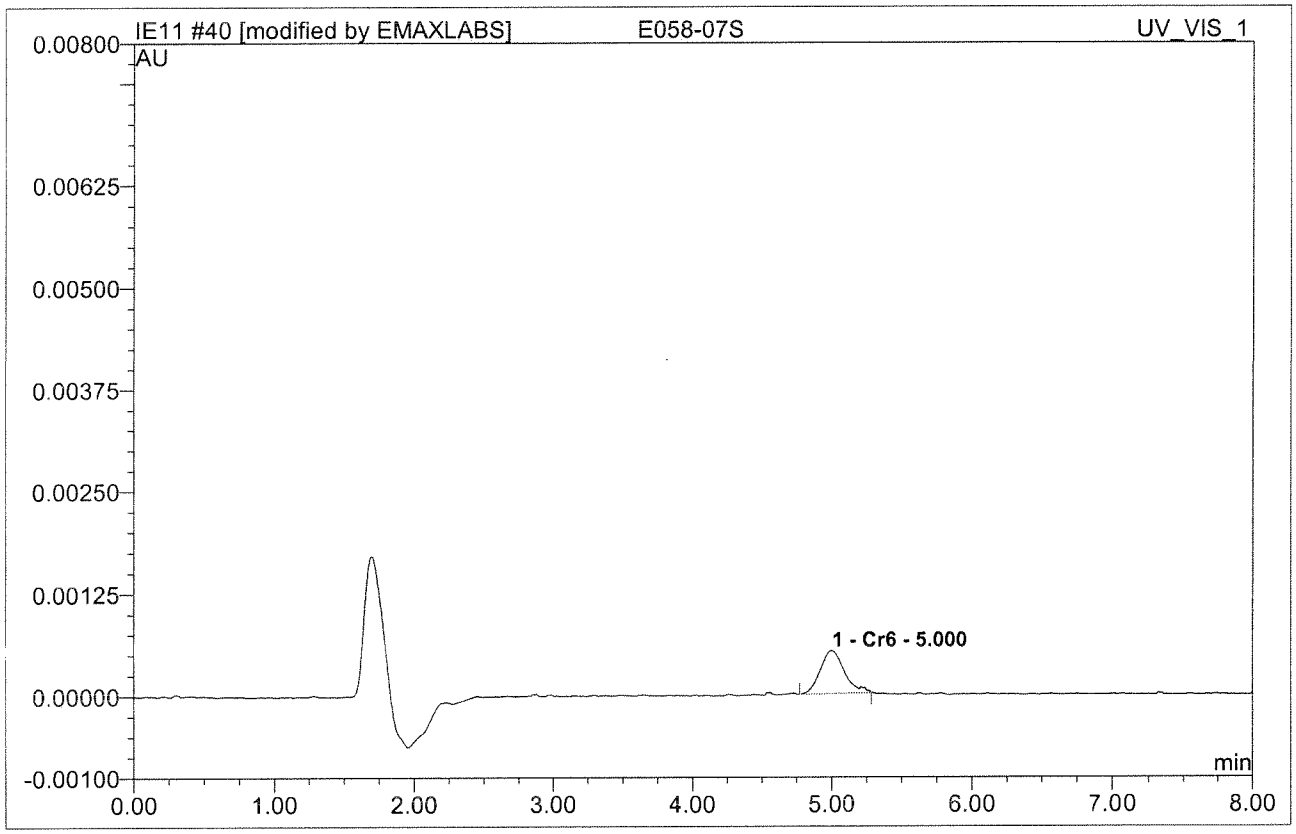
Sample Name:	**E058-07M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 14:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.99	Cr6	0.0005280	0.0001027	100.00	1.037	BMB
Total:			0.001	0.000	100.00	1.037	

IE11 029 E058-07S

Sample Name:	**E058-07S**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 15:11**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**

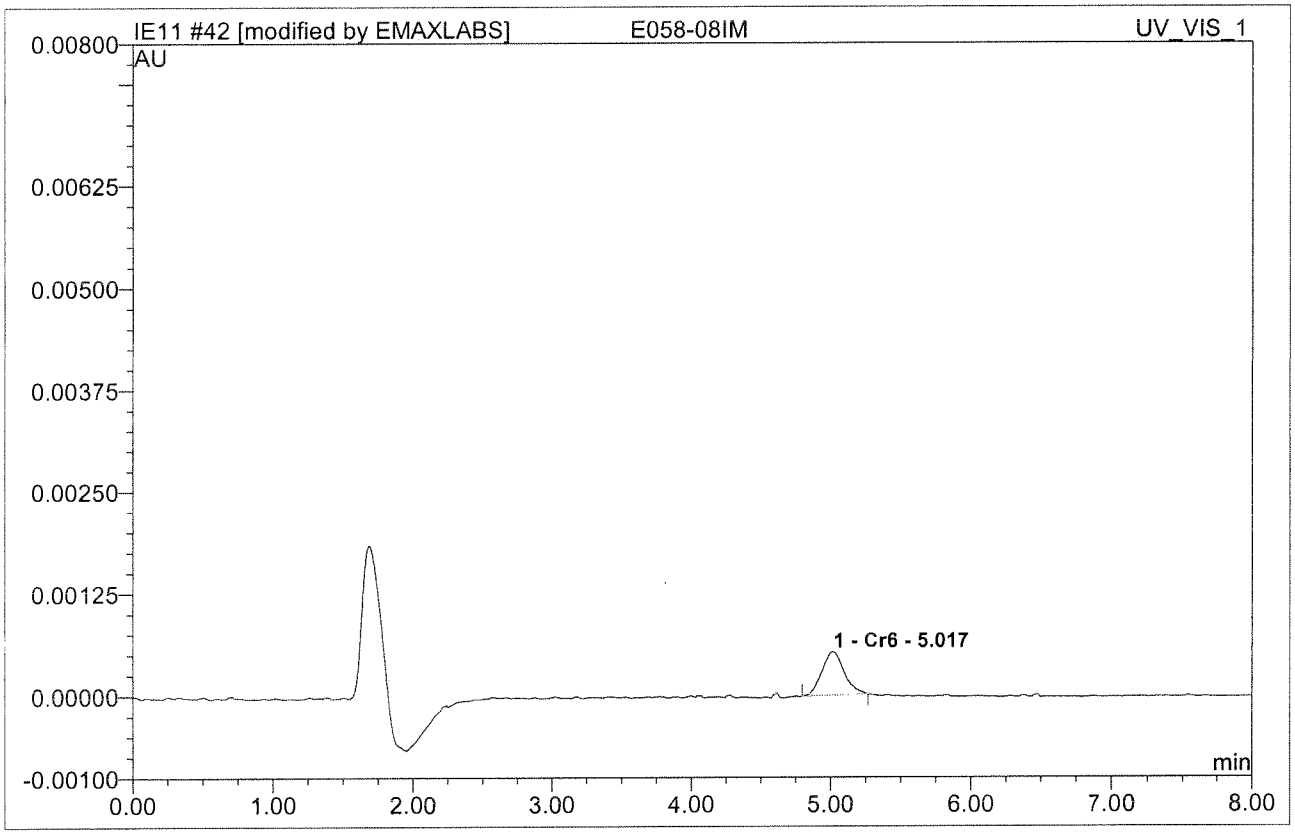


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.00	Cr6	0.0005270	0.0001058	100.00	1.068	BMB*
Total:			0.001	0.000	100.00	1.068	

IE11 031 E058-08IM

DF=5

Sample Name:	**E058-08IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**5**
Recording Time:	**5/11/2017 15:32**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**

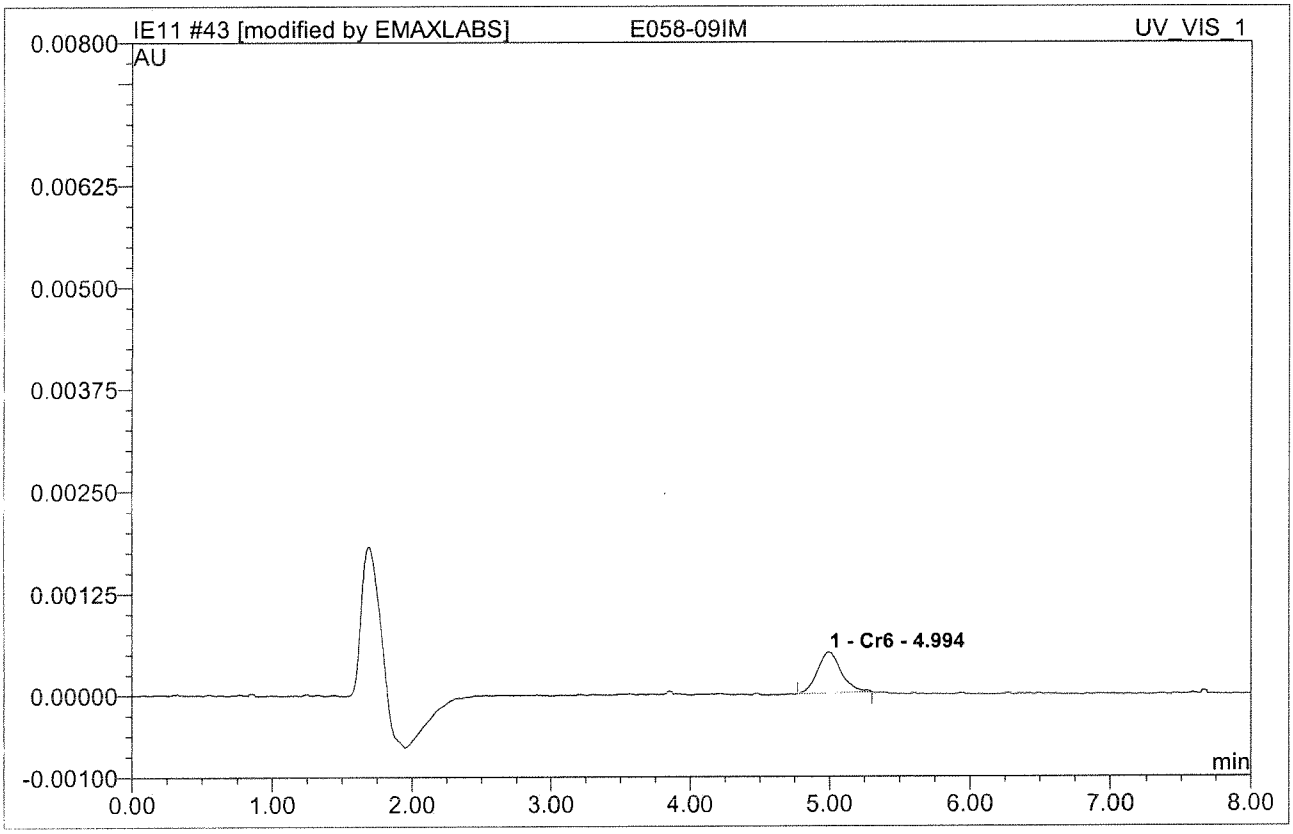


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.02	Cr6	0.0005310	0.0000969	100.00	4.898	BMB*
Total:			0.001	0.000	100.00	4.898	

IE11 032 E058-09IM

DF=5

Sample Name:	**E058-09IM**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**5**
Recording Time:	**5/11/2017 15:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.99	Cr6	0.0005060	0.0000995	100.00	5.026	BMB*
Total:			0.001	0.000	100.00	5.026	

INITIAL CALIBRATIONS

IC RESULT FORM CalVersion : CR6.E08/IE08 (2017)

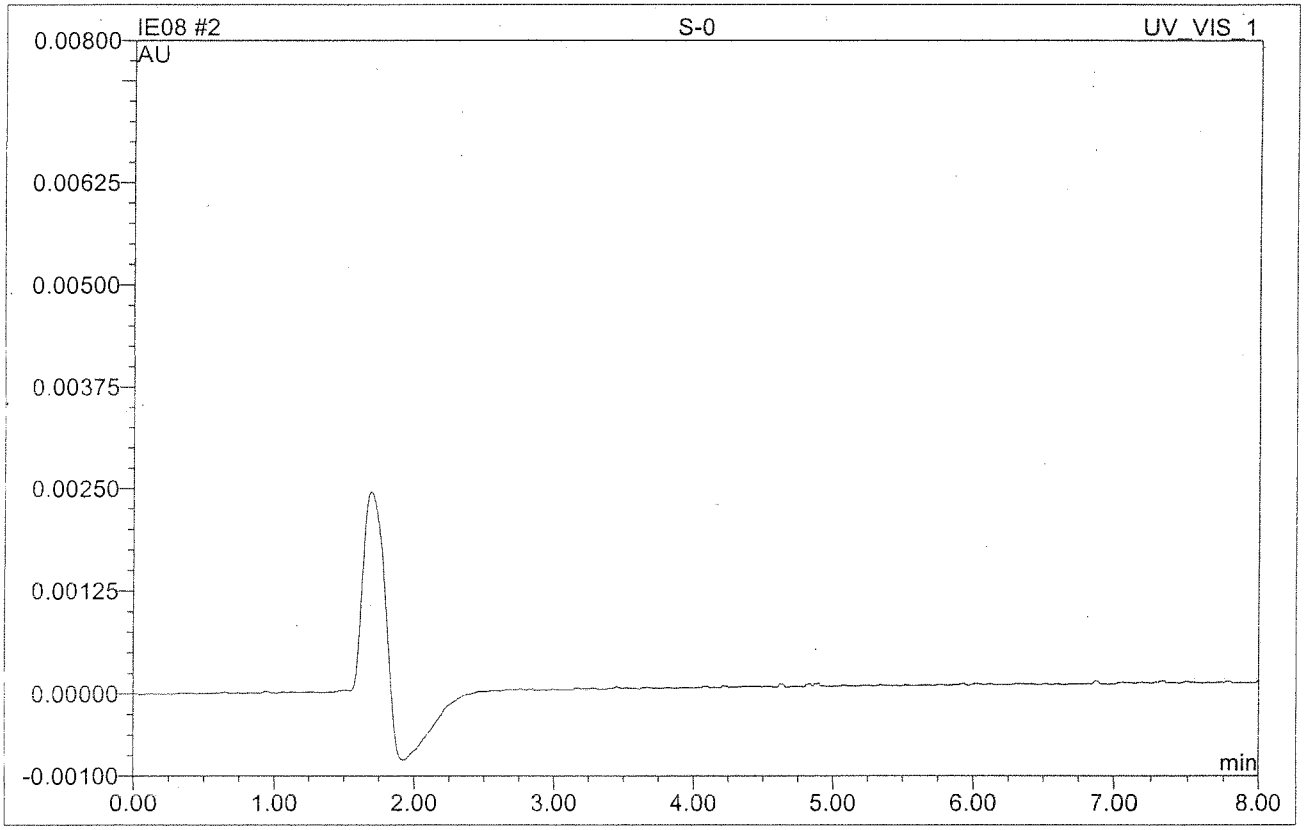
LFID	LSID	SelCmp	Cr6	DateTime	DF
IE08001	IB	C	ND	05/08/1711:55	1
IE08002	S-0	C	ND	05/08/1712:06	1
IE08003	S-1	C	0.200	05/08/1712:16	1
IE08004	S-2	C	0.499	05/08/1712:26	1
IE08005	S-3	C	0.994	05/08/1712:37	1
IE08006	S-4	C	1.985	05/08/1712:47	1
IE08007	S-5	C	4.987	05/08/1712:58	1
IE08008	S-6	C	7.519	05/08/1713:08	1
IE08009	S-7	C	9.996	05/08/1713:18	1
IE08010	ICV	C	99%	05/08/1713:29	1
IE08011	ICB	C	ND	05/08/1713:39	1

METHOD: IC59E08
SOLVENT: BUFFER (SW4-03-37-02)

5-9-17

IE08_002 S-0

Sample Name:	**S-0**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



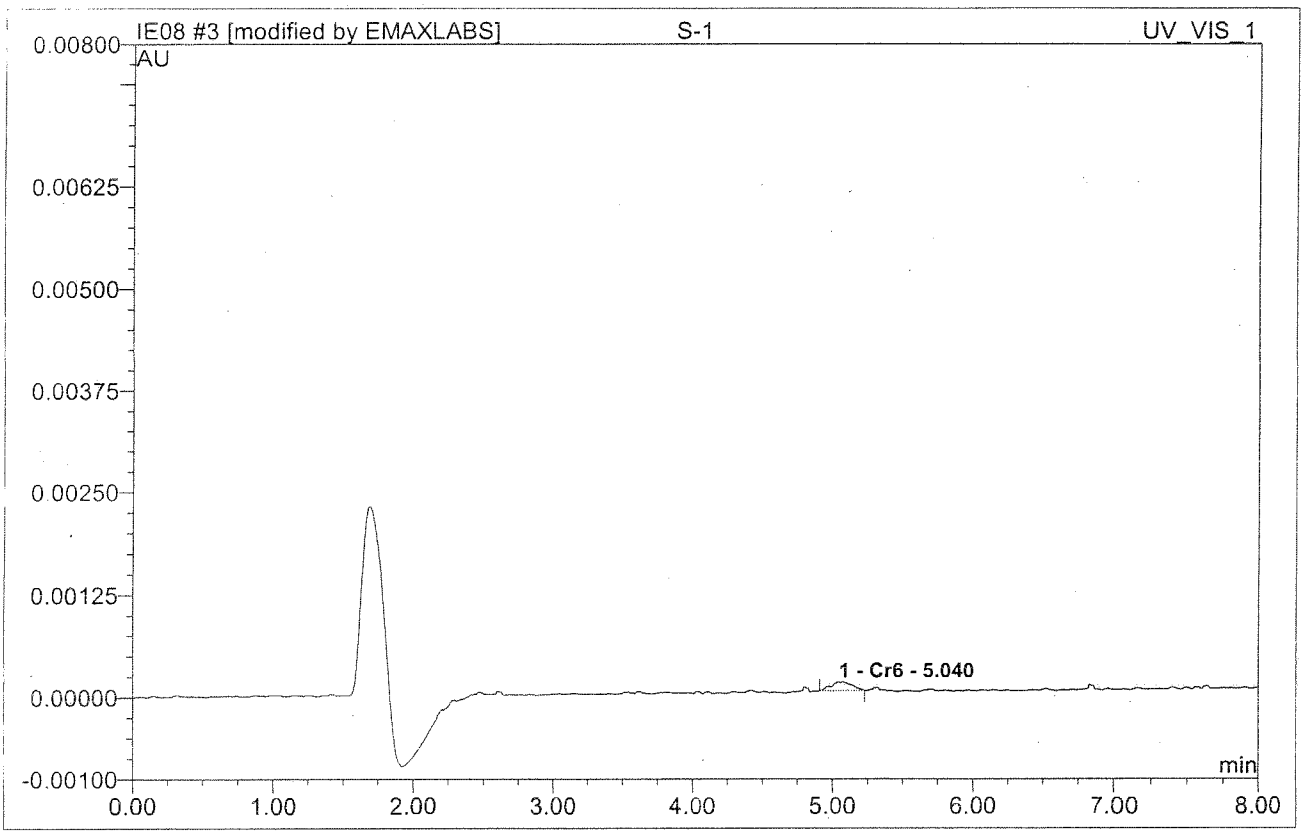
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

5-9-17

IE08 003 S-1

0.2 PPB

Sample Name:	**S-1**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:16**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



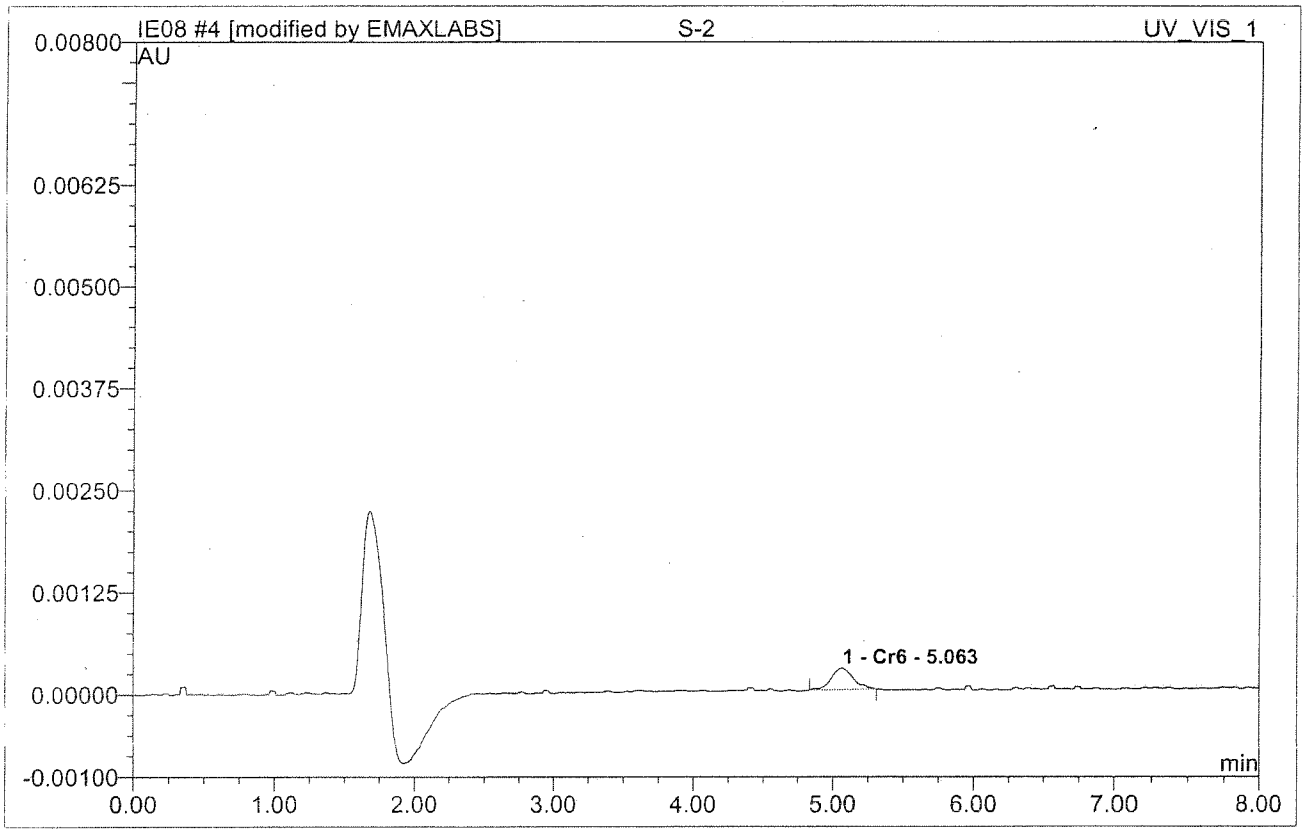
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.04	Cr6	0.0001100	0.0000182	100.00	0.200	BMB*
Total:			0.000	0.000	100.00	0.200	

5-9-17

IE08 004 S-2

0.5 PPB

Sample Name:	**S-2**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:26**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



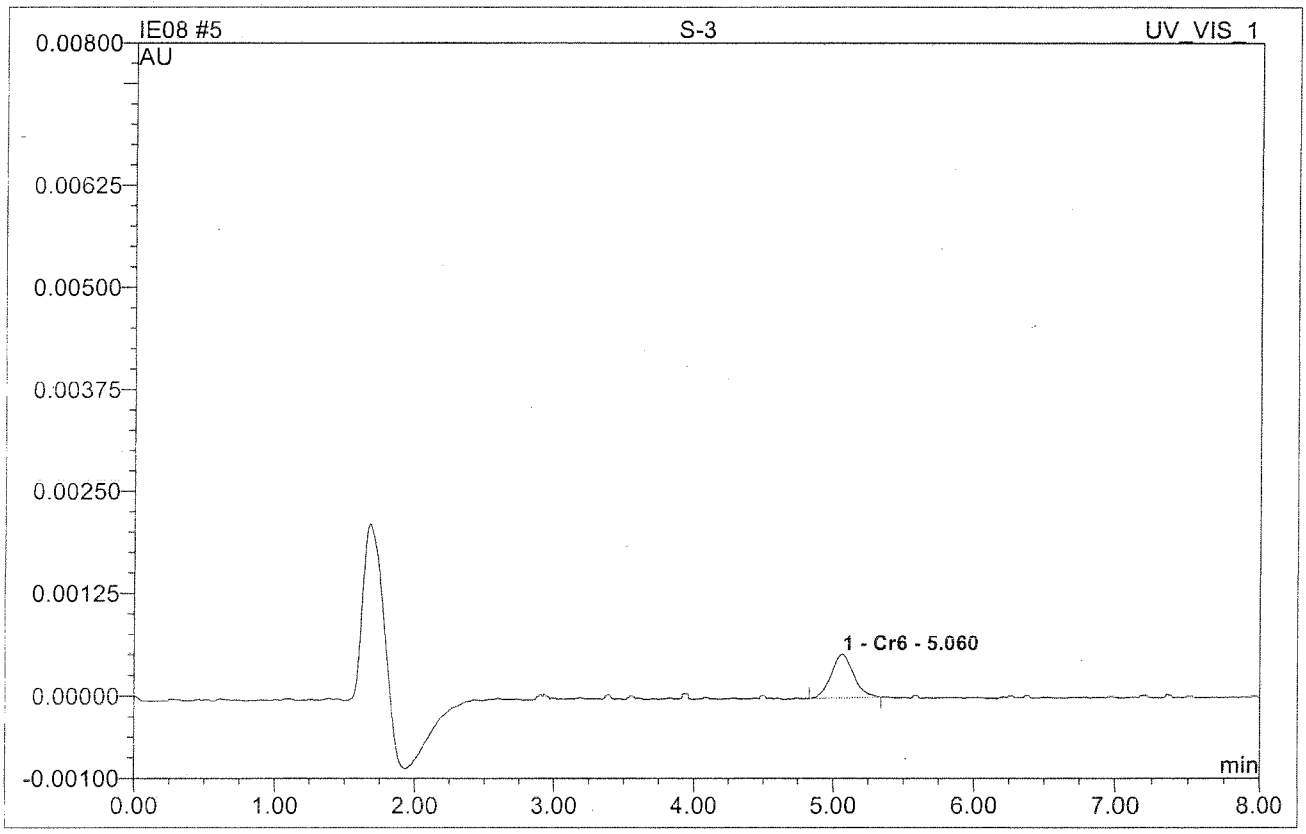
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0002640	0.0000483	100.00	0.499	BMB*
Total:			0.000	0.000	100.00	0.499	

5-9-17

IE08 005 S-3

1.0 PPB

Sample Name:	**S-3**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



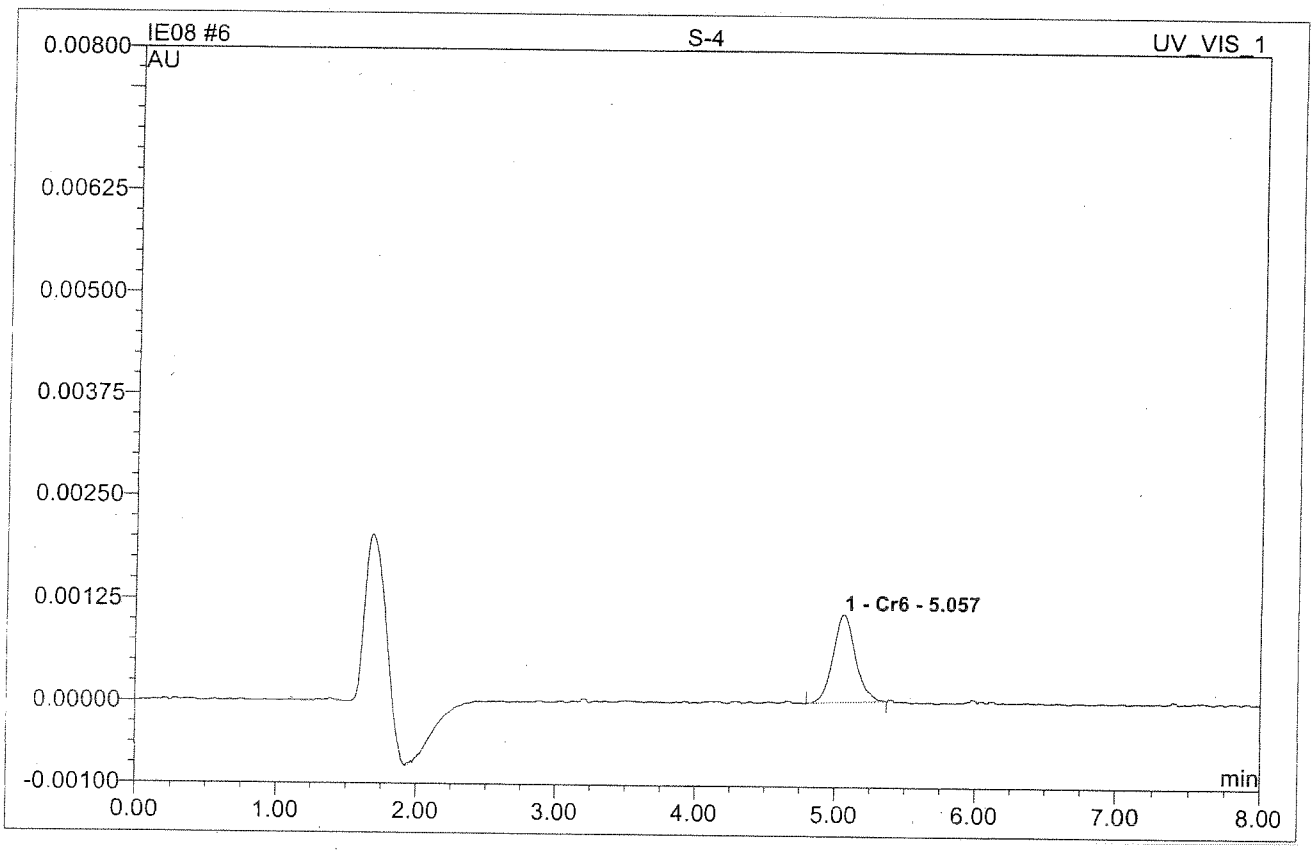
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0005350	0.0000984	100.00	0.994	BMB
Total:			0.001	0.000	100.00	0.994	

JE 5-9-17

IE08 006 S-4

2.0 PPB

Sample Name:	**S-4**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:47**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0010730	0.0001984	100.00	1.985	BMB
Total:			0.001	0.000	100.00	1.985	

5-9-17

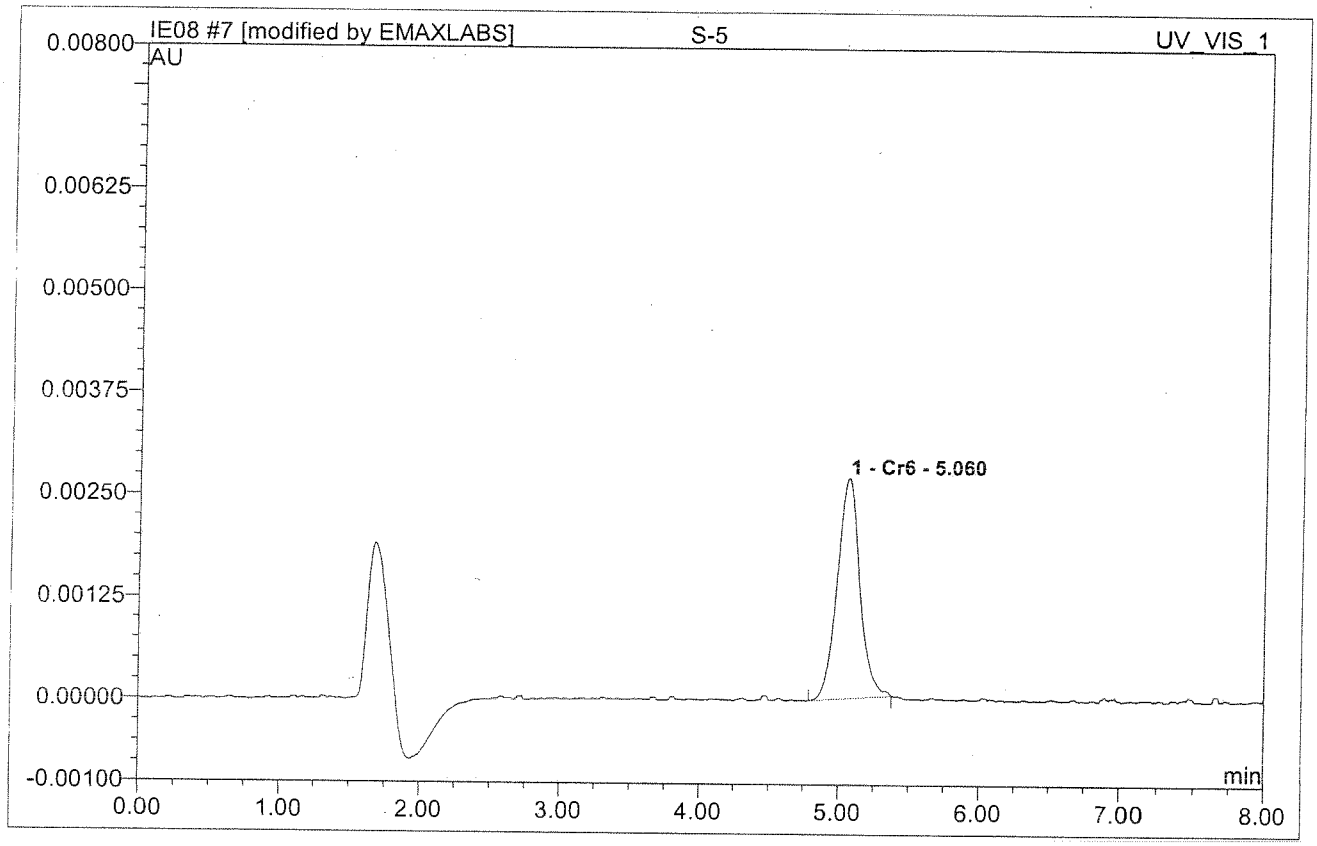
Report/Integration

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

IE08 007 S-5

5.0 PPB

Sample Name:	**S-5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 12:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



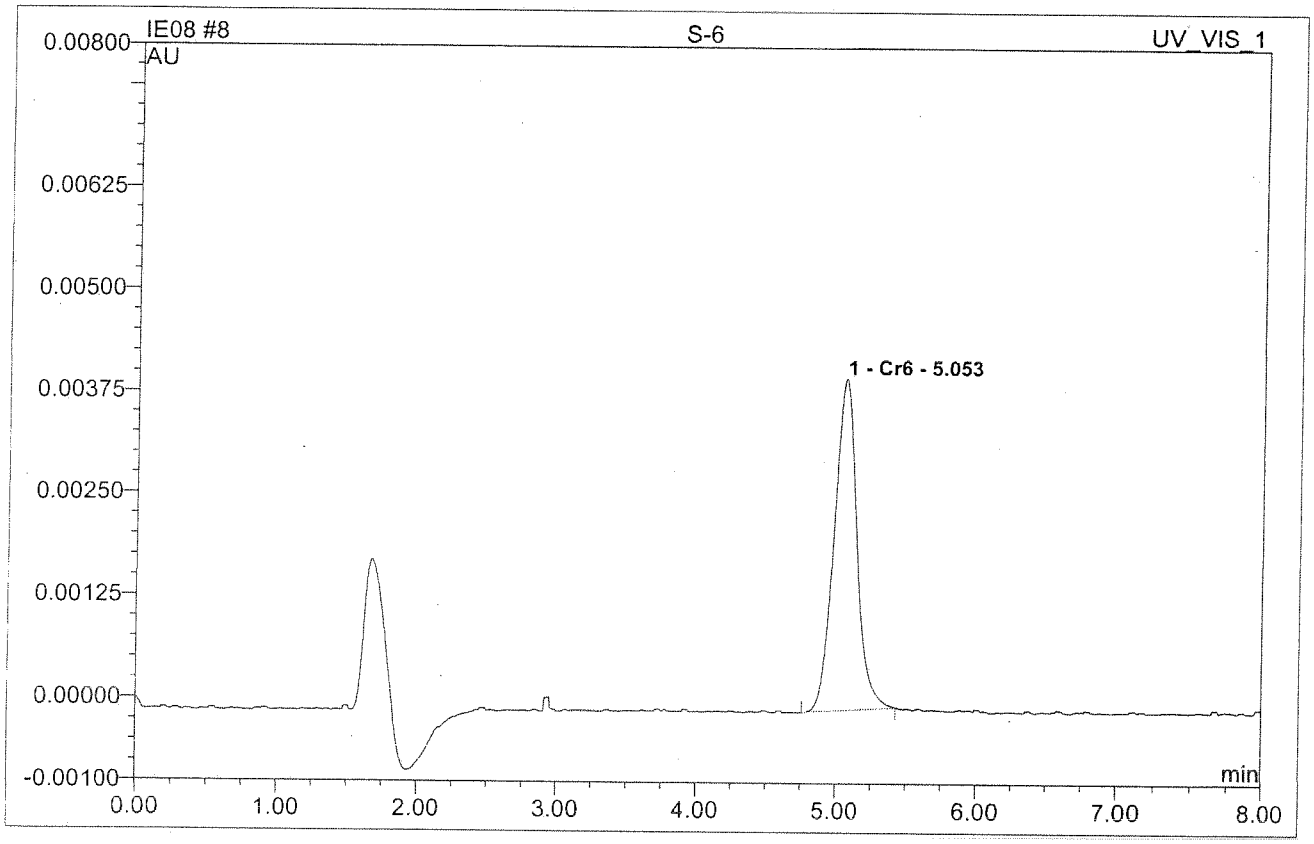
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0026920	0.0005014	100.00	4.987	BMB*
Total:			0.003	0.001	100.00	4.987	

5-9-17

IE08 008 S-6

7.5 PPB

Sample Name:	**S-6**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:08**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



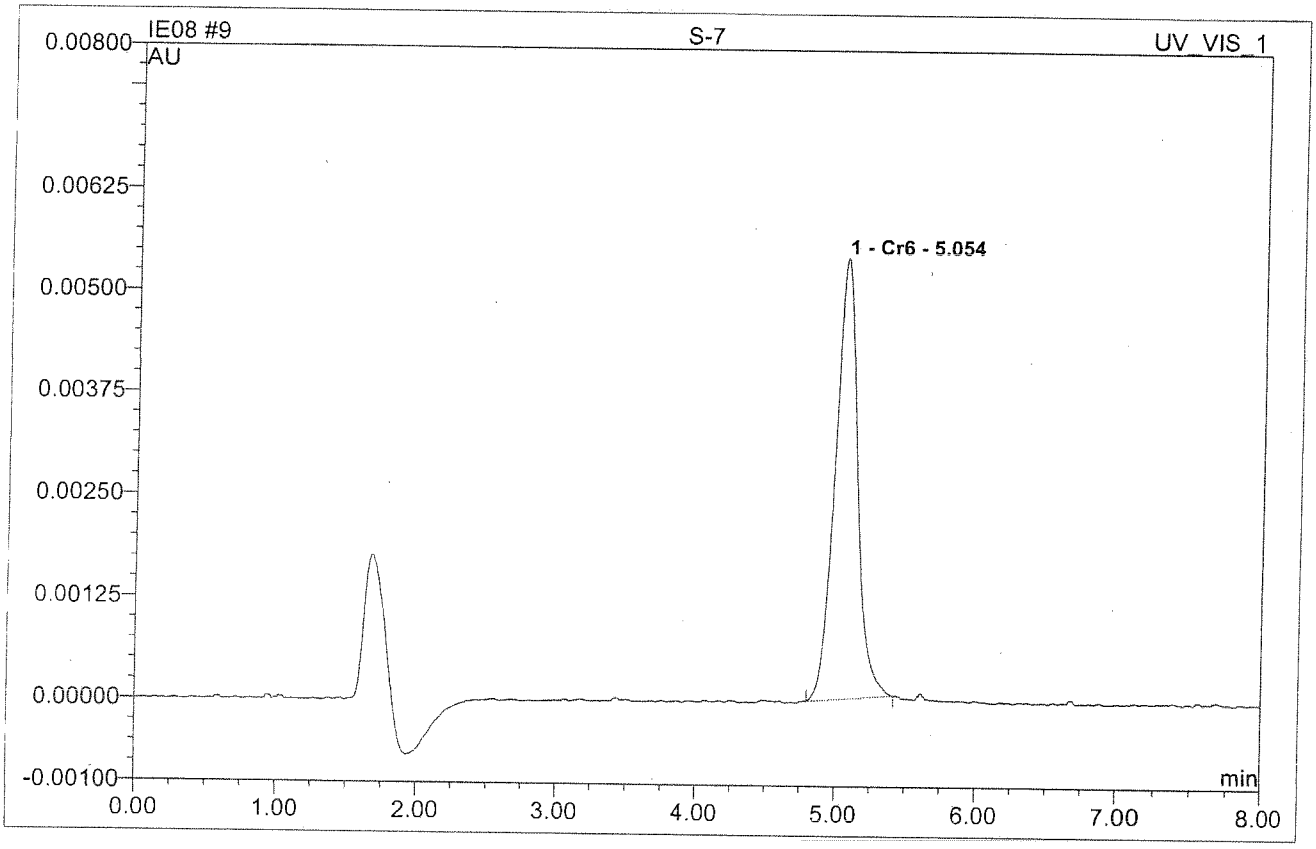
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0040590	0.0007571	100.00	7.519	BMB
Total:			0.004	0.001	100.00	7.519	

5-9-17

IE08 009 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



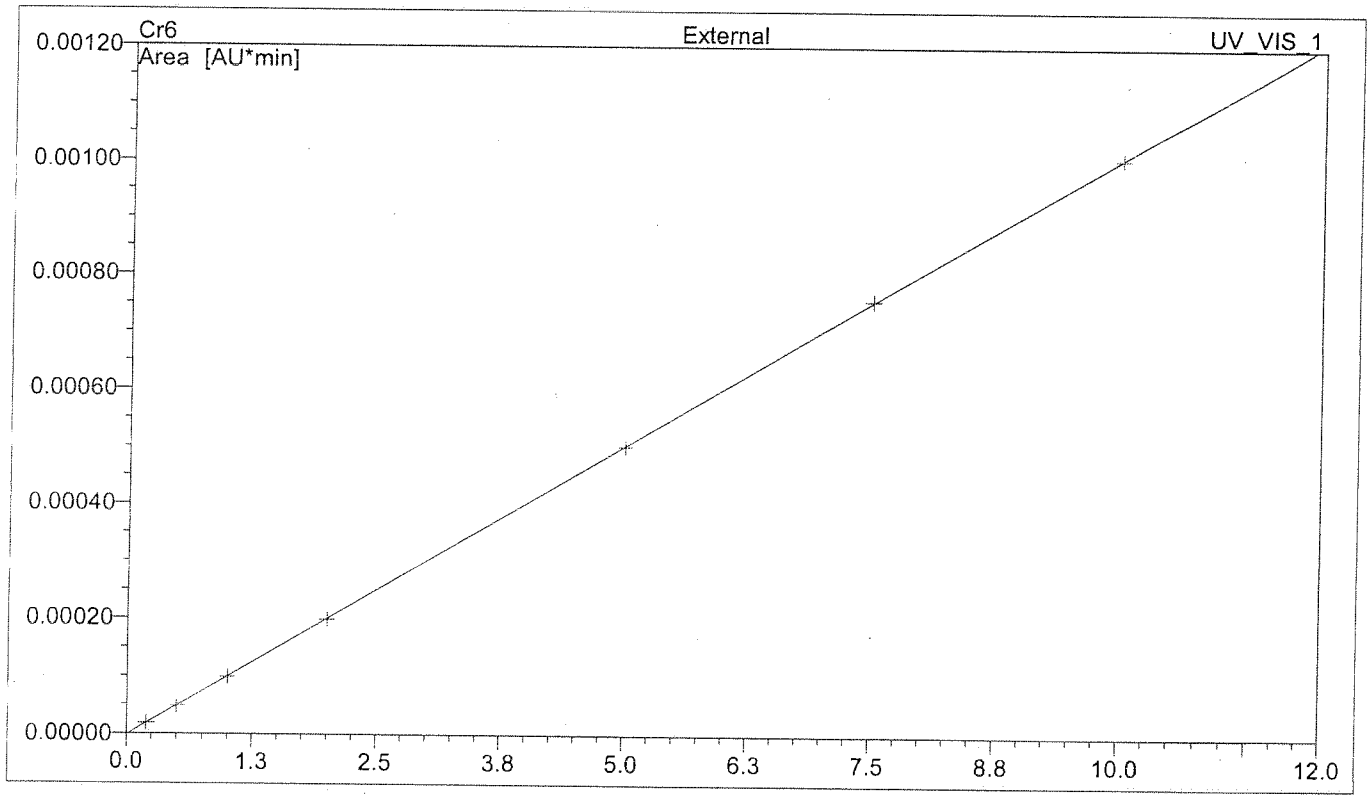
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0054030	0.0010071	100.00	9.996	BMB
Total:			0.005	0.001	100.00	9.996	

5-9-17

9 S-7

10 PPB

Sample Name:	**S-7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1.0000**
Recording Time:	**5/8/2017 13:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	R-Square	Offset	Slope	Curve
1	5.05	Cr6	0LOff	7	1.0000	-0.0000020	0.0001010	0.0000
Average:					1.0000	0.0000	0.0001	0.0000

5-9-17

SECOND SOURCE VERIFICATION

IC RESULT FORM CalVersion : CR6.E08/IE08 (2017)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IE08001	IB	C	ND	05/08/1711:55	1
IE08002	S-0	C	ND	05/08/1712:06	1
IE08003	S-1	C	0.200	05/08/1712:16	1
IE08004	S-2	C	0.499	05/08/1712:26	1
IE08005	S-3	C	0.994	05/08/1712:37	1
IE08006	S-4	C	1.985	05/08/1712:47	1
IE08007	S-5	C	4.987	05/08/1712:58	1
IE08008	S-6	C	7.519	05/08/1713:08	1
IE08009	S-7	C	9.996	05/08/1713:18	1
IE08010	ICV	C	99%	05/08/1713:29	1
IE08011	ICB	C	ND	05/08/1713:39	1

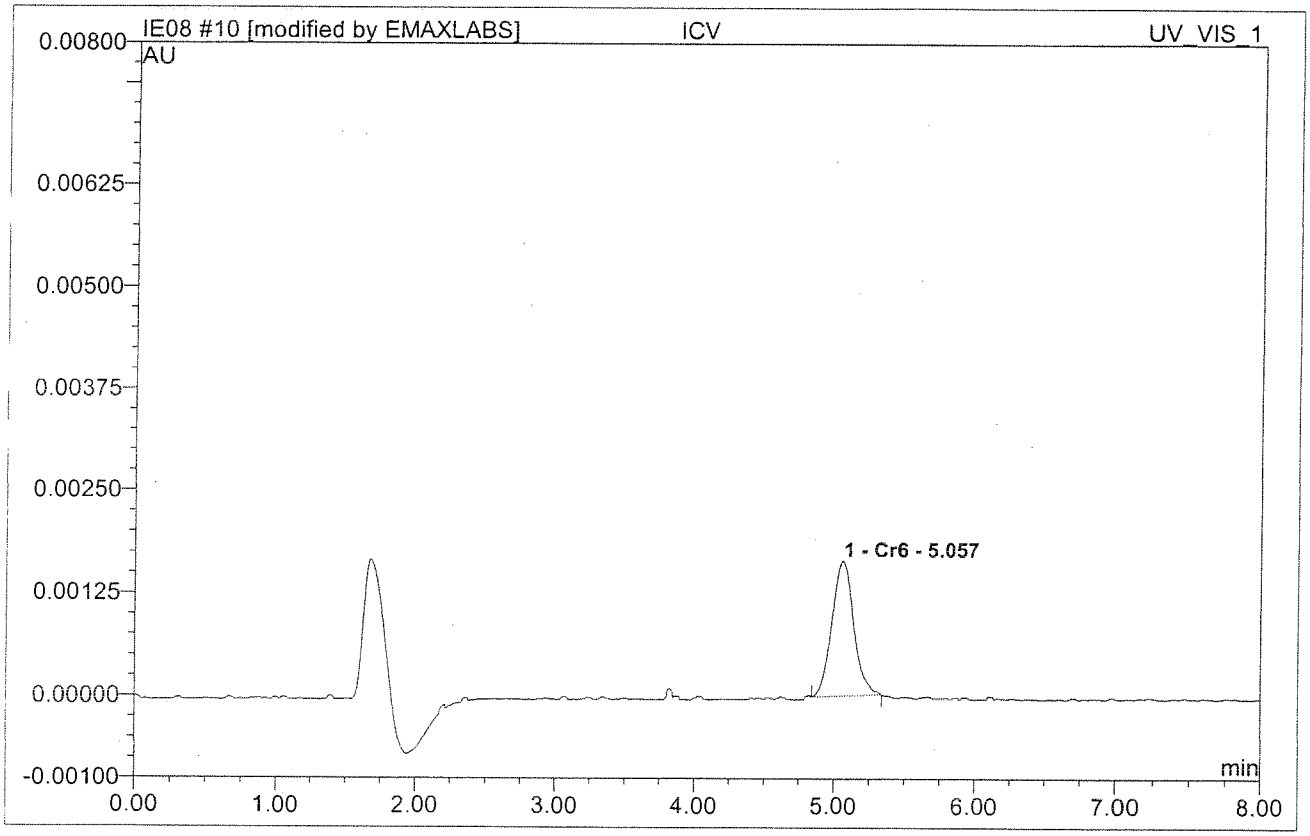
METHOD: IC59E08
SOLVENT: BUFFER (SW4-03-37-02)

5-9-17

IE08 010 ICV

3.0 PPB

Sample Name:	**ICV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**6.90**	*Sample Amount:*	**1.0000**



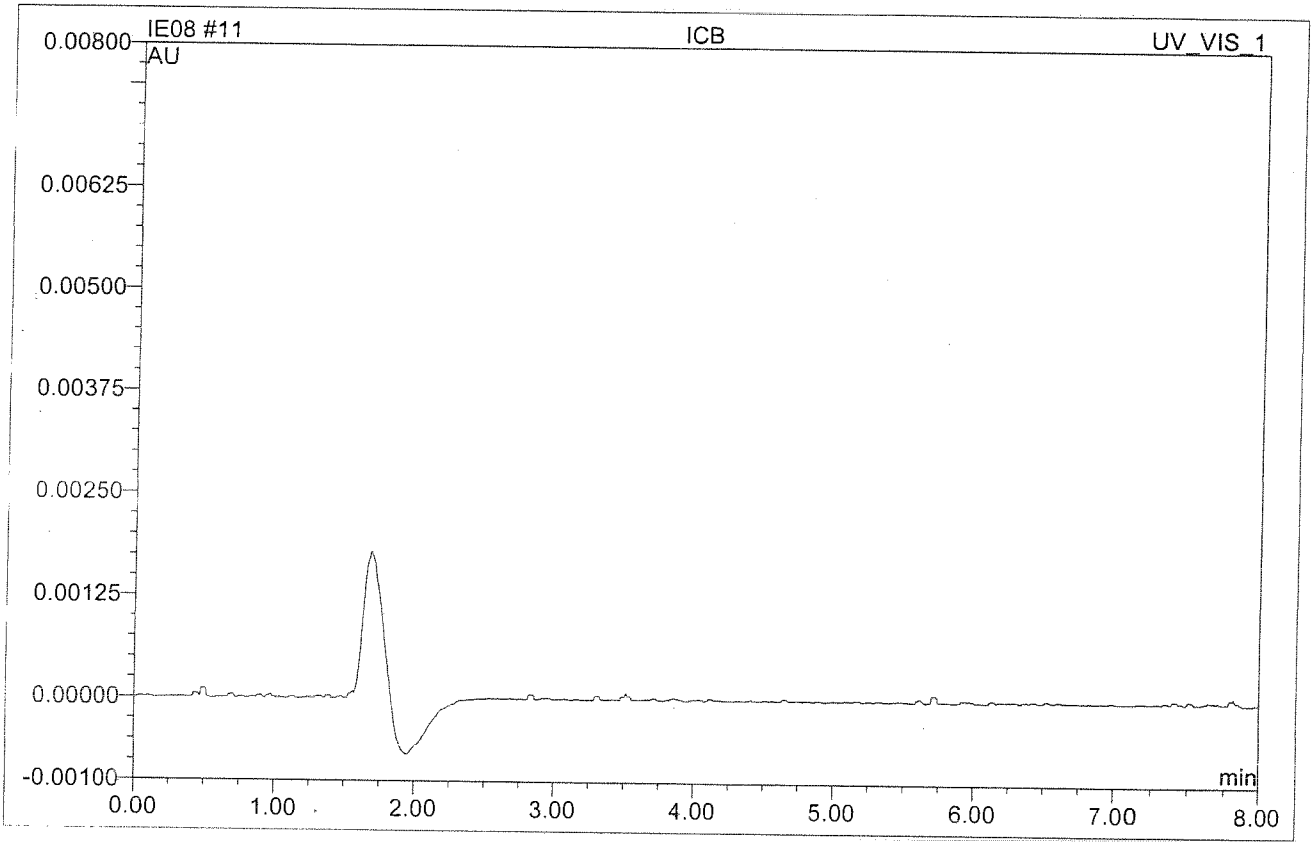
No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount		Type
1	5.06	Cr6	0.0016430	0.0002971	100.00	2.963	✓	BMB*
Total:			0.002	0.000	100.00	2.963		

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

JW 5-9-17

IE08 011 ICB

Sample Name:	**ICB**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/8/2017 13:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

DW 5-9-17

DAILY CALIBRATIONS

Continuing Calibration Summary Form

Client : ASSET LABS
Project : PG&E
SDG : 17E058
Method : E218.6
QuantMethod : IC59E08
InstrumentID: 59
Parameter : HEXAVALENT CHROMIUM

LFID	LSID	DF	Expected	Result	Unit	%Rec	AnalysisDateTime
IE11002	CCV5	1	2	1.951	ug/L	98	05/11/1710:30
IE11014	CCV7	1	2	1.937	ug/L	97	05/11/1712:35
IE11026	CCV9	1	2	1.948	ug/L	97	05/11/1714:40
IE11036	CCV11	1	2	1.92	ug/L	96	05/11/1716:24

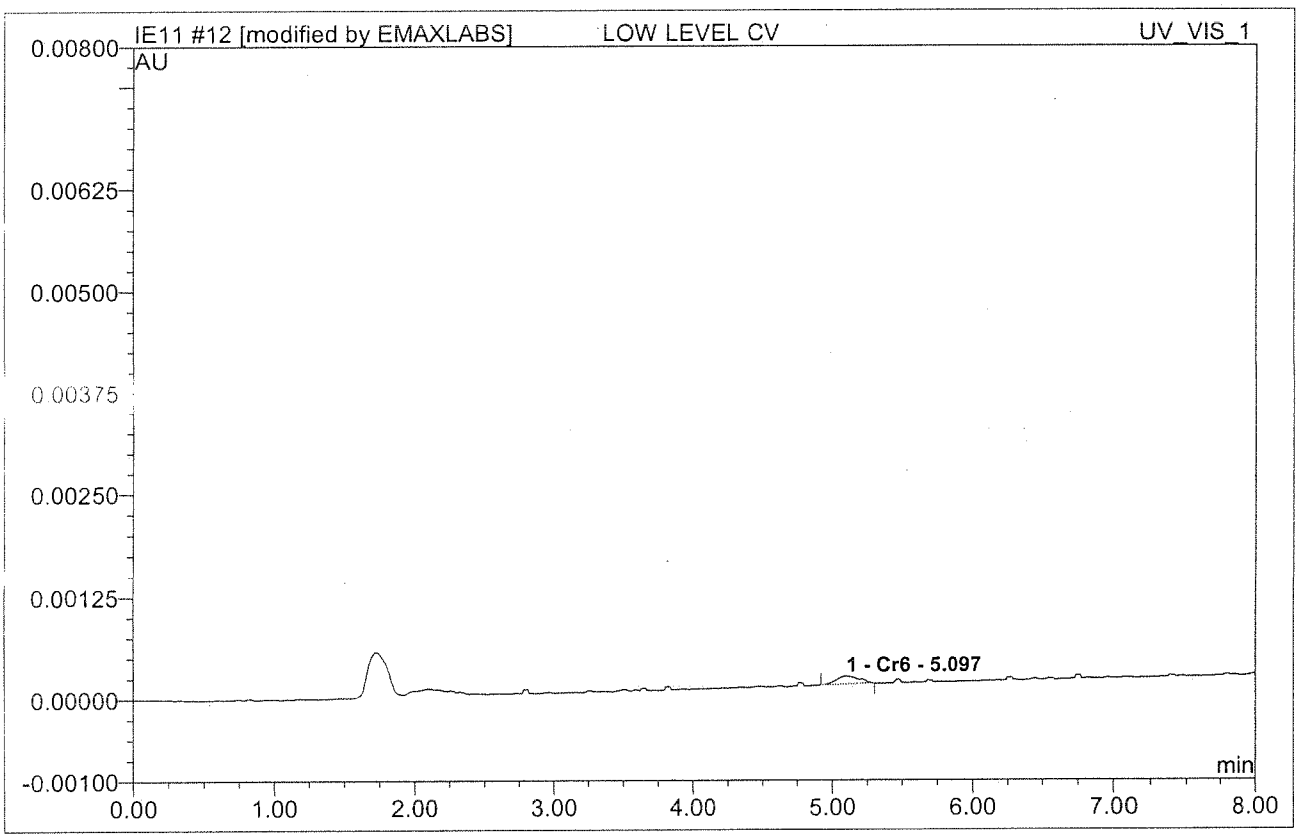
CCV Acceptance Criteria: 90-110%

IC RESULT FORM CalVersion : CR6.E08/IE08 (2017)

LFID	LSID	SelCmp	Cr6	DateTime	DF
IE11001	LOW LEVEL	C	0.205	05/11/1710:20	1
IE11002	CCV5	C	98%	05/11/1710:30	1
IE11003	CCB5	C	ND	05/11/1710:41	1
IE11004	HCE013WB	C	ND	05/11/1710:51	1
IE11005	HCE013WL	C	2.042	05/11/1711:01	1
IE11006	HCE013WC	C	2.071	05/11/1711:12	1
IE11007	E058-01	C	ND	05/11/1711:22	1
IE11008	E058-02	C	ND	05/11/1711:33	1
IE11009	E058-03	C	ND	05/11/1711:43	1
IE11010	E058-04	C	ND	05/11/1711:53	1
IE11011	E058-05	C	ND	05/11/1712:04	1
IE11012	E058-06	C	ND	05/11/1712:14	1
IE11013	E058-07	C	ND	05/11/1712:25	1
IE11014	CCV7	C	97%	05/11/1712:35	1
IE11015	CCB7	C	ND	05/11/1712:45	1
IE11016	E058-08	C	ND	05/11/1712:56	1
IE11017	E058-09	C	ND	05/11/1713:06	1
IE11018	E058-01M	C	0.990	05/11/1713:17	1
IE11019	E058-02M	C	0.947	05/11/1713:27	1
IE11020	E058-03M	C	0.913	05/11/1713:37	1
IE11021	E058-04M	C	1.002	05/11/1713:48	1
IE11022	E058-05M	C	0.992	05/11/1713:58	1
IE11023	E058-06M	C	0.962	05/11/1714:09	1
IE11024	E058-07M	C	1.037	05/11/1714:19	1
IE11025	E058-08M	C	0.991	05/11/1714:29	1
IE11026	CCV9	C	97%	05/11/1714:40	1
IE11027	CCB9	C	ND	05/11/1714:50	1
IE11028	E058-09M	C	1.006	05/11/1715:01	1
IE11029	E058-07S	C	1.068	05/11/1715:11	1
IE11030	E058-02IM	C	4.947	05/11/1715:21	5
IE11031	E058-08IM	C	4.898	05/11/1715:32	5
IE11032	E058-09IM	C	5.026	05/11/1715:42	5
IE11033	E058-02I	C	ND	05/11/1715:53	5
IE11034	E058-08I	C	ND	05/11/1716:03	5
IE11035	E058-09I	C	ND	05/11/1716:13	5
IE11036	CCV11	C	96%	05/11/1716:24	1
IE11037	CCB11	C	ND	05/11/1716:34	1

IE11 001 LOW LEVEL CV

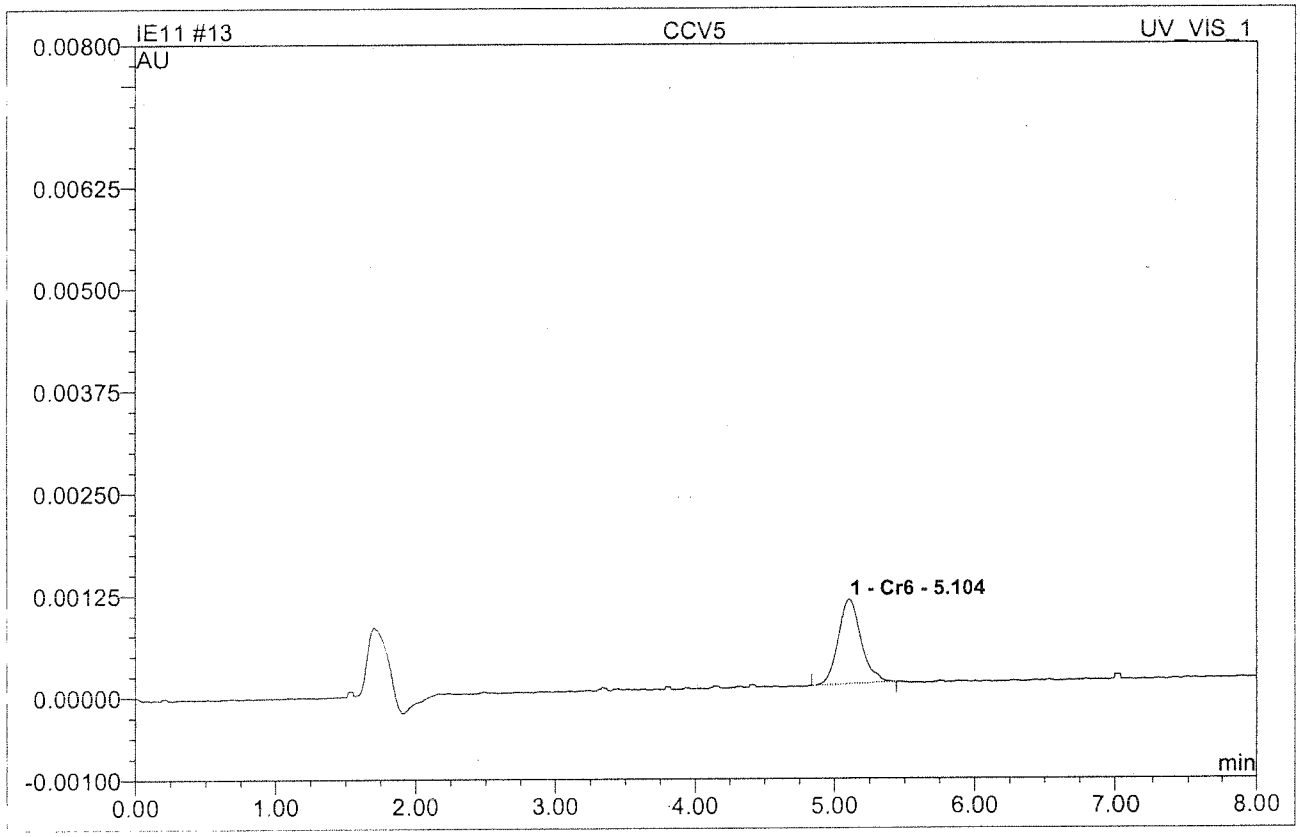
Sample Name:	**LOW LEVEL CV**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 10:20**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.10	Cr6	0.0001020	0.0000187	100.00	0.205	BMB*
Total:			0.000	0.000	100.00	0.205	

IE11 002 CCV5

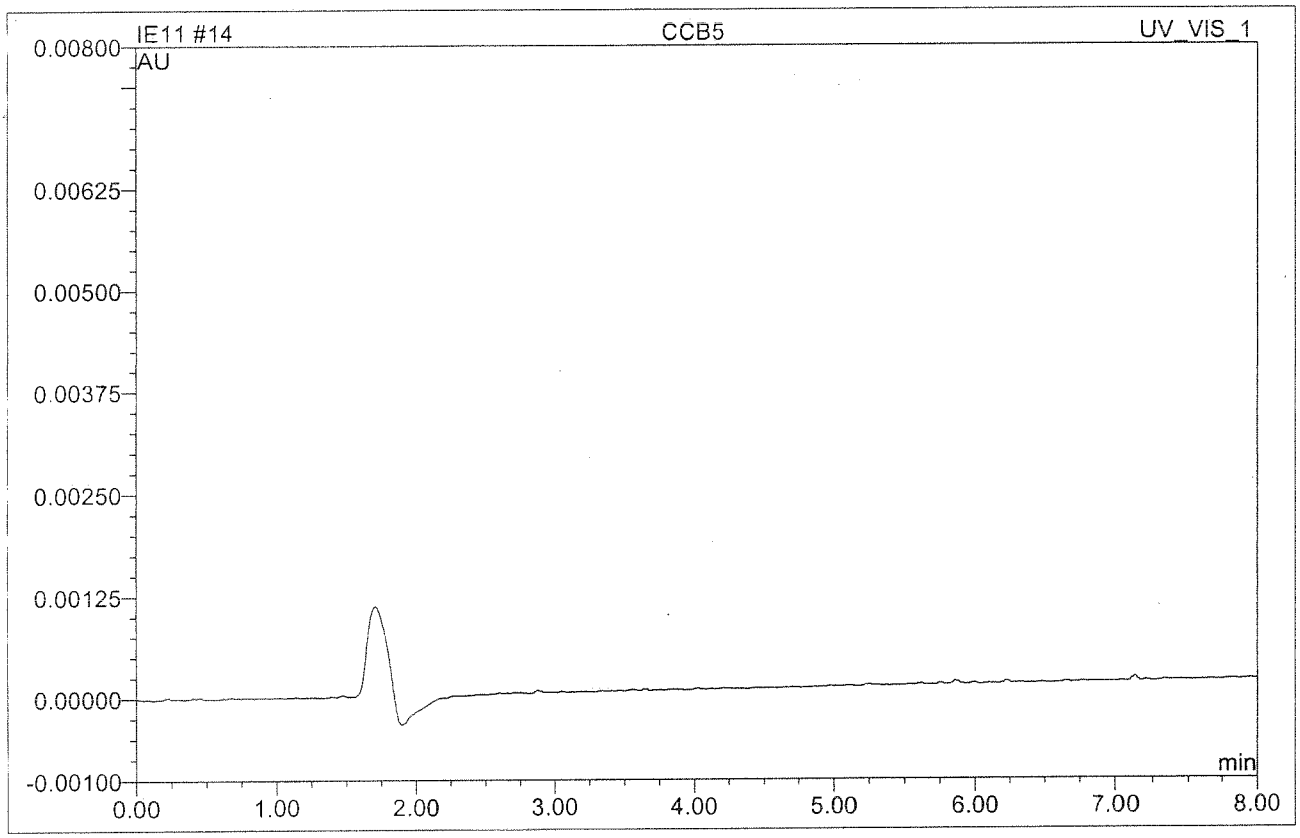
Sample Name:	**CCV5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 10:30**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.10	Cr6	0.0010360	0.0001949	100.00	1.951	BMB
Total:			0.001	0.000	100.00	1.951	

IE11 003 CCB5

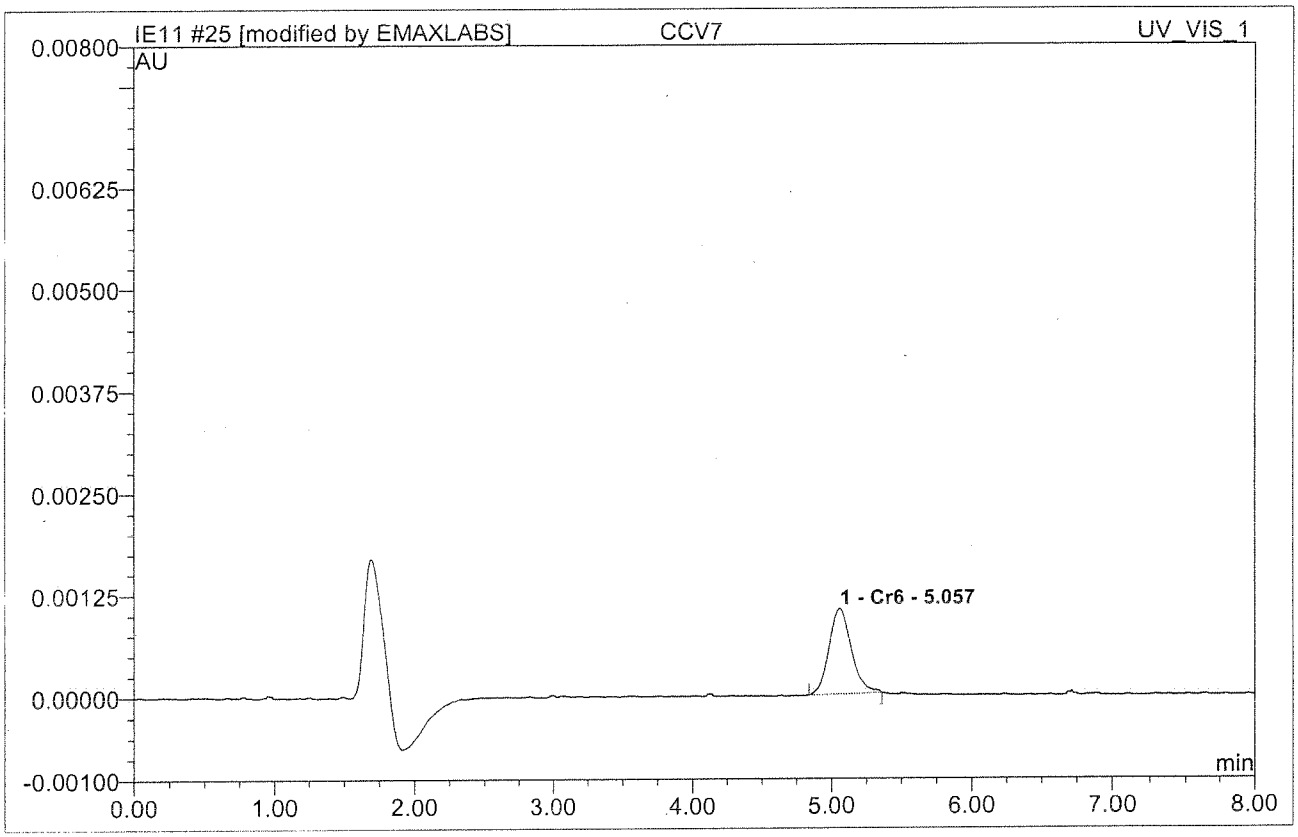
Sample Name:	**CCB5**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 10:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 014 CCV7

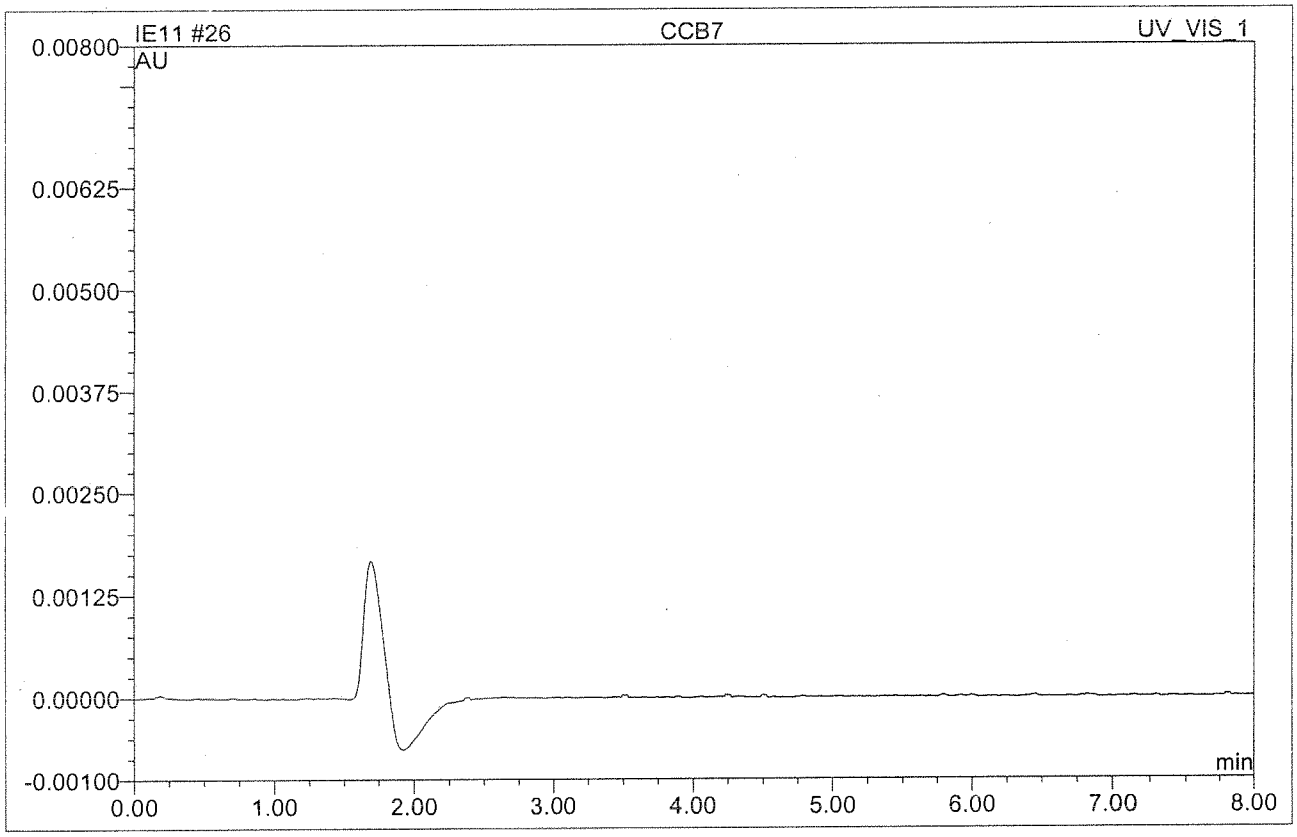
Sample Name:	**CCV7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 12:35**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.06	Cr6	0.0010470	0.0001935	100.00	1.937	BMB*
Total:			0.001	0.000	100.00	1.937	

IE11 015 CCB7

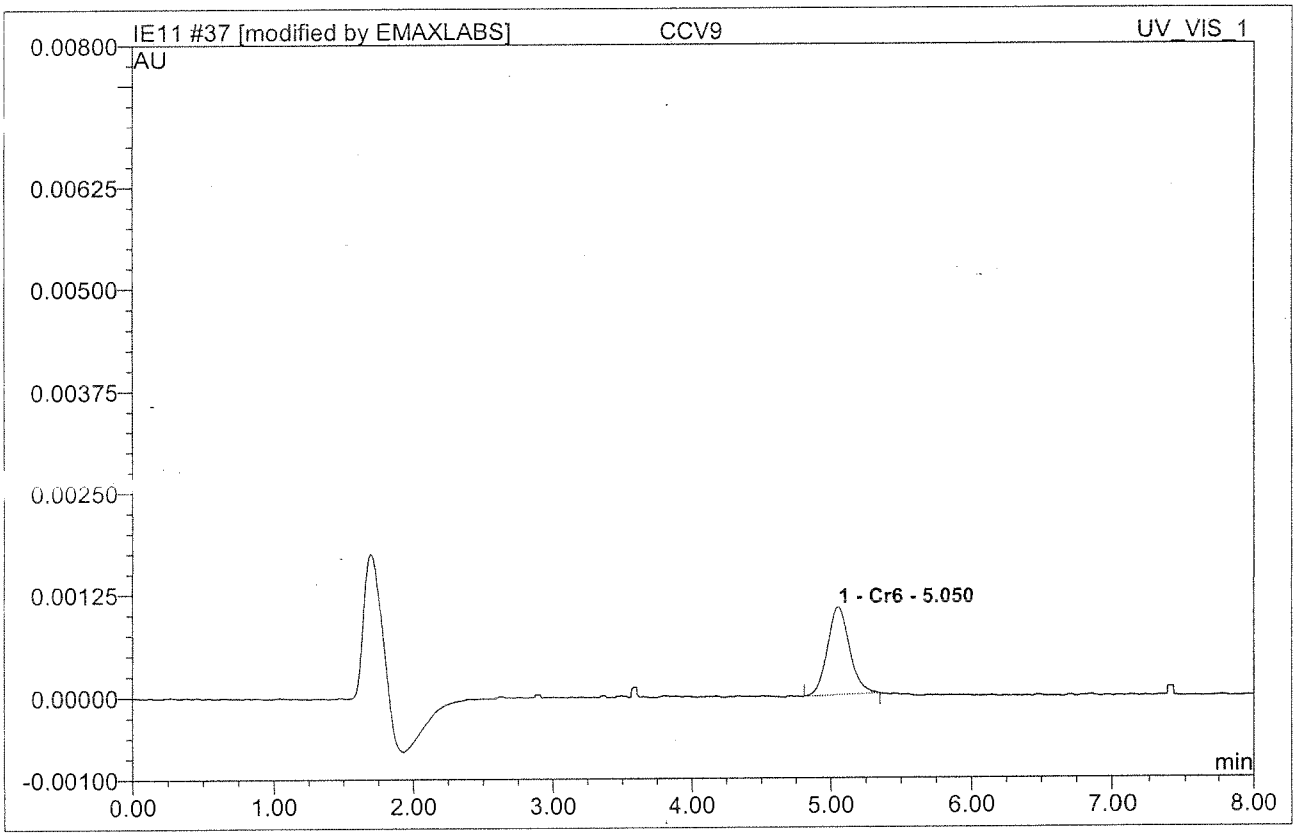
Sample Name:	**CCB7**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 12:45**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 026 CCV9

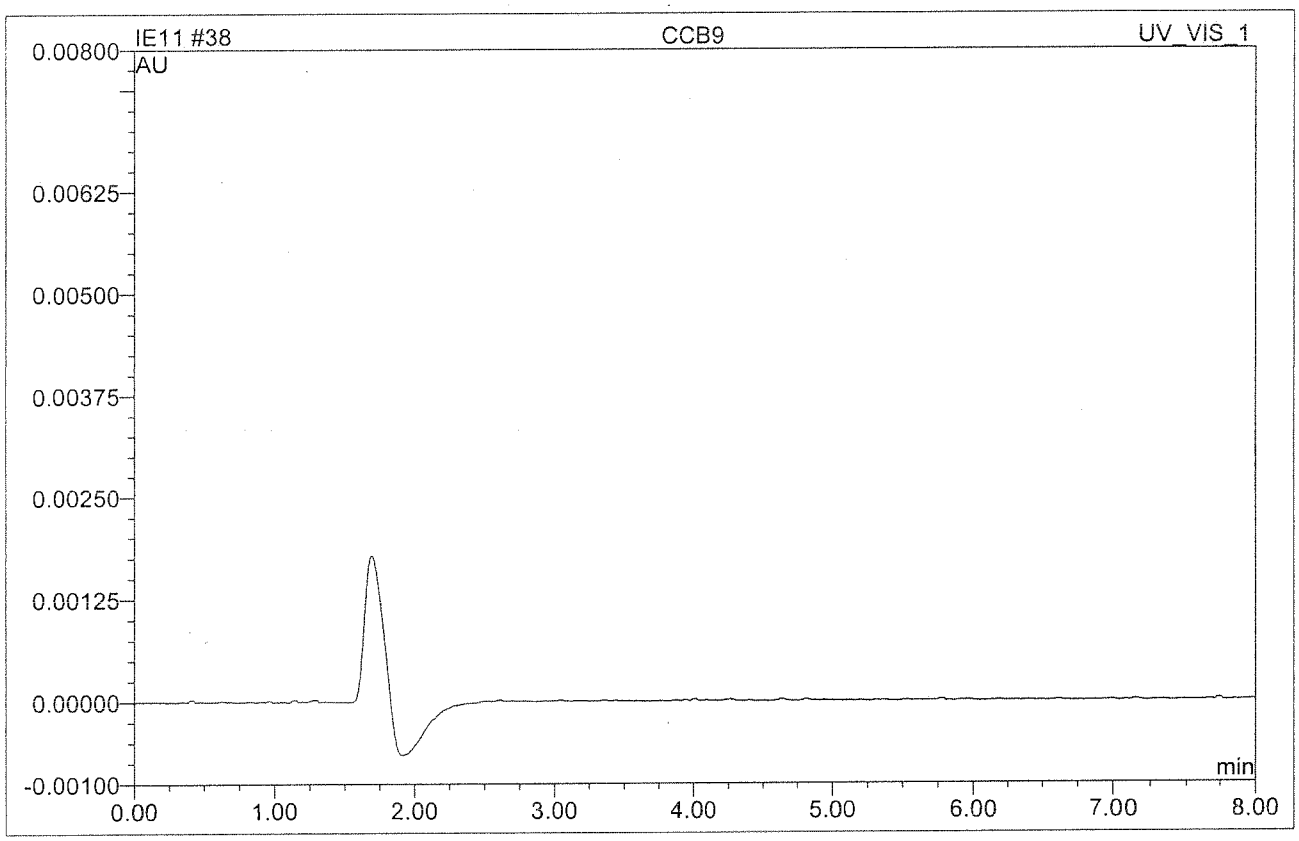
Sample Name:	**CCV9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 14:40**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0010680	0.0001946	100.00	1.948	BMB*
Total:			0.001	0.000	100.00	1.948	

IE11 027 CCB9

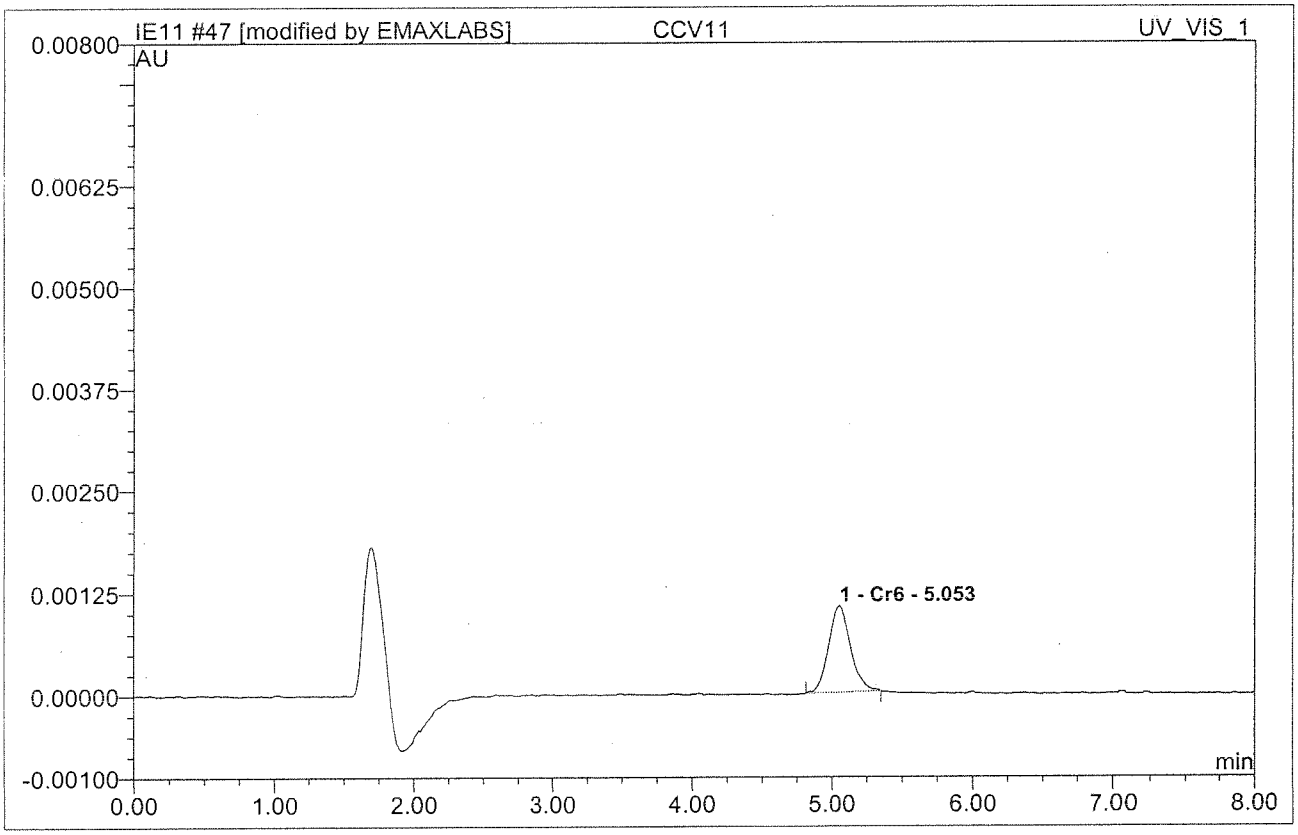
Sample Name:	**CCB9**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 14:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 036 CCV11

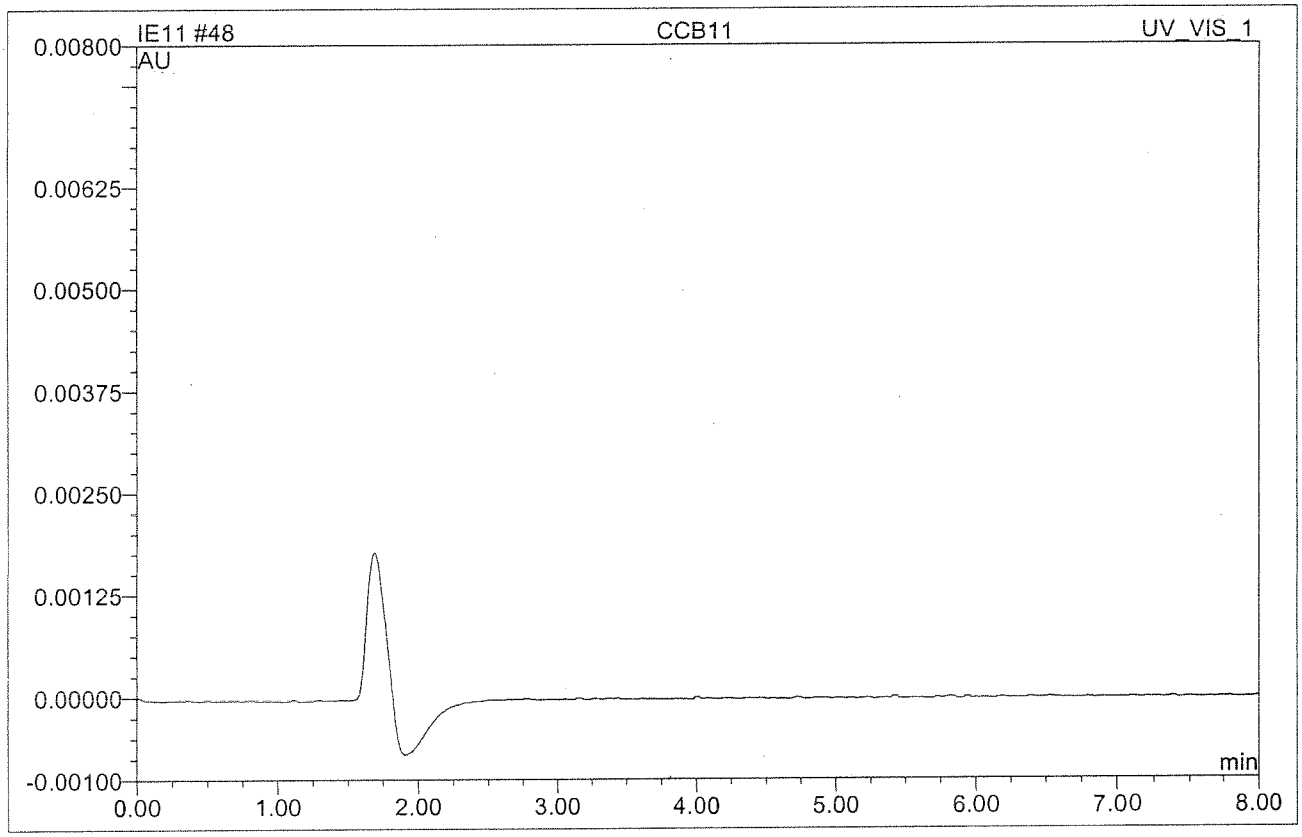
Sample Name:	**CCV11**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 16:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	5.05	Cr6	0.0010560	0.0001918	100.00	1.920	BMB*
Total:			0.001	0.000	100.00	1.920	

IE11 037 CCB11

Sample Name:	**CCB11**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 16:34**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

ANALYTICAL LOG(S)

EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

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

Comments:

1,5 Diphenylcarbohydrozide : 0.5 g	SW9A-04-042
MeOH : 100 ml	SW1A-0006-0216
H_2SO_4 : 28 ml	↓ -03-25
$(NH_4)_2SO_4$: 66 g	SW9A-04-041
NH_4OH : 13 ml	↓ -036
☐ pH Adjusted Water ID #: (range 9.3-9.5)	
☑ Buffer (10 mL → 100 mL)	SW4-03-37-02
Reagent Water ID #:	RW1-17-001

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

HCE007W: E031, E488

Column: Dionex Ionpac AS7 (4x250mm) Serial# 015353
guard column: Dionex Ionpac NG1 (4x35mm) Serial# 16083042
wavelength: 530 nm
Flow Rate: 1.0 mL/min
injection vol.: 250 µL

Book #:	A59-041
Instrument No.:	59
Pipette ID:	SW9A-04-017 ✓
	SW9A-04-025 ✓
	SW9A-04-045 ✓
Balance ID:	10601202
Analytical Sequence:	IE08
Method File:	IC59E08
Analytical Batch:	HCE007W

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

STANDARDS ID	
ICAL	SW9B-06-11-12
ICV	-13
CCV	-14
LCS	-15
MS	SW9B-06-11-05
low level calib. verif.	SW9B-06-11-16

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

5 mL vial kit Lot #: 038008 Snap-Seal Container
0.45 µm filter lot #: 61485103 4 oz: 17816006
0.2 µm filter lot #: 1.5 oz: 09416004

Analyzed By: KG
Date: 5/8/17

Sequence: IE08
Operator: EMAXLABS

Title: Temporary sequence for manual data acquisition
Datasource DG7B3Q91_local
Location: DX600\2017
Timebase: DX600
#Samples: 30

Created: 5/8/2017 11:24:42 AM by EMAXLABS
Last Update: 5/8/2017 5:41:20 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IE08	001	IB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 11:55:45 AM	1.0000	BUFFER
2	IE08	002	S-0	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:06:09 PM	1.0000	
3	IE08	003	S-1	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:16:33 PM	1.0000	0.2 PPB
4	IE08	004	S-2	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:26:58 PM	1.0000	0.5 PPB
5	IE08	005	S-3	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:37:22 PM	1.0000	1.0 PPB
6	IE08	006	S-4	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:47:46 PM	1.0000	2.0 PPB
7	IE08	007	S-5	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:58:10 PM	1.0000	5.0 PPB
8	IE08	008	S-6	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:08:35 PM	1.0000	7.5 PPB
9	IE08	009	S-7	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:18:59 PM	1.0000	10 PPB
10	IE08	010	ICV	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:29:23 PM	1.0000	3.0 PPB
11	IE08	011	ICB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:39:47 PM	1.0000	
12	IE08	012	LOW LEVEL CV	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:50:27 PM	1.0000	
13	IE08	013	HCE007WB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:00:51 PM	1.0000	
14	IE08	014	HCE007WL	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:11:16 PM	1.0000	
15	IE08	015	HCE007WC	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:21:40 PM	1.0000	
16	IE08	016	E031-01	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:32:04 PM	1.0000	
17	IE08	017	E031-02	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:42:28 PM	1.0000	
18	IE08	018	E031-03	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 2:52:52 PM	1.0000	
19	IE08	019	E031-01IM	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:03:17 PM	2.0000	DF=2; MS@4PPB
20	IE08	020	E031-01I	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:13:41 PM	2.0000	DF=2
21	IE08	021	E031-02M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:24:05 PM	1.0000	MS @ 1PPB
22	IE08	022	CCV1	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:34:29 PM	1.0000	
23	IE08	023	CCB1	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:44:53 PM	1.0000	
24	IE08	024	E031-03M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 3:55:17 PM	1.0000	MS @ 1PPB
25	IE08	025	E031-02S	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:05:41 PM	1.0000	MS @ 1PPB
26	IE08	026	E488-01	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:16:56 PM	1.0000	
27	IE08	027	E488-03	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:27:20 PM	1.0000	

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FINAL

Sequence: IE08
Operator: EMAXLABS

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2017
Timebase: DX600
#Samples: 30

Created: 5/8/2017 11:24:42 AM by EMAXLABS
Last Update: 5/8/2017 5:41:20 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IE08	028	E488-01A	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:37:45 PM	1.0000	PS @ 1PPB
29	IE08	029	CCV3	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:48:09 PM	1.0000	
30	IE08	030	CCB3	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 4:58:33 PM	1.0000	

FINAL

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EMAX LABORATORIES, INC.

ANALYSIS RUN LOG
for
HEXAVALENT CHROMIUM IC

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

Comments:

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

MeOH : 100 ml SW1A-006-02-16

H_2SO_4 : 28 ml ↓ -03-25

$(NH_4)_2SO_4$: 66 g SW9A-04-047

NH_4OH : 13 ml ↓ -036

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

☑ Buffer (10 mL → 100 mL) SW4-03-37-02

Reagent Water ID #: RW1-17-001

HCE013W: E058

Book #:	A59-041
Instrument No.:	59
Pipette ID:	SW9A-04-017 ✓
	SW9A-04-025 ✓
	SW9A-04-045 ✓
Balance ID:	10601202
Analytical Sequence:	IE11
Method File:	IC59E08
Analytical Batch:	HCE013W

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

STANDARDS ID	
ICAL	—
~~ICV~~ Low level Cal. verf.	SW9B-06-12-04
CCV	-12-02
LCS	-12-03
MS	-11-05

ELECTRONIC DATA ARCHIVAL	
Location	Date
☐ CHROMELEON	
☐	

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

0.45 µm filter lot #: 61485103 4 oz: 17816006

0.2 µm filter lot #: 1.5 oz: 09416004

Analyzed By: KC

Date: 5/11/17

Sequence: IE11
Operator: EMAXLABS
Printed: 5/11/2017 4:45:20 PM

Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2017
Timebase: DX600
#Samples: 48

Created: 5/11/2017 10:08:49 AM by EMAXLABS
Last Update: 5/11/2017 3:55:45 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
1	IE11		IB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 11:55:45 AM	1.0000	BUFFER
2	IE11		S-0	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:06:09 PM	1.0000	
3	IE11		S-1	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:16:33 PM	1.0000	0.2 PPB
4	IE11		S-2	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:26:58 PM	1.0000	0.5 PPB
5	IE11		S-3	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:37:22 PM	1.0000	1.0 PPB
6	IE11		S-4	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:47:46 PM	1.0000	2.0 PPB
7	IE11		S-5	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 12:58:10 PM	1.0000	5.0 PPB
8	IE11		S-6	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:08:35 PM	1.0000	7.5 PPB
9	IE11		S-7	Standard	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:18:59 PM	1.0000	10 PPB
10	IE11		ICV	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:29:23 PM	1.0000	3.0 PPB
11	IE11		ICB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/8/2017 1:39:47 PM	1.0000	
12	IE11	001	LOW LEVEL CV	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 10:20:16 AM	1.0000	
13	IE11	002	CCV5	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 10:30:40 AM	1.0000	
14	IE11	003	CCB5	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 10:41:04 AM	1.0000	
15	IE11	004	HCE013WB	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 10:51:28 AM	1.0000	
16	IE11	005	HCE013WL	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 11:01:52 AM	1.0000	
17	IE11	006	HCE013WC	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 11:12:16 AM	1.0000	
18	IE11	007	E058-01	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 11:22:41 AM	1.0000	
19	IE11	008	E058-02	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 11:33:05 AM	1.0000	
20	IE11	009	E058-03	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 11:43:29 AM	1.0000	
21	IE11	010	E058-04	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 11:53:53 AM	1.0000	
22	IE11	011	E058-05	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 12:04:17 PM	1.0000	
23	IE11	012	E058-06	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 12:14:41 PM	1.0000	
24	IE11	013	E058-07	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 12:25:06 PM	1.0000	
25	IE11	014	CCV7	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 12:35:30 PM	1.0000	
26	IE11	015	CCB7	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 12:45:54 PM	1.0000	
27	IE11	016	E058-08	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 12:56:18 PM	1.0000	

FINAL

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Title: Temporary sequence for manual data acquisition
Datasource: DG7B3Q91_local
Location: DX600\2017
Timebase: DX600
#Samples: 48

Created: 5/11/2017 10:08:49 AM by EMAXLABS
Last Update: 5/11/2017 3:55:45 PM by EMAXLABS

No.	Sequence	Sample ID	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time	Dil. Factor	Comment
28	IE11	017	E058-09	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 1:06:42 PM	1.0000	
29	IE11	018	E058-01M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 1:17:06 PM	1.0000	
30	IE11	019	E058-02M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 1:27:30 PM	1.0000	
31	IE11	020	E058-03M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 1:37:54 PM	1.0000	
32	IE11	021	E058-04M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 1:48:18 PM	1.0000	
33	IE11	022	E058-05M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 1:58:42 PM	1.0000	
34	IE11	023	E058-06M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 2:09:06 PM	1.0000	
35	IE11	024	E058-07M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 2:19:30 PM	1.0000	
36	IE11	025	E058-08M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 2:29:54 PM	1.0000	
37	IE11	026	CCV9	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 2:40:19 PM	1.0000	
38	IE11	027	CCB9	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 2:50:43 PM	1.0000	
39	IE11	028	E058-09M	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 3:01:07 PM	1.0000	
40	IE11	029	E058-07S	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 3:11:31 PM	1.0000	
41	IE11	030	E058-02IM	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 3:21:55 PM	5.0000	DF=5
42	IE11	031	E058-08IM	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 3:32:20 PM	5.0000	DF=5
43	IE11	032	E058-09IM	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 3:42:44 PM	5.0000	DF=5
44	IE11	033	E058-02I	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 3:53:08 PM	5.0000	DF=5
45	IE11	034	E058-08I	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 4:03:32 PM	5.0000	DF=5
46	IE11	035	E058-09I	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 4:13:56 PM	5.0000	DF=5
47	IE11	036	CCV11	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 4:24:20 PM	1.0000	
48	IE11	037	CCB11	Unknown	250.0	Cr6 Program	IC59E08	Finished	5/11/2017 4:34:44 PM	1.0000	

FINAL

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SAMPLE PRESERVATION LOG(S)

EMAX LABORATORIES, INC.

pH ADJUSTMENTS/SAMPLE PRESERVATION LOG FOR HEXAVALENT CHROMIUM

SOP ☑ EMAX-218.6 Rev. 6 ☑ EMAX-7199 Rev. 5 Book #: PHC-015

Matrix: W Start Date: 5/9/17 Time: 8:20 End Date: 5/9/17 Time: 16:08

Sample Prep ID	Lab Sample ID	Initial pH	Final pH	Notes
01	E057-01	6.92	9.10	0.28 mL added → 40 mL ; Cr
02	~~-02~~ -03 KG 5/9/17	6.91	9.06	0.26 mL added → 40 mL ; Cr
03	~~-03~~ -02	6.94	9.11	0.28 mL added → 40 mL ; Cr
04	-04	6.96	9.12	0.26 mL added → 40 mL ; Cr
05	-05	6.94	9.05	0.28 mL added → 40 mL ; Cr
06	-06	7.01	9.15	0.24 mL added → 40 mL ; Cr
07	-07	7.16	9.05	0.24 mL added → 40 mL ; Cr
08	-08	7.06	9.10	0.28 mL added → 40 mL ; Cr
09	-09	6.98	9.16	0.28 mL added → 40 mL ; Cr
10	E058-01 *	9.39	9.39	no adj. needed ; Cr
11	-02 *	9.37	9.37	
12	-03 *	9.27	9.27	
13	-04 *	9.50	9.50	
14	-05 *	9.22	9.22	
15	-06 *	9.50	9.50	
16	-07 *	8.65	9.07	0.24 mL added ; Cr
17	-08 *	8.55	9.06	0.24 mL added ; Cr
18	-09 *	9.25	9.25	no adj. needed ; Cr
19	E062-04	6.96	9.05	0.20 mL added → 40 mL ; Cr
20	-06	5.11	9.50	0.02 mL added → 40 mL ; Cr
21	E068-01	6.84	9.09	0.28 mL added → 40 mL ; Cr
22	-02	6.88	9.06	0.28 mL added → 40 mL ; Cr
23				
24				
25				KG 5/9/17

Standards	ID	pH
Buffer 7	SW1-01-861	6.99
Buffer 10	-815	10.00
Check pH Buffer (8)	-900	8.02
pH meter	F7	

Reagent	Standard ID #
NaOH	SW4-03-29-02
$(NH_4)_2SO_4/NH_4OH$	—
Reagent Water	—

Legend:

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

☐ Samples were received with preservation

Comments:

* samples were received with preservation

Prepared By: KG

Standard Added By: KG

Checked By:

RETENTION TIME WINDOW

RETENTION TIME WINDOW
METHOD 218.6/7199

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

Compound	Ical Mean RT	from	to	Retention Time Window
CHROMIUM VI	**5.05**	4.84	5.27	**0.213**

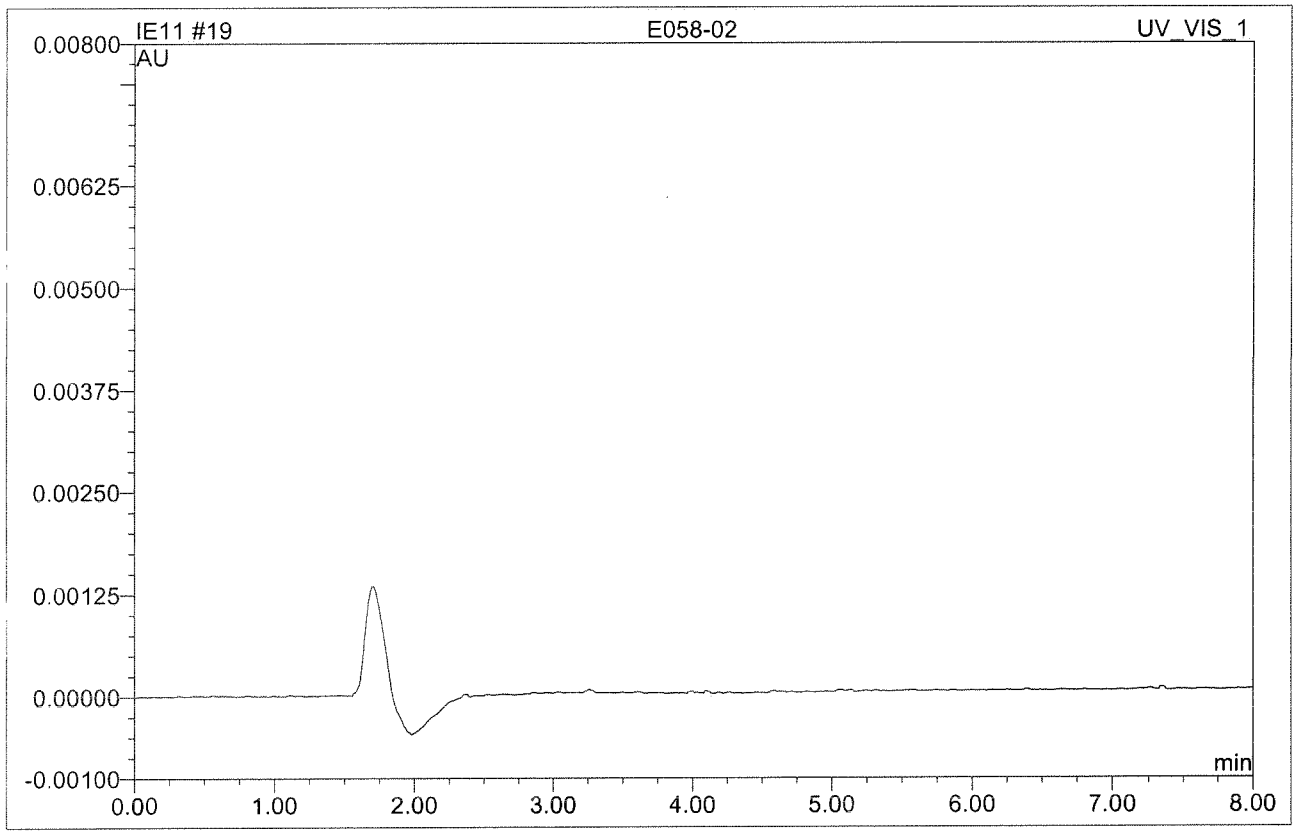
IC59E08

5-9-17

APPENDIX

IE11 008 E058-02

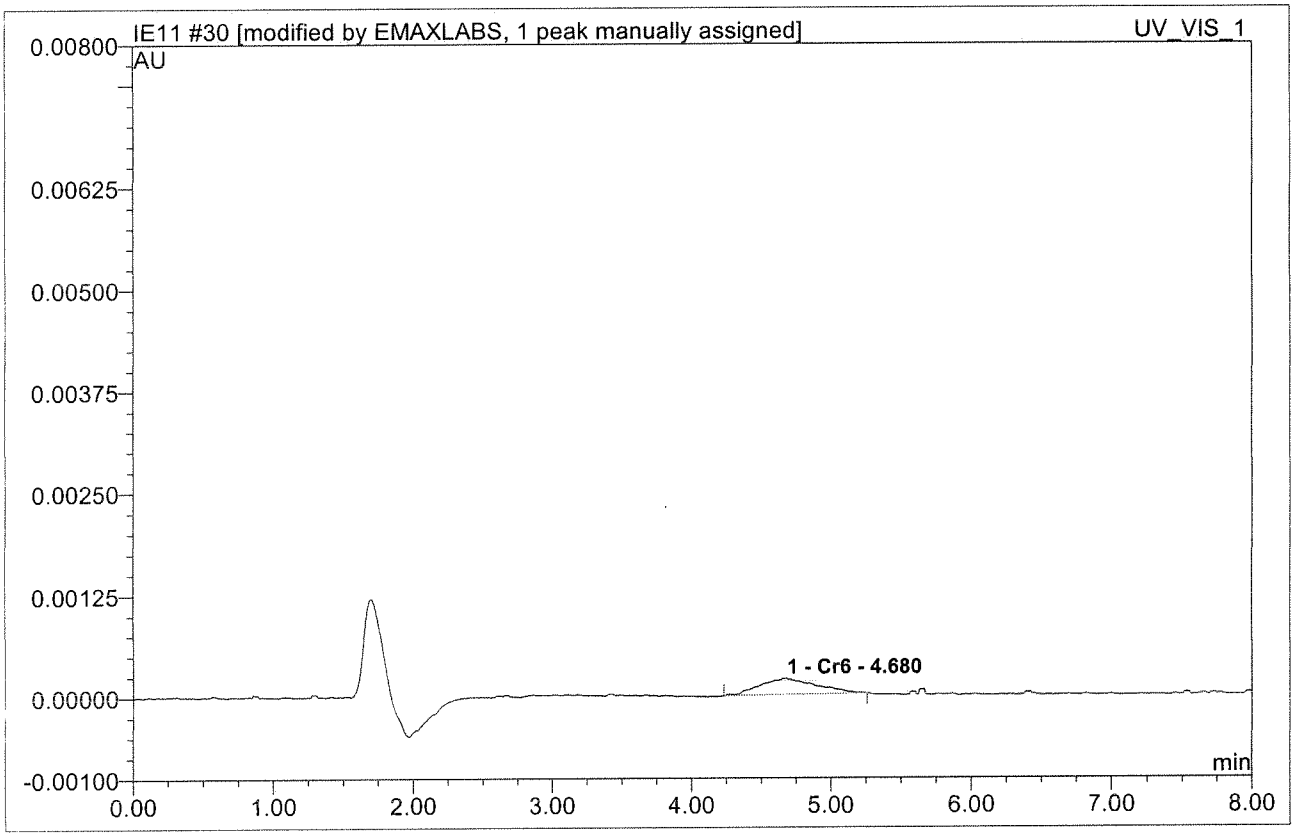
Sample Name:	**E058-02**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 11:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 019 E058-02M

Sample Name:	**E058-02M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 13:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**

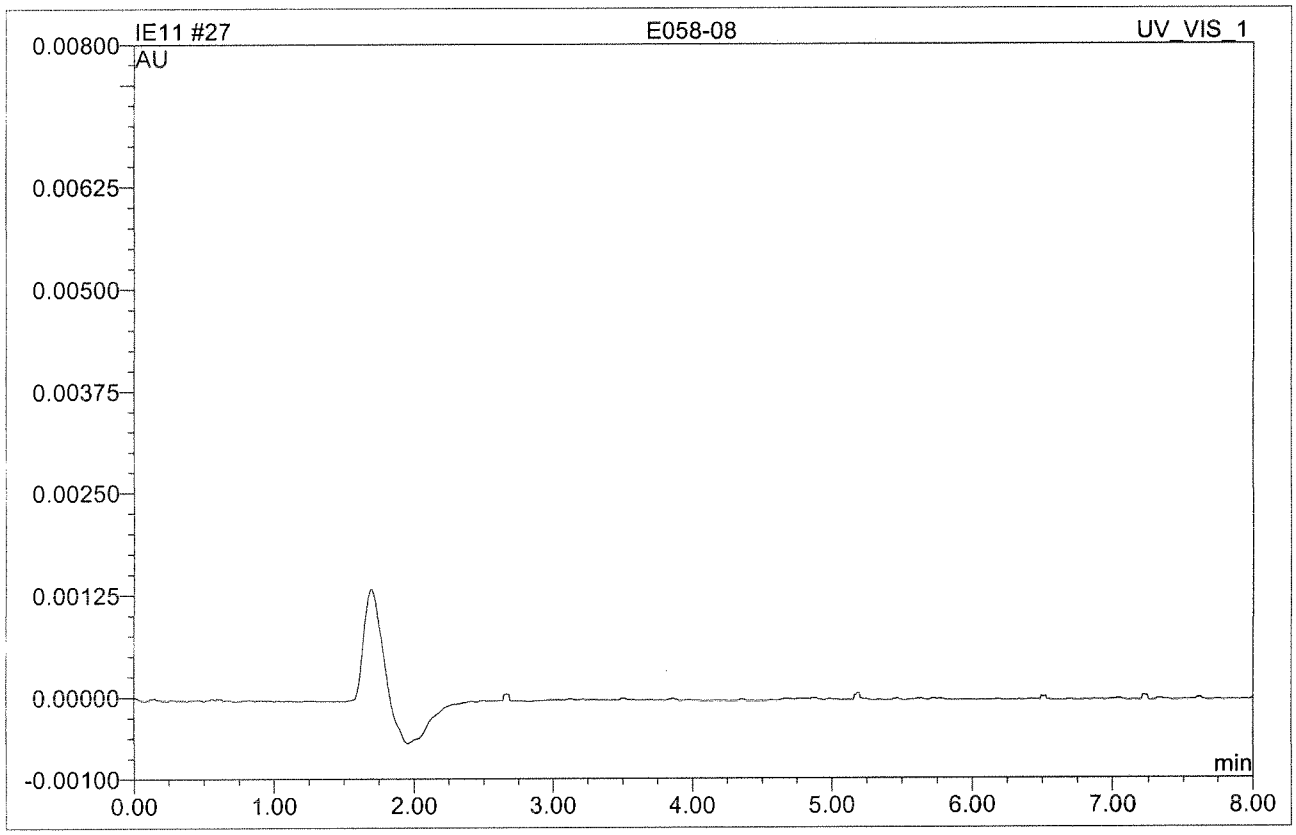


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.68 X	Cr6	0.0002070	0.0000936	100.00	0.947	BMB*^
Total:			0.000	0.000	100.00	0.947	

x out of RT window

IE11 016 E058-08

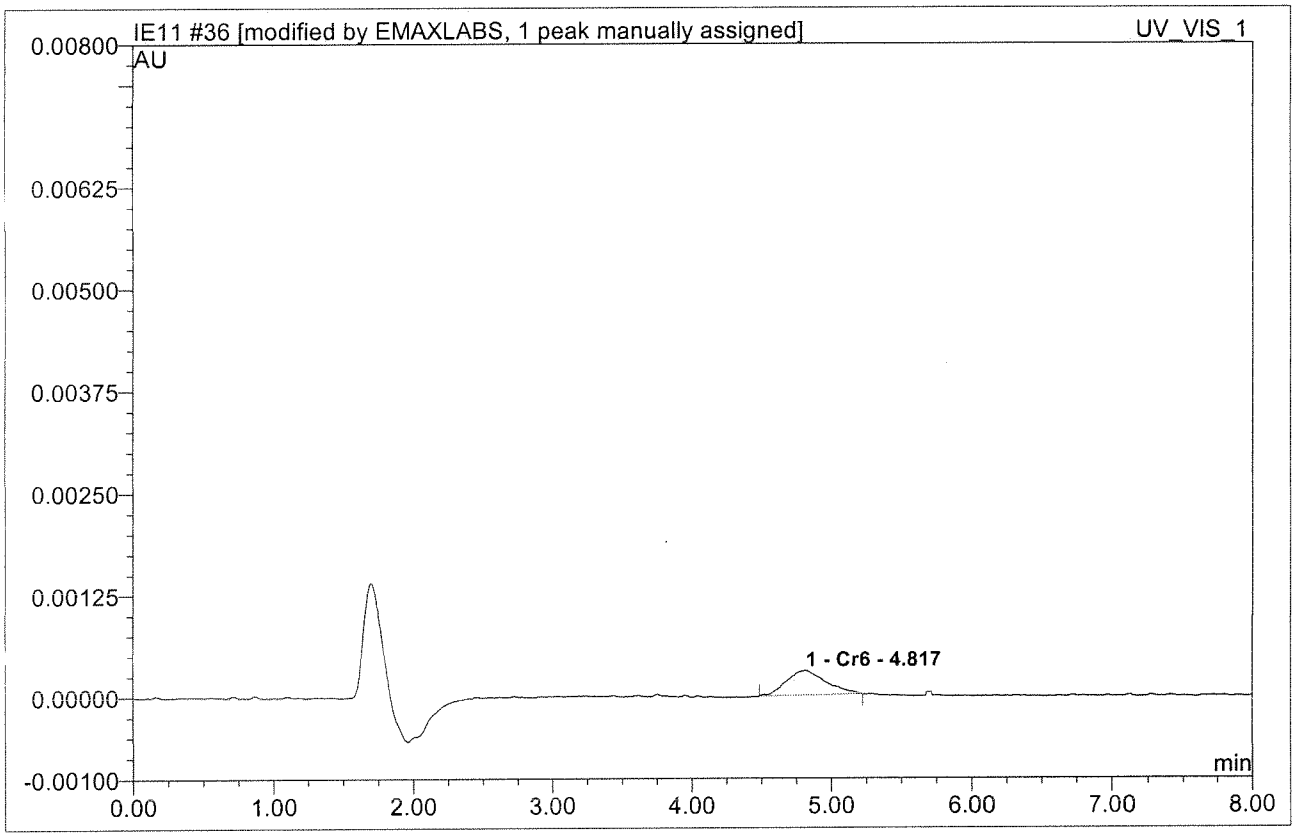
Sample Name:	**E058-08**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 12:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 025 E058-08M

Sample Name:	**E058-08M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 14:29**	*Sample Weight:*	**1.0000**
Run Time (min):	**5.90**	*Sample Amount:*	**1.0000**

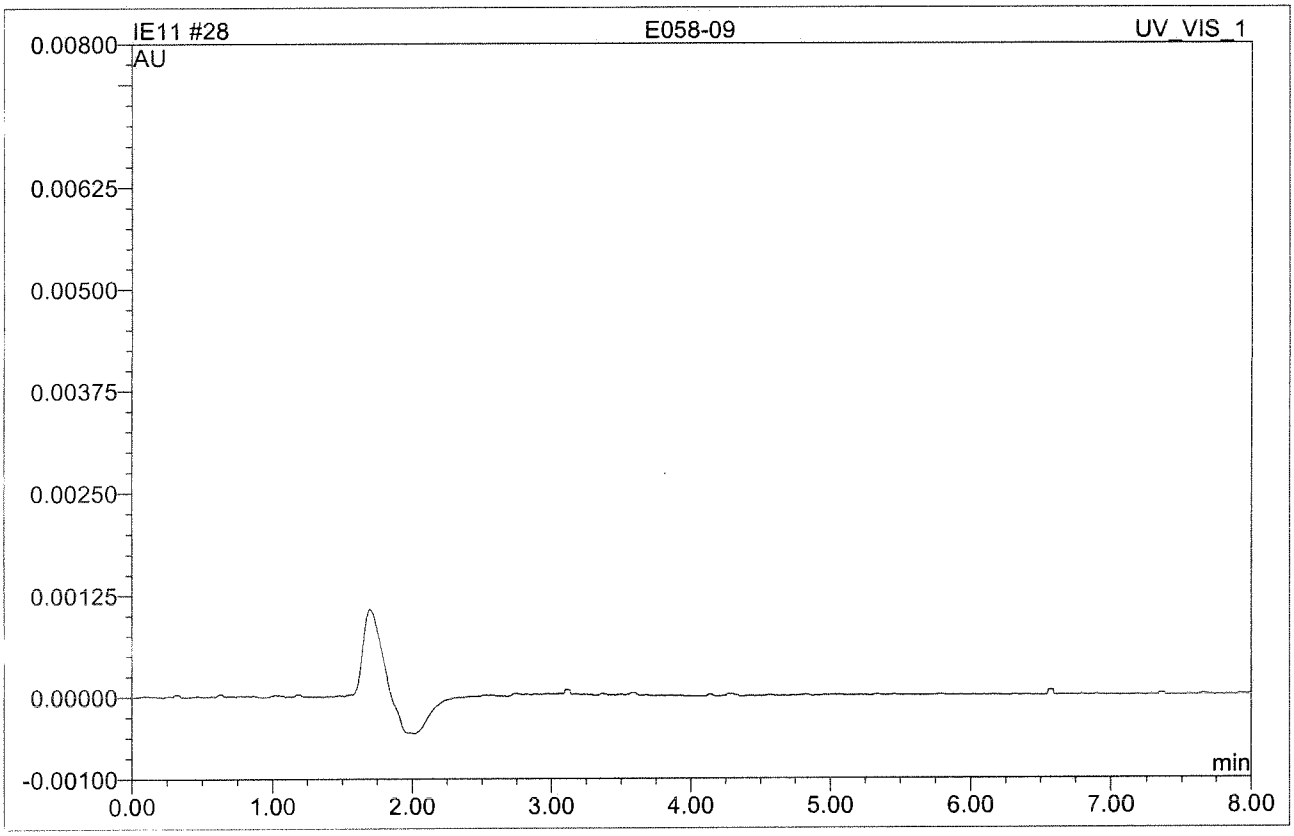


No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.82 X	Cr6	0.0003010	0.0000980	100.00	0.991	BMB*^
Total:			0.000	0.000	100.00	0.991	

x out of RT window

IE11 017 E058-09

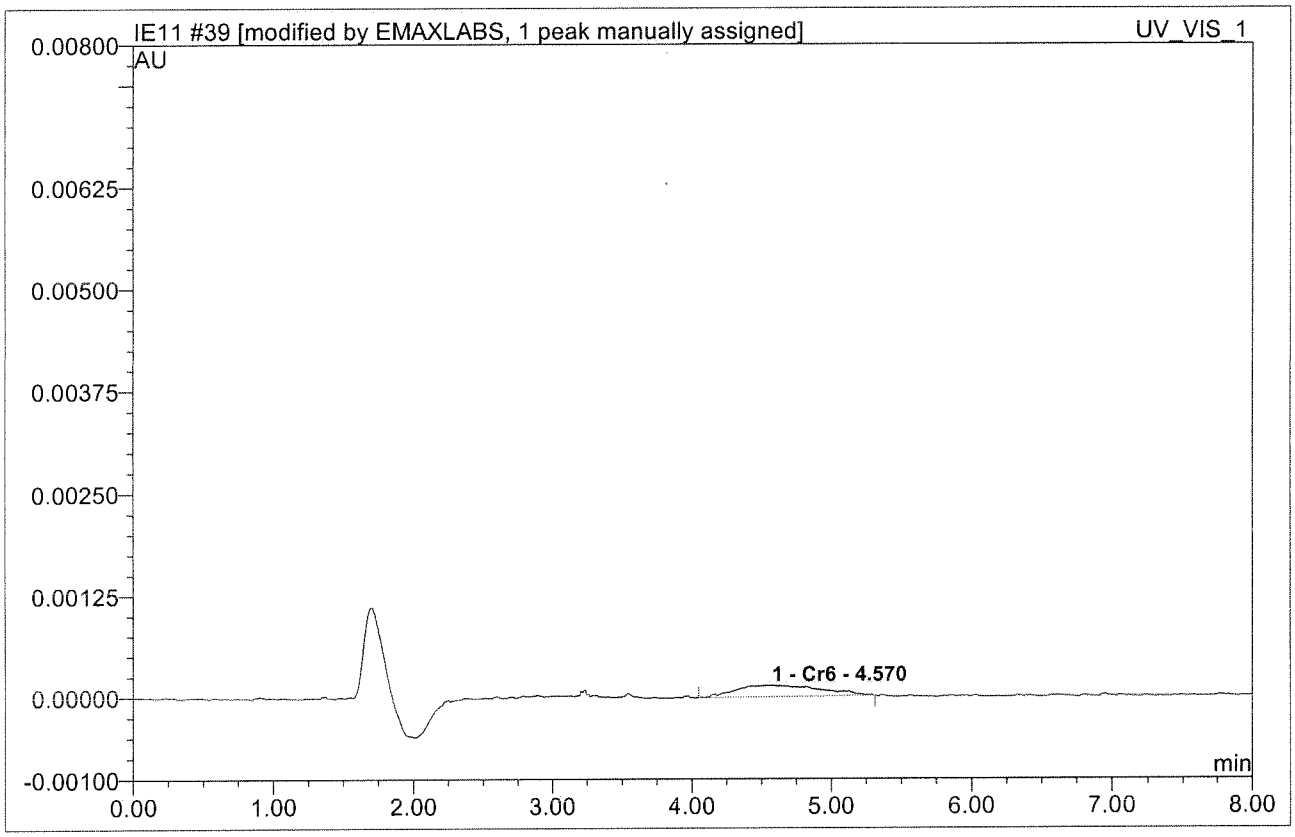
Sample Name:	**E058-09**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 13:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



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

IE11 028 E058-09M

Sample Name:	**E058-09M**	*Injection Volume:*	**250.0**
Vial Number:	**0**	*Channel:*	**UV_VIS_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**Cr6 Program**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC59E08**	*Dilution Factor:*	**1**
Recording Time:	**5/11/2017 15:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**8.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height AU	Area AU*min	Rel.Area %	Amount	Type
1	4.57 X	Cr6	0.0001430	0.0000995	100.00	1.006	BMB*^
Total:			0.000	0.000	100.00	1.006	

out of RT window

May 11, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N023998

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 25, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Litucas for

Puri Romualdo
Laboratory Director

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

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

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

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

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

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

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N023998-002B-MS2 and N023998-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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

ASSET Laboratories

Date: *11-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N023998
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023998-001A	PE-01-0417	Groundwater	4/25/2017 3:20:00 PM	4/25/2017	5/11/2017
N023998-001B	PE-01-0417	Groundwater	4/25/2017 3:20:00 PM	4/25/2017	5/11/2017
N023998-001C	PE-01-0417	Groundwater	4/25/2017 3:20:00 PM	4/25/2017	5/11/2017
N023998-001D	PE-01-0417	Groundwater	4/25/2017 3:20:00 PM	4/25/2017	5/11/2017
N023998-002A	TW-03D-0417	Groundwater	4/25/2017 3:00:00 PM	4/25/2017	5/11/2017
N023998-002B	TW-03D-0417	Groundwater	4/25/2017 3:00:00 PM	4/25/2017	5/11/2017
N023998-002C	TW-03D-0417	Groundwater	4/25/2017 3:00:00 PM	4/25/2017	5/11/2017
N023998-002D	TW-03D-0417	Groundwater	4/25/2017 3:00:00 PM	4/25/2017	5/11/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:20:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170426A**	QC Batch: **R114889**			PrepDate			Analyst: **LR**
Specific Conductance	3900	0.10	0.10		umhos/cm	1	4/26/2017 10:00 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170426A**	QC Batch: **R114889**			PrepDate			Analyst: **LR**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	4/26/2017 10:00 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N023998-002CDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**114889**
Client ID:	**ZZZZZZ**	Batch ID:	**R114889**	TestNo:	**EPA 120.1**			Analysis Date:	**4/26/2017**	SeqNo:	**2629773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7470.000	0.10						7450	0.268	10	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170426B**	QC Batch: **R114890**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	4/26/2017 10:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	4/26/2017 10:35 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170426B**	QC Batch: **R114890**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	4/26/2017 10:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	4/26/2017 10:35 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N023998-002CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **114890**
Client ID: **ZZZZZZ** Batch ID: **R114890** TestNo: **SM4500-H+B** Analysis Date: **4/26/2017** SeqNo: **2629776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.330	0.10						7.280	0.684	10	H
Temp. at time of pH Analysis	16.200	0.10						16.30	0.615	10	H

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:20:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170426F**	QC Batch: **62048**			PrepDate	**4/26/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2400	25	25		mg/L	1	4/26/2017 01:03 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170426F**	QC Batch: **62048**			PrepDate	**4/26/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	4/26/2017 01:03 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-62048**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **4/26/2017**	RunNo: **114894**
Client ID: **LCSW**	Batch ID: **62048**	TestNo: **SM2540C**		Analysis Date: **4/26/2017**	SeqNo: **2631757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID **MB-62048**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **4/26/2017**	RunNo: **114894**
Client ID: **PBW**	Batch ID: **62048**	TestNo: **SM2540C**		Analysis Date: **4/26/2017**	SeqNo: **2631758**

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

Sample ID **N023998-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **4/26/2017**	RunNo: **114894**
Client ID: **ZZZZZZ**	Batch ID: **62048**	TestNo: **SM2540C**		Analysis Date: **4/26/2017**	SeqNo: **2631762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4505.000	50						4485	0.445	5	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_170504C** QC Batch: **62096** PrepDate **5/1/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	120000	28	500		µg/L	1	5/4/2017 03:54 PM
Iron	ND	1.8	20		µg/L	1	5/4/2017 03:54 PM
Magnesium	25000	4.4	100		µg/L	1	5/4/2017 03:54 PM
Sodium	700000	1300	25000		µg/L	50	5/10/2017 06:00 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_170504C** QC Batch: **62096**					PrepDate	**5/1/2017**	Analyst: **CEI**
Calcium	220000	28	500		µg/L	1	5/4/2017 04:22 PM
Iron	ND	1.8	20		µg/L	1	5/4/2017 04:22 PM
Magnesium	30000	4.4	100		µg/L	1	5/4/2017 04:22 PM
Sodium	1600000	1300	25000		µg/L	50	5/10/2017 06:10 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-62096**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **PBW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	6.975	20									
Magnesium	ND	100									

Sample ID **LCS1-62096**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **LCSW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9495.066	500	10000	0	95.0	85	115				
Iron	105.401	20	100.0	0	105	85	115				
Magnesium	9795.730	100	10000	0	98.0	85	115				

Sample ID **N023998-001B-MS1**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	125011.400	500	10000	116900	80.6	75	125				
Iron	113.273	20	100.0	6.352	107	75	125				
Magnesium	34100.428	100	10000	25140	89.6	75	125				

Sample ID **N023998-001B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124686.234	500	10000	116900	77.4	75	125	125000	0.260	20	
Iron	107.784	20	100.0	6.352	101	75	125	113.3	4.97	20	
Magnesium	33548.649	100	10000	25140	84.1	75	125	34100	1.63	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-62096	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115123		
Client ID:	PBW	Batch ID:	62096	TestNo:	EPA 200.7			Analysis Date:	5/10/2017	SeqNo:	2638579		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		ND	500										

Sample ID	LCS2-62096	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115123		
Client ID:	LCSW	Batch ID:	62096	TestNo:	EPA 200.7			Analysis Date:	5/10/2017	SeqNo:	2638580		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		19378.056	500	20000	0	96.9	85	115					

Sample ID	N023998-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115123		
Client ID:	ZZZZZZ	Batch ID:	62096	TestNo:	EPA 200.7			Analysis Date:	5/10/2017	SeqNo:	2638593		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		1663449.239	25000	20000	1606000	289	75	125				S	

Sample ID	N023998-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115123		
Client ID:	ZZZZZZ	Batch ID:	62096	TestNo:	EPA 200.7			Analysis Date:	5/10/2017	SeqNo:	2638594		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		1684352.033	25000	20000	1606000	394	75	125	1663000	1.25	20	S	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:20:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B**	QC Batch: **62097**				PrepDate	**5/1/2017**	Analyst: **CEI**
Manganese	110	0.28	2.5		µg/L	5	5/3/2017 12:28 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170502B** QC Batch: **62097** PrepDate **5/1/2017** Analyst: **CEI**							
Manganese	12	0.056	0.50		µg/L	1	5/3/2017 01:24 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-62097**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **PBW**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634747**

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

Sample ID **LCS-62097**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **LCSW**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.118	0.50	100.0	0	99.1	85	115				

Sample ID **N023998-001B-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	222.474	2.5	100.0	109.5	113	75	125				

Sample ID **N023998-001B-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	214.811	2.5	100.0	109.5	105	75	125	222.5	3.51	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170426A**	QC Batch: **R114888**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.53	0.066	0.20		µg/L	1	4/26/2017 10:05 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B**	QC Batch: **62097**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2017 12:22 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170426A** QC Batch: **R114888**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	560	6.6	20		µg/L	100	4/26/2017 10:33 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	570	0.096	5.0		µg/L	5	5/3/2017 01:29 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-62097	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	PBW	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634672

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

Sample ID	LCS-62097	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	LCSW	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.004	1.0	10.00	0	100	85	115				

Sample ID	N023998-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634679

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.028	1.0	10.00	0.4171	86.1	75	125				

Sample ID	N023998-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634681

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.4171	91.5	75	125	9.028	5.82	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R114888	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	PBW	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629738

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

Sample ID	LCS-R114888	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	LCSW	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629739

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.053	0.20	5.000	0	101	90	110				

Sample ID	N023998-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629741

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.499	0.20						0.5323	6.44	20	

Sample ID	N023998-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629742

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.527	0.20	1.000	0.5323	99.4	90	110				

Sample ID	N023998-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629744

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1063.230	20	500.0	557.9	101	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N023998-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629745

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1054.460	20	500.0	557.9	99.3	90	110	1063	0.828	20	

Sample ID	N023999-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629747

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	930.860	20	500.0	434.6	99.2	90	110				

Sample ID	N023999-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629751

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11819.400	200	5000	6775	101	90	110				

Sample ID	N023999-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:20:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170426E**	QC Batch: **R114893**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	4/26/2017 01:45 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170426E**	QC Batch: **R114893**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	4/26/2017 01:45 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R114893**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **114893**			
Client ID: **LCSW**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**			SeqNo: **2629762**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103.211	5.0	100.0	0	103	85	115				

Sample ID **MB-R114893**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **114893**			
Client ID: **PBW**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**			SeqNo: **2629763**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N023998-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **114893**			
Client ID: **ZZZZZZ**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**			SeqNo: **2629765**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	224.771	5.0						227.1	1.02	30	

Sample ID **N023998-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **114893**			
Client ID: **ZZZZZZ**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**			SeqNo: **2629767**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	266.055	5.0	100.0	161.7	104	75	125				

Sample ID **N023998-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **114893**			
Client ID: **ZZZZZZ**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**			SeqNo: **2629768**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	266.055	5.0	100.0	161.7	104	75	125	266.1	0	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170426A** QC Batch: **R114910**				PrepDate			Analyst: **RAB**
Chloride	990	0.72	100		mg/L	200	4/26/2017 10:28 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170426A** QC Batch: **R114910**				PrepDate			Analyst: **RAB**
Sulfate	370	0.64	25		mg/L	50	4/26/2017 11:45 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170426A** QC Batch: **R114910**				PrepDate			Analyst: **RAB**
Chloride	2200	1.8	250		mg/L	500	4/26/2017 11:30 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170426A** QC Batch: **R114910**				PrepDate			Analyst: **RAB**
Sulfate	520	0.64	25		mg/L	50	4/26/2017 12:15 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R114910_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	PBW	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.123	0.50									

Sample ID	LCS-R114910_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	LCSW	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630463

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.013	0.50	2.000	0	101	90	110				

Sample ID	N023998-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630465

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	986.920	100						990.6	0.372	20	

Sample ID	N023998-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1372.740	100	400.0	990.6	95.5	80	120				

Sample ID	N023998-001CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1390.360	100	400.0	990.6	99.9	80	120	1373	1.28	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R114910_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	PBW	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630477

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

Sample ID	LCS-R114910_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	LCSW	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630478

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.932	0.50	4.000	0	98.3	90	110				

Sample ID	N023998-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	367.415	25						367.5	0.0354	20	

Sample ID	N023998-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630484

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	574.695	25	200.0	367.5	104	80	120				

Sample ID	N023998-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	573.035	25	200.0	367.5	103	80	120	574.7	0.289	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:20:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.0	0.11	0.25		mg/L	5	5/3/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115019	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	PBW	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635108

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

Sample ID	LCS-R115019	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	LCSW	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.7	85	115				

Sample ID	N023998-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	ZZZZZZ	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635111

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

Sample ID	N023998-001DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	ZZZZZZ	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.7	75	125				

Sample ID	N023998-001DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	ZZZZZZ	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.542	0.050	0.5000	0	108	75	125	0.4986	8.40	20	

Qualifiers:

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

Calculations are based on raw values

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

CHAIN OF CUSTODY RECORD

Contact us.
Nevada 4151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California. 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 1

| | | |

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/25/2017	Workorder:	N023998
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: ASSET Packing Material Used: None

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

Sample Receipt Checklist

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

Comments: Sample for pH was pastholding time upon receipt.

Checklist Completed By: YR 5/2/2017

Reviewed By: MBC 5/2/2017

ASSET Laboratories

WORK ORDER Summary

25-Apr-17

WorkOrder: N023998

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023998-001A	PE-01-0417	4/25/2017 3:20:00 PM	5/9/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023998-001B			5/9/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/9/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/9/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023998-001C			5/9/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/9/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/9/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/9/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/9/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/9/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/9/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/9/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N023998-001D			5/9/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023998-002A	TW-03D-0417	4/25/2017 3:00:00 PM	5/9/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023998-002B			5/9/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/9/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/9/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023998-002C			5/9/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

5/11/2017
for

ASSET Laboratories

WORK ORDER Summary

25-Apr-17

WorkOrder: N023998

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023998-002C	TW-03D-0417	4/25/2017 3:00:00 PM	5/9/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			5/9/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/9/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/9/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/9/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/9/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/9/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N023998-002D			5/9/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023998-003A	FOLDER	5/9/2017	5/9/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/9/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N023998

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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May 11, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N023998

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

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 25, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Ribucas for

Puri Romualdo
Laboratory Director

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

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N023998

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

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

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

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

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

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N023998-002B-MS2 and N023998-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *11-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N023998
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023998-001A	PE-01-0417	Groundwater	4/25/2017 3:20:00 PM	4/25/2017	5/11/2017
N023998-001B	PE-01-0417	Groundwater	4/25/2017 3:20:00 PM	4/25/2017	5/11/2017
N023998-001C	PE-01-0417	Groundwater	4/25/2017 3:20:00 PM	4/25/2017	5/11/2017
N023998-001D	PE-01-0417	Groundwater	4/25/2017 3:20:00 PM	4/25/2017	5/11/2017
N023998-002A	TW-03D-0417	Groundwater	4/25/2017 3:00:00 PM	4/25/2017	5/11/2017
N023998-002B	TW-03D-0417	Groundwater	4/25/2017 3:00:00 PM	4/25/2017	5/11/2017
N023998-002C	TW-03D-0417	Groundwater	4/25/2017 3:00:00 PM	4/25/2017	5/11/2017
N023998-002D	TW-03D-0417	Groundwater	4/25/2017 3:00:00 PM	4/25/2017	5/11/2017

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170426A**	QC Batch: **R114889**			PrepDate			Analyst: **LR**
Specific Conductance	3900	0.10	0.10		umhos/cm	1	4/26/2017 10:00 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170426A**	QC Batch: **R114889**			PrepDate			Analyst: **LR**
Specific Conductance	7400	0.10	0.10		umhos/cm	1	4/26/2017 10:00 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N023998-002CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	114889
Client ID:	ZZZZZZ	Batch ID:	R114889	TestNo:	EPA 120.1			Analysis Date:	4/26/2017	SeqNo:	2629773

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7470.000	0.10						7450	0.268	10	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170426B**	QC Batch: **R114890**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	4/26/2017 10:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	4/26/2017 10:35 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170426B**	QC Batch: **R114890**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	4/26/2017 10:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	4/26/2017 10:35 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N023998-002CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **114890**
Client ID: **ZZZZZZ** Batch ID: **R114890** TestNo: **SM4500-H+B** Analysis Date: **4/26/2017** SeqNo: **2629776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.330	0.10						7.280	0.684	10	H
Temp. at time of pH Analysis	16.200	0.10						16.30	0.615	10	H

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170426F**	QC Batch: **62048**				PrepDate	**4/26/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2400	25	25		mg/L	1	4/26/2017 01:03 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170426F**	QC Batch: **62048**				PrepDate	**4/26/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4500	50	50		mg/L	1	4/26/2017 01:03 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-62048**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **4/26/2017**	RunNo: **114894**
Client ID: **LCSW**	Batch ID: **62048**	TestNo: **SM2540C**		Analysis Date: **4/26/2017**	SeqNo: **2631757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	959.000	10	1000	0	95.9	80	120				

Sample ID **MB-62048**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **4/26/2017**	RunNo: **114894**
Client ID: **PBW**	Batch ID: **62048**	TestNo: **SM2540C**		Analysis Date: **4/26/2017**	SeqNo: **2631758**

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

Sample ID **N023998-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **4/26/2017**	RunNo: **114894**
Client ID: **ZZZZZZ**	Batch ID: **62048**	TestNo: **SM2540C**		Analysis Date: **4/26/2017**	SeqNo: **2631762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4505.000	50						4485	0.445	5	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_170504C** QC Batch: **62096** PrepDate **5/1/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	120000	28	500		µg/L	1	5/4/2017 03:54 PM
Iron	ND	1.8	20		µg/L	1	5/4/2017 03:54 PM
Magnesium	25000	4.4	100		µg/L	1	5/4/2017 03:54 PM
Sodium	700000	1300	25000		µg/L	50	5/10/2017 06:00 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_170504C** QC Batch: **62096**				PrepDate	**5/1/2017**	Analyst: **CEI**	
Calcium	220000	28	500		µg/L	1	5/4/2017 04:22 PM
Iron	ND	1.8	20		µg/L	1	5/4/2017 04:22 PM
Magnesium	30000	4.4	100		µg/L	1	5/4/2017 04:22 PM
Sodium	1600000	1300	25000		µg/L	50	5/10/2017 06:10 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-62096**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **PBW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	6.975	20									
Magnesium	ND	100									

Sample ID **LCS1-62096**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **LCSW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9495.066	500	10000	0	95.0	85	115				
Iron	105.401	20	100.0	0	105	85	115				
Magnesium	9795.730	100	10000	0	98.0	85	115				

Sample ID **N023998-001B-MS1**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	125011.400	500	10000	116900	80.6	75	125				
Iron	113.273	20	100.0	6.352	107	75	125				
Magnesium	34100.428	100	10000	25140	89.6	75	125				

Sample ID **N023998-001B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124686.234	500	10000	116900	77.4	75	125	125000	0.260	20	
Iron	107.784	20	100.0	6.352	101	75	125	113.3	4.97	20	
Magnesium	33548.649	100	10000	25140	84.1	75	125	34100	1.63	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-62096	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115123
Client ID:	PBW	Batch ID:	62096	TestNo:	EPA 200.7			Analysis Date:	5/10/2017	SeqNo:	2638579

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

Sample ID	LCS2-62096	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115123
Client ID:	LCSW	Batch ID:	62096	TestNo:	EPA 200.7			Analysis Date:	5/10/2017	SeqNo:	2638580

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19378.056	500	20000	0	96.9	85	115				

Sample ID	N023998-002B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115123
Client ID:	ZZZZZZ	Batch ID:	62096	TestNo:	EPA 200.7			Analysis Date:	5/10/2017	SeqNo:	2638593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1663449.239	25000	20000	1606000	289	75	125				S

Sample ID	N023998-002B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115123
Client ID:	ZZZZZZ	Batch ID:	62096	TestNo:	EPA 200.7			Analysis Date:	5/10/2017	SeqNo:	2638594

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1684352.033	25000	20000	1606000	394	75	125	1663000	1.25	20	S

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170502B** QC Batch: **62097** PrepDate **5/1/2017** Analyst: **CEI**							
Manganese	110	0.28	2.5		µg/L	5	5/3/2017 12:28 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170502B** QC Batch: **62097** PrepDate **5/1/2017** Analyst: **CEI**							
Manganese	12	0.056	0.50		µg/L	1	5/3/2017 01:24 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-62097**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **PBW**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634747**

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

Sample ID **LCS-62097**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **LCSW**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.118	0.50	100.0	0	99.1	85	115				

Sample ID **N023998-001B-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	222.474	2.5	100.0	109.5	113	75	125				

Sample ID **N023998-001B-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	214.811	2.5	100.0	109.5	105	75	125	222.5	3.51	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170426A**	QC Batch: **R114888**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.53	0.066	0.20		µg/L	1	4/26/2017 10:05 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B**	QC Batch: **62097**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/3/2017 12:22 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170426A**	QC Batch: **R114888**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	560	6.6	20		µg/L	100	4/26/2017 10:33 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B**	QC Batch: **62097**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	570	0.096	5.0		µg/L	5	5/3/2017 01:29 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-62097	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	PBW	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634672

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

Sample ID	LCS-62097	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	LCSW	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.004	1.0	10.00	0	100	85	115				

Sample ID	N023998-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634679

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.028	1.0	10.00	0.4171	86.1	75	125				

Sample ID	N023998-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634681

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.4171	91.5	75	125	9.028	5.82	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R114888	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	PBW	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629738		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R114888	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	LCSW	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629739		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.053	0.20	5.000	0	101	90	110					

Sample ID	N023998-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629741		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		0.499	0.20						0.5323	6.44	20		

Sample ID	N023998-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629742		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.527	0.20	1.000	0.5323	99.4	90	110					

Sample ID	N023998-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629744		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1063.230	20	500.0	557.9	101	90	110					

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N023998-002AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629745

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1054.460	20	500.0	557.9	99.3	90	110	1063	0.828	20	

Sample ID	N023999-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629747

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	930.860	20	500.0	434.6	99.2	90	110				

Sample ID	N023999-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629751

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11819.400	200	5000	6775	101	90	110				

Sample ID	N023999-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629753

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170426E**	QC Batch: **R114893**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	4/26/2017 01:45 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170426E**	QC Batch: **R114893**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	4/26/2017 01:45 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R114893**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114893**
Client ID: **LCSW**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**	SeqNo: **2629762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103.211	5.0	100.0	0	103	85	115				

Sample ID **MB-R114893**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114893**
Client ID: **PBW**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**	SeqNo: **2629763**

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

Sample ID **N023998-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114893**
Client ID: **ZZZZZZ**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**	SeqNo: **2629765**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	224.771	5.0						227.1	1.02	30	

Sample ID **N023998-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114893**
Client ID: **ZZZZZZ**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**	SeqNo: **2629767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	266.055	5.0	100.0	161.7	104	75	125				

Sample ID **N023998-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114893**
Client ID: **ZZZZZZ**	Batch ID: **R114893**	TestNo: **SM 2320 B**		Analysis Date: **4/26/2017**	SeqNo: **2629768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	266.055	5.0	100.0	161.7	104	75	125	266.1	0	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-001

Client Sample ID: PE-01-0417
Collection Date: 4/25/2017 3:20:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170426A** QC Batch: **R114910**				PrepDate			Analyst: **RAB**
Chloride	990	0.72	100		mg/L	200	4/26/2017 10:28 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170426A** QC Batch: **R114910**				PrepDate			Analyst: **RAB**
Sulfate	370	0.64	25		mg/L	50	4/26/2017 11:45 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170426A** QC Batch: **R114910**				PrepDate			Analyst: **RAB**
Chloride	2200	1.8	250		mg/L	500	4/26/2017 11:30 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170426A** QC Batch: **R114910**				PrepDate			Analyst: **RAB**
Sulfate	520	0.64	25		mg/L	50	4/26/2017 12:15 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R114910_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	PBW	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.123	0.50									

Sample ID	LCS-R114910_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	LCSW	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630463

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.013	0.50	2.000	0	101	90	110				

Sample ID	N023998-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630465

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	986.920	100						990.6	0.372	20	

Sample ID	N023998-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630466

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1372.740	100	400.0	990.6	95.5	80	120				

Sample ID	N023998-001CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630467

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1390.360	100	400.0	990.6	99.9	80	120	1373	1.28	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R114910_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	PBW	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630477

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

Sample ID	LCS-R114910_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	LCSW	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630478

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.932	0.50	4.000	0	98.3	90	110				

Sample ID	N023998-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	367.415	25						367.5	0.0354	20	

Sample ID	N023998-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630484

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	574.695	25	200.0	367.5	104	80	120				

Sample ID	N023998-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114910
Client ID:	ZZZZZZ	Batch ID:	R114910	TestNo:	EPA 300.0			Analysis Date:	4/26/2017	SeqNo:	2630485

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	573.035	25	200.0	367.5	103	80	120	574.7	0.289	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0417
Lab Order:	N023998	**Collection Date:**	4/25/2017 3:20:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N023998-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023998
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N023998-002

Client Sample ID: TW-03D-0417
Collection Date: 4/25/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.0	0.11	0.25		mg/L	5	5/3/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
MB-R115019	**MBLK**	**4500N03F_W**	**mg/L**		**115019**
Client ID: **PBW**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635108**

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

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
LCS-R115019	**LCS**	**4500N03F_W**	**mg/L**		**115019**
Client ID: **LCSW**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.7	85	115				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N023998-001DDUP	**DUP**	**4500N03F_W**	**mg/L**		**115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635111**

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

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N023998-001DMS	**MS**	**4500N03F_W**	**mg/L**		**115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.7	75	125				

Sample ID	SampType	TestCode	Units	Prep Date	RunNo
N023998-001DMSD	**MSD**	**4500N03F_W**	**mg/L**		**115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.542	0.050	0.5000	0	108	75	125	0.4986	8.40	20	

Qualifiers:

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

SAMPLE RECEIVING ITEMS

CHAIN OF CUSTODY RECORD

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ASSET Laboratories

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

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

Cooler Received/Opened On:	4/25/2017	Workorder:	N023998
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	ASSET	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments: Sample for pH was pastholding time upon receipt.

Checklist Completed By: YR 5/2/2017

Reviewed By: MBC 5/2/2017

ASSET Laboratories

WORK ORDER Summary

25-Apr-17

WorkOrder: N023998

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023998-001A	PE-01-0417	4/25/2017 3:20:00 PM	5/9/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023998-001B			5/9/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/9/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/9/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023998-001C			5/9/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/9/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/9/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/9/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/9/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/9/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/9/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/9/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N023998-001D			5/9/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023998-002A	TW-03D-0417	4/25/2017 3:00:00 PM	5/9/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023998-002B			5/9/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/9/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/9/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023998-002C			5/9/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

5/11/2017
for

ASSET Laboratories

WORK ORDER Summary

25-Apr-17

WorkOrder: N023998

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 4/25/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023998-002C	TW-03D-0417	4/25/2017 3:00:00 PM	5/9/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			5/9/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/9/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/9/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/9/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/9/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/9/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N023998-002D			5/9/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023998-003A	FOLDER	5/9/2017	5/9/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/9/2017		Folder	Folder	☐	☐	☐	LAB

List of Analyst

ASSET Laboratories Work Order: **N023998**

NAME	TEST METHOD
Claire Ignacio	EPA 200.7, EPA 200.8
Ria Abes	EPA 218.6, EPA 300.0
Ryan Balilu	SM 4500NO3F
Lilia Ramit	SM 2540C, SM 4500-H+B, EPA 120.1, SM 2320B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R114889 **Analyst:** LSR

ASSET #: N023998 **Date Analyzed:** 4/26/2017

Method: EPA 120.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer: Julia Ramit Date: 5/1/2017

2nd Level Reviewer: 5/9/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 4/21/17 1145

Analyst: LSR

Standard	Std ID	Reading	Comments
976 µS/cm	CNW-170303A	9.92 mS/cm @ 21.4°C	% Rec: (90-110%)
1413	161214B	1412 @ 21.6°C	
10043	161220I	10000 @ 21.8°C	
99938	161220J	98800 @ 21.8°C	

	Sample ID	Matrix	Reading	Comments
1	NO23943-001A	H2O	310 @ 19.5°C	
2	2A		340 @ 19.6°C	
3	3A		311 @ 19.3°C	
4	1A DUP		307 @ 19.5°C	
5	~~BLANK~~			
6				
7				
8	1413 µS/cm	CNW-170125F	1453 µS/cm @ 20.9°C	
9	10053	160909F	10150 @ 21.5°C	
10	99899	161104A	100500 @ 21.5°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 4/26/17 1000

Analyst: LSR

Standard	Std ID	Reading	Comments
976 µS/cm	CNW-170303A	9.80 mS/cm @ 21.2°C	% Rec: (90-110%)
1413	161214B	1414 @ 21.3°C	
10043	161220I	10020 @ 21.3°C	
99938	161220J	99300 @ 21.5°C	

	Sample ID	Matrix	Reading	Comments
1	NO23098.001C	H2O	3890 @ 18.5°C	
2	2C		7460 @ 18.1°C	
3	2C DUP		7470 @ 17.9°C	
4				
5				
6				
7	1413 µS/cm	CNW-170125F	1453 µS/cm @ 20.7°C	
8	10,000	170125E	10200 @ 20.9°C	
9	99899	161104A	101900 @ 21.0°C	
10				Julia Ramit 5/1/2017
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R114890 **Instrument ID:** pH meter

ASSET #: N023998 **Analyst:** LSR

Date Analyzed: 26-Apr

Method: EPA 150.1

pH Meter Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer Julia Ramit Date: 4/28/2017

2nd Level Reviewer 5/9/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 4/26/17

Analyst: _____

Standard	Std ID	pH	Comments
Buffer 7	CHW-170125C	6.96 @ 20.5°C	SLOPE: 97.4% LR
Buffer 4	170125B	3.99 @ 20.6°C	97.4%
Buffer 10	161214A	10.05 @ 20.6°C	

	Sample ID	Matrix	pH	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer (7) 4, 10	CHW-170125B		Accept: +/-0.1 pH units from expected value

(Circle one)

Date: 4/26/17 1035

Analyst: LR

Standard	Std ID	pH	Comments
Buffer 7	CHW-170125C	6.96 @ 20.5°C	SLOPE: 97.4%
Buffer 4	170125B	3.99 @ 20.6°C	
Buffer 10	161214A	10.05 @ 20.6°C	

	Sample ID	Matrix	pH	Comments
1	NO23998-001C	H2O	7.46 @ 16.6°C	
2	2C	"	7.28 @ 16.2°C	
3	2CDUP	"	7.33 @ 16.2°C	
4				
5				
6				
7				Sunita Ramit
8				4/28/2017
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer (7) 4, 10	CHW-170125B	6.96 @ 21.3°C	Accept: +/-0.1 pH units from expected value

(Circle one)

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62048 **Analyst:** LSR

ASSET #: N023998 **Date Analyzed:** 4/26/2017

Method: EPA 160.1

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer: Julia Ramit Date: 4/28/2017

2nd Level Reviewer: 5/9/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

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

FORMULA:

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

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

Where:

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

For **N023998-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(60.9018–60.8077)*1000000}{40}$$
$$= 2352.5 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2400 mg/L

Divia Ramit 4/28/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/26/2017 1:03:44 P**
Prep End Date: **4/27/2017 10:50:00**

Reviewed/ Date: 5/9/2017
Initials/ Date: Lilia Ramit 4/28/2017

Prep Batch **62048** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62048	Water		100	☐	0	0	100	1.000		
MB-62048	Water		100	☐	0	0	100	1.000		
N023988-001B	Groundwater		20	☐	0	0	100	5.000		
N023998-001C	Groundwater		40	☐	0	0	100	2.500		
N023998-002C	Groundwater		20	☐	0	0	100	5.000		
N023998-002C-DU	Groundwater		20	☐	0	0	100	5.000		

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

Number	Reagent Name
8943	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170411A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **4/26/2017 1:03:44 P**
Prep End Date:

Reviewed/ Date: _____
Initials/ Date: Lilia Ramit 4/28/2017

Prep Batch **62048** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62048	Water	IW8171041IA	100	☐	0	0	100	1.000		
MB-62048	Water		100	☐	0	0	100	1.000		
N023988-001B	Groundwater	6620	100	120 ☐	0	0	100	1.000		
N023998-001C	Groundwater	3890	100	140 ☐	0	0	100	1.000		
N023998-002C	Groundwater	7450	100	120 ☐	0	0	100	1.000		
N023998-002C-DU	Groundwater	1	100	120 ☐	0	0	100	1.000		

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

8943

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
4/26/17 1303 G	MB 62048	100	53.7500 53.7504	53.7508 53.7507	
2	LCS 62048	100	54.9328 54.9332	55.0287 55.0291	
mH	N023988-001B	20	61.6302 61.6305	61.7199 61.7195	
DD	N023998-001C	40	60.8074 60.8077	60.9016 60.9018	
IA	2C	20	60.3350 60.3354	60.4248 60.4251	
AD	2C DUP	20	59.5916 59.5919	59.6820 59.6820	
Julia Ramit 4/28/2017					

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NEVADA | P:702.307.2659 F:702.307.2691
1351 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00
ORELAP/NELAP Cert 4040

TOTAL DISSOLVED SOLIDS, TDS

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

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

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
4/27/2017									
MB-62048	100	53.7504	53.7507	3	1	3			MBLK
LCS-62048	100	54.9332	55.0291	959	1	959			LCS
N023988-001B	20	61.6305	61.7195	890	5	4450	6620	0.672	SAMP
N023998-001C	40	60.8077	60.9018	941	2.5	2352.5	3890	0.605	SAMP
N023998-002C	20	60.3354	60.4251	897	5	4485	7450	0.602	SAMP
N023998-002CDUP	20	59.5919	59.682	901	5	4505	7450	0.605	DUP

Julia Ramit 4/28/2017

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62096
ASSET #: N023998

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/4/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X				
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X				
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Fe in LLICV and LLCCV1 failed, bias high. However Fe is ND.

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

1st Level Reviewer 5/11/2017 Date: —

2nd Level Reviewer 5/11/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62096
ASSET #: N023998

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/10/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N023998-002B PS/MS/MSD failed. However LCS & DT passed criteria.

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

1st Level Reviewer 5/11/2017 Date: –

2nd Level Reviewer 5/11/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N023998-001B** , the concentration ir ug/L is calculated as follows:

Calcium , ug/L = 116.949 * 1 * (25/25) * 1000

Calcium , ug/L = 116949

Reporting results in two significant figures,

Calcium , ug/L = 120000

% RSD SUMMARY

RSD SUMMARY: 170504C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	6.6	15	PASS
Standard1	ICAL	1	Ca	0.2	6.36	15	PASS
Standard2	ICAL	1	Ca	1	1.058	15	PASS
Standard3	ICAL	1	Ca	2	1.97	15	PASS
Standard4	ICAL	1	Ca	5	1.22	15	PASS
Standard5	ICAL	1	Ca	7.5	0.63	15	PASS
Standard6	ICAL	1	Ca	10	0.46	15	PASS
Standard7	ICAL	1	Ca	20	0.13	15	PASS
ICV	ICV	1	Ca	9.87	0.67	15	PASS
ICB	ICB	1	Ca	-0.022	75.57	15	<PQL
LLICV	CCV1	1	Ca	0.21	15.91	20	PASS
ICSA1	ICSA	1	Ca	500.18	0.13	15	PASS
ICSAB1	ICSAB	1	Ca	540.94	0.13	15	PASS
LLICV	CCV1	1	Ca	0.38	33.39	20	<PQL
MB-62096	MBLK	1	Ca	0.019	122.92	15	<PQL
LCS1-62096	LCS	1	Ca	9.5	0.27	15	PASS
N023998-001B	SAMP	1	Ca	116.95	0.12	15	PASS
N023998-001B	SAMP	5	Ca	24.37	0.55	15	PASS
N023998-001B-PS	PS	1	Ca	126.87	0.39	15	PASS
N023998-001B-MS1	MS	1	Ca	125.01	0.57	15	PASS
N023998-001B-MSD1	MSD	1	Ca	124.69	0.46	15	PASS
N023998-002B	SAMP	1	Ca	224.07	0.48	15	PASS
N024053-013D	SAMP	1	Ca	219.17	0.46	15	PASS
N024053-014D	SAMP	1	Ca	213.02	1.41	15	PASS
CCV1	CCV	1	Ca	9.76	0.63	15	PASS
CCB1	CCB	1	Ca	0.0024	326.58	15	<PQL
LLCCV1	CCV2	1	Ca	0.23	7.4	20	PASS
LLCCV1	CCV2	1	Ca	0.44	14.81	20	PASS
LLCCV1	CCV2	1	Ca	0.3	8.12	20	PASS
ICSA2	ICSA	1	Ca	495.59	0.056	15	PASS
ICSAB2	ICSAB	1	Ca	536.99	0.049	15	PASS
CalBlk	IBLK	1	Fe	0	7.69	15	PASS
Standard1	ICAL	1	Fe	0.02	1.38	15	PASS
Standard2	ICAL	1	Fe	0.05	0.17	15	PASS
Standard3	ICAL	1	Fe	2	0.32	15	PASS
Standard4	ICAL	1	Fe	5	1.00011	15	PASS
Standard5	ICAL	1	Fe	7.5	0.31	15	PASS
Standard6	ICAL	1	Fe	10	0.28	15	PASS
Standard7	ICAL	1	Fe	20	0.29	15	PASS
ICV	ICV	1	Fe	10.12	0.071	15	PASS
ICB	ICB	1	Fe	0.00063	229.97	15	<PQL
LLICV	CCV1	1	Fe	0.026	1.94	20	PASS

RSD SUMMARY: 170504C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA1	ICSA	1	Fe	171.99	0.43	15	PASS
ICSAB1	ICSAB	1	Fe	182.72	0.22	15	PASS
LLICV	CCV1	1	Fe	0.099	33.7	20	NR!
MB-62096	MBLK	1	Fe	0.007	23.93	15	<PQL
LCS1-62096	LCS	1	Fe	0.11	0.4	15	PASS
N023998-001B	SAMP	1	Fe	0.0064	12.74	15	PASS
N023998-001B	SAMP	5	Fe	-0.00011	555.6	15	<PQL
N023998-001B-PS	PS	1	Fe	0.11	0.72	15	PASS
N023998-001B-MS1	MS	1	Fe	0.11	0.35	15	PASS
N023998-001B-MSD1	MSD	1	Fe	0.11	1.24	15	PASS
N023998-002B	SAMP	1	Fe	0.003	14.47	15	PASS
N024053-013D	SAMP	1	Fe	0.0072	2.011	15	PASS
N024053-014D	SAMP	1	Fe	0.0025	27.71	15	<PQL
CCV1	CCV	1	Fe	10.011	0.32	15	PASS
CCB1	CCB	1	Fe	0.0046	50.32	15	<PQL
LLCCV1	CCV2	1	Fe	0.032	0.47	20	PASS
LLCCV1	CCV2	1	Fe	0.14	18.93	20	PASS
LLCCV1	CCV2	1	Fe	0.048	1.3	20	PASS
ICSA2	ICSA	1	Fe	169.54	0.39	15	PASS
ICSAB2	ICSAB	1	Fe	181.26	0.29	15	PASS
CalBlk	IBLK	1	Mg	0	4.36	15	PASS
Standard1	ICAL	1	Mg	0.1	0.42	15	PASS
Standard2	ICAL	1	Mg	1	0.38	15	PASS
Standard3	ICAL	1	Mg	2	0.33	15	PASS
Standard4	ICAL	1	Mg	5	0.9	15	PASS
Standard5	ICAL	1	Mg	7.5	0.31	15	PASS
Standard6	ICAL	1	Mg	10	0.36	15	PASS
Standard7	ICAL	1	Mg	20	0.36	15	PASS
ICV	ICV	1	Mg	10.12	0.25	15	PASS
ICB	ICB	1	Mg	-0.003	27.66	15	<PQL
LLICV	CCV1	1	Mg	0.11	0.51	20	PASS
ICSA1	ICSA	1	Mg	474.47	0.44	15	PASS
ICSAB1	ICSAB	1	Mg	508.31	0.14	15	PASS
LLICV	CCV1	1	Mg	0.3	41.73	20	NR!
MB-62096	MBLK	1	Mg	0.0023	34.87	15	<PQL
LCS1-62096	LCS	1	Mg	9.8	0.19	15	PASS
N023998-001B	SAMP	1	Mg	25.14	0.1	15	PASS
N023998-001B	SAMP	5	Mg	5.48	0.77	15	PASS
N023998-001B-PS	PS	1	Mg	34.41	0.15	15	PASS
N023998-001B-MS1	MS	1	Mg	34.1	0.32	15	PASS
N023998-001B-MSD1	MSD	1	Mg	33.55	0.18	15	PASS
N023998-002B	SAMP	1	Mg	30.16	0.38	15	PASS

RSD SUMMARY: 170504C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N024053-013D	SAMP	1	Mg	29.91	0.31	15	PASS
N024053-014D	SAMP	1	Mg	28.77	0.4	15	PASS
CCV1	CCV	1	Mg	9.76	0.31	15	PASS
CCB1	CCB	1	Mg	0.0002	701.8	15	<PQL
LLCCV1	CCV2	1	Mg	0.13	1.62	20	PASS
LLCCV1	CCV2	1	Mg	0.38	19.8	20	PASS
LLCCV1	CCV2	1	Mg	0.16	0.73	20	PASS
ICSA2	ICSA	1	Mg	462.18	0.4	15	PASS
ICSAB2	ICSAB	1	Mg	500.95	0.32	15	PASS

RSD SUMMARY: 170510A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	25.87	15	<PQL
Standard1	ICAL	1	Na	0.1	7.3	15	PASS
Standard2	ICAL	1	Na	1	0.6	15	PASS
Standard3	ICAL	1	Na	5	3.82	15	PASS
Standard4	ICAL	1	Na	10	0.28	15	PASS
Standard5	ICAL	1	Na	20	0.26	15	PASS
Standard6	ICAL	1	Na	40	0.32	15	PASS
ICV	ICV	1	Na	10.029	0.23	15	PASS
ICB	ICB	1	Na	-0.032	21.94	15	<PQL
ICSA1	ICSA	1	Na	-0.025	26.15	15	<PQL
ICSAB1	ICSAB	1	Na	9.96	0.11	15	PASS
MB-62096	MBLK	1	Na	-0.03	26.23	15	<PQL
LCS2-62096	LCS	1	Na	19.38	0.36	15	PASS
N023998-001B	SAMP	10	Na	72.97	0.092	15	PASS
N023998-002B	SAMP	10	Na	153.2	0.93	15	PASS
N024053-013D	SAMP	10	Na	150.52	0.54	15	PASS
N024053-014D	SAMP	10	Na	144.04	0.15	15	PASS
N023998-001B	SAMP	50	Na	14.096	0.17	15	PASS
N024053-013D	SAMP	50	Na	30.2	0.026	15	PASS
N024053-014D	SAMP	50	Na	28.99	0.21	15	PASS
N023998-002B	SAMP	50	Na	32.11	0.5	15	PASS
CCV1	CCV	1	Na	10.094	0.24	15	PASS
CCB1	CCB	1	Na	-0.014	55.22	15	<PQL
N023998-002B	SAMP	250	Na	31.07	0.19	15	PASS
N023998-002B-PS	PS	50	Na	31.19	0.19	15	PASS
N023998-002B-MS2	MS	50	Na	33.27	0.29	15	PASS
N023998-002B-MSD2	MSD	50	Na	33.69	0.13	15	PASS
N023998-002B	SAMP	250	Na	6.21	0.15	15	PASS
CCV2	CCV	1	Na	11.065	10.2	15	PASS
CCV2	CCV	1	Na	10.37	0.16	15	PASS
CCB2	CCB	1	Na	-0.027	22.85	15	<PQL
CCV3	CCV	1	Na	10.56	1.43	15	PASS
CCV3	CCV	1	Na	10.41	4.1	15	PASS
CCB3	CCB	1	Na	-0.028	10.66	15	PASS
ICSA2	ICSA	1	Na	-0.035	26.9	15	<PQL
ICSAB2	ICSAB	1	Na	10.29	0.11	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170504C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170306F,0.5<50mL
Standard2	MWST-170306F,1<50mL
Standard3	MWST-170306F,5<50mL
Standard4	MWST-170306F,12.5<50mL
Standard5	MWST-170306F,15<40mL
Standard6	MWST-170306F,25<50mL
Standard7	MWST-170306F
ICV	MWST-170430G
CCV	MWST-170306F,25<50mL
ICSA/ICSAB	MWST-170228D/ MWST-170430H
Int. Std. (Y)	MSST-170404Q/R
PS Spike	MWST-170107C/-161201E/-170430A/-161215A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/04/2017	02:20:04 PM
2	Standard1	ICAL	1	05/04/2017	02:24:54 PM
3	Standard2	ICAL	1	05/04/2017	02:29:43 PM
4	Standard3	ICAL	1	05/04/2017	02:34:33 PM
5	Standard4	ICAL	1	05/04/2017	02:39:25 PM
6	Standard5	ICAL	1	05/04/2017	02:45:18 PM
7	Standard6	ICAL	1	05/04/2017	02:51:10 PM
8	Standard7	ICAL	1	05/04/2017	02:56:35 PM
9	ICV	ICV	1	05/04/2017	03:02:01 PM
1	ICB	ICB	1	05/04/2017	03:07:27 PM
2	LLICV	CCV1	1	05/04/2017	03:12:17 PM
4	ICSA1	ICSA	1	05/04/2017	03:17:06 PM
5	ICSAB1	ICSAB	1	05/04/2017	03:23:09 PM
2	LLICV	CCV1	1	05/04/2017	03:31:12 PM
38	MB-62096	MBLK	1	05/04/2017	03:44:02 PM
39	LCS1-62096	LCS	1	05/04/2017	03:48:52 PM
40	N023998-001B	SAMP	1	05/04/2017	03:54:43 PM
41	N023998-001B	SAMP	5	05/04/2017	04:00:33 PM
42	N023998-001B-PS	PS	1	05/04/2017	04:05:23 PM
43	N023998-001B-MS1	MS	1	05/04/2017	04:11:15 PM
44	N023998-001B-MSD1	MSD	1	05/04/2017	04:17:08 PM
45	N023998-002B	SAMP	1	05/04/2017	04:22:59 PM
46	N024053-013D	SAMP	1	05/04/2017	04:28:51 PM
47	N024053-014D	SAMP	1	05/04/2017	04:34:43 PM
7	CCV1	CCV	1	05/04/2017	04:40:35 PM
1	CCB1	CCB	1	05/04/2017	04:46:00 PM
2	LLCCV1	CCV2	1	05/04/2017	04:50:48 PM
2	LLCCV1	CCV2	1	05/04/2017	05:05:13 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
2	LLCCV1	CCV2	1	05/04/2017	05:23:08 PM
4	ICSA2	ICSA	1	05/04/2017	05:28:34 PM
5	ICSAB2	ICSAB	1	05/04/2017	05:34:36 PM

INJECTION LOG: 170510A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170428A,0.025<50mL
Standard2	MWST-170428A,0.25<50mL
Standard3	MWST-170428A,1.25<50mL
Standard4	MWST-170428A,2.5<50mL
Standard5	MWST-170428A,5<50mL
Standard6	MWST-170428A,10<50mL
ICV	MWST-170228B
CCV	MWST-170428A,2.5<50mL
ICSA/ICSAB	MWST-170228D/-170428B
Int. Std. (Sc):	MSST-170404Q/R
PS Spike	MSST-130329D/-130329E/-170116A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/10/2017	04:53:19 AM
26	Standard1	ICAL	1	05/10/2017	04:56:37 AM
27	Standard2	ICAL	1	05/10/2017	04:59:56 AM
28	Standard3	ICAL	1	05/10/2017	05:04:02 AM
29	Standard4	ICAL	1	05/10/2017	05:07:50 AM
30	Standard5	ICAL	1	05/10/2017	05:11:39 AM
31	Standard6	ICAL	1	05/10/2017	05:15:28 AM
32	ICV	ICV	1	05/10/2017	05:19:19 AM
1	ICB	ICB	1	05/10/2017	05:23:08 AM
33	ICSA1	ICSA	1	05/10/2017	05:26:26 AM
34	ICSAB1	ICSAB	1	05/10/2017	05:29:43 AM
38	MB-62096	MBLK	1	05/10/2017	05:33:34 AM
39	LCS2-62096	LCS	1	05/10/2017	05:36:51 AM
40	N023998-001B	SAMP	10	05/10/2017	05:40:41 AM
41	N023998-002B	SAMP	10	05/10/2017	05:43:59 AM
42	N024053-013D	SAMP	10	05/10/2017	05:48:47 AM
43	N024053-014D	SAMP	10	05/10/2017	05:53:36 AM
44	N023998-001B	SAMP	50	05/10/2017	06:00:55 AM
45	N024053-013D	SAMP	50	05/10/2017	06:04:14 AM
46	N024053-014D	SAMP	50	05/10/2017	06:07:08 AM
47	N023998-002B	SAMP	50	05/10/2017	06:10:28 AM
29	CCV1	CCV	1	05/10/2017	06:13:48 AM
1	CCB1	CCB	1	05/10/2017	06:17:37 AM
48	N023998-002B	SAMP	250	05/10/2017	06:20:53 AM
49	N023998-002B-PS	PS	50	05/10/2017	06:24:12 AM
50	N023998-002B-MS2	MS	50	05/10/2017	06:29:30 AM
51	N023998-002B-MSD2	MSD	50	05/10/2017	06:33:10 AM
52	N023998-002B	SAMP	250	05/10/2017	06:36:29 AM
53	MB-62060	MBLK	1	05/10/2017	06:39:47 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	LCS-62060	LCS	1	05/10/2017	06:43:07 AM
55	N024014-001B	SAMP	1	05/10/2017	06:46:58 AM
56	N024014-001B	SAMP	5	05/10/2017	06:50:48 AM
57	N024014-001B-PS	PS	1	05/10/2017	06:54:37 AM
29	CCV2	CCV	1	05/10/2017	06:58:28 AM
29	CCV2	CCV	1	05/10/2017	07:01:21 AM
1	CCB2	CCB	1	05/10/2017	07:05:11 AM
58	N024014-001BMS	MS	1	05/10/2017	07:08:26 AM
59	N024014-001BMSD	MSD	1	05/10/2017	07:12:18 AM
60	N024014-001B	SAMP	25	05/10/2017	07:16:08 AM
61	N024014-001B-PS	PS	5	05/10/2017	07:19:27 AM
62	N024014-001BMS	MS	5	05/10/2017	07:23:16 AM
63	N024014-001BMSD	MSD	5	05/10/2017	07:27:04 AM
64	N024114-014A	SAMP	1	05/10/2017	07:30:55 AM
65	N024114-015A	SAMP	1	05/10/2017	07:34:34 AM
29	CCV3	CCV	1	05/10/2017	07:37:55 AM
29	CCV3	CCV	1	05/10/2017	07:43:07 AM
1	CCB3	CCB	1	05/10/2017	07:46:56 AM
33	ICSA2	ICSA	1	05/10/2017	07:50:11 AM
34	ICSAB2	ICSAB	1	05/10/2017	07:53:31 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/1/2017 8:45:30 A**
Prep End Date: **5/1/2017 2:00:00 P**
Prep Batch **62096** Prep Code: **200.7_PR**

Reviewed/ Date: 5/11/2017
Initials/ Date: for 5/11/2017
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-41**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-62096	Aqueous		25	☐	0	0	25	1.000		
LCS2-62096	Aqueous	<2	25	☐	0	0	25	1.000		
MB-62096	Aqueous		25	☐	0	0	25	1.000		
N023998-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-013D	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-014D	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8914	HYDROCHLORIC ACID
8921	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium	LCS,MS,MSD	0.05
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-170430B	ICP Solution B	LCS,MS,MSD	0.5
MWST-170430J	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170504C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	05/04/2017	02:20:04 PM	Mg	279.079	85	0.00	mg/L	
Standard1	05/04/2017	02:24:54 PM	Mg	279.079	1819	0.1000	mg/L	
Standard2	05/04/2017	02:29:43 PM	Mg	279.079	15428	1.000	mg/L	
Standard3	05/04/2017	02:34:33 PM	Mg	279.079	31819	2.000	mg/L	
Standard4	05/04/2017	02:39:25 PM	Mg	279.079	78870	5.000	mg/L	
Standard5	05/04/2017	02:45:18 PM	Mg	279.079	118144	7.500	mg/L	
Standard6	05/04/2017	02:51:10 PM	Mg	279.079	150960	10.000	mg/L	
Standard7	05/04/2017	02:56:35 PM	Mg	279.079	298532	20.000	mg/L	0.9998
Calcium								
CalBlk	05/04/2017	02:20:04 PM	Ca	227.546	-142	0.00	mg/L	
Standard1	05/04/2017	02:24:54 PM	Ca	227.546	90	0.2000	mg/L	
Standard2	05/04/2017	02:29:43 PM	Ca	227.546	371	1.000	mg/L	
Standard3	05/04/2017	02:34:33 PM	Ca	227.546	767	2.000	mg/L	
Standard4	05/04/2017	02:39:25 PM	Ca	227.546	1950	5.000	mg/L	
Standard5	05/04/2017	02:45:18 PM	Ca	227.546	2931	7.500	mg/L	
Standard6	05/04/2017	02:51:10 PM	Ca	227.546	3836	10.000	mg/L	
Standard7	05/04/2017	02:56:35 PM	Ca	227.546	7779	20.000	mg/L	1.0000
Iron								
CalBlk	05/04/2017	02:20:04 PM	Fe	273.953	101	0.00	mg/L	
Standard1	05/04/2017	02:24:54 PM	Fe	273.953	817	0.0200	mg/L	
Standard2	05/04/2017	02:29:43 PM	Fe	273.953	2369	0.050	mg/L	
Standard3	05/04/2017	02:34:33 PM	Fe	273.953	65281	2.000	mg/L	
Standard4	05/04/2017	02:39:25 PM	Fe	273.953	163812	5.000	mg/L	
Standard5	05/04/2017	02:45:18 PM	Fe	273.953	246898	7.500	mg/L	
Standard6	05/04/2017	02:51:10 PM	Fe	273.953	315221	10.000	mg/L	
Standard7	05/04/2017	02:56:35 PM	Fe	273.953	621133	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 170510A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	05/10/2017	04:53:19 AM	Na	589.594	14	0.00	mg/L	
Standard1	05/10/2017	04:56:37 AM	Na	589.594	222	0.1000	mg/L	
Standard2	05/10/2017	04:59:56 AM	Na	589.594	2085	1.000	mg/L	
Standard3	05/10/2017	05:04:02 AM	Na	589.594	11007	5.000	mg/L	
Standard4	05/10/2017	05:07:50 AM	Na	589.594	21286	10.000	mg/L	
Standard5	05/10/2017	05:11:39 AM	Na	589.594	42431	20.000	mg/L	
Standard6	05/10/2017	05:15:28 AM	Na	589.594	84696	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICV**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9871.799	500	10000	0	98.7	90	110				
Iron	10121.306	20	10000	0	101	90	110				
Magnesium	10120.565	100	10000	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	214.830	500	200.0	0	107	80	120				
Iron	25.834	20	20.00	0	129	80	120				S
Magnesium	114.339	100	100.0	0	114	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **CCV**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9762.474	500	10000	0	97.6	90	110				
Iron	10011.358	20	10000	0	100	90	110				
Magnesium	9759.020	100	10000	0	97.6	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	232.158	500	200.0	0	116	70	130				
Iron	32.275	20	20.00	0	161	70	130				S
Magnesium	125.136	100	100.0	0	125	70	130				

Qualifiers:

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

Fe on LLICV and LLCCV1 is biased high however, samples are non-detect for this analyte.

5/11/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICV**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10029.032	500	10000	0	100	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCV**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10093.851	500	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCV**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10374.468	500	10000	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCV**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10407.612	500	10000	0	104	90	110				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-21.631313	500									
Iron	0.627	20									
Magnesium	-3.043748	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **CCB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.374	500									
Iron	4.575	20									
Magnesium	0.198	100									

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-32.264848	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-14.309436	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-26.876838	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-28.283373	500									

Qualifiers:

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

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSA**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508567.923	50	500000	0	102	80	120				
Calcium	500179.868	500	500000	0	100	80	120				
Iron	171988.374	20	200000	0	86.0	80	120				
Magnesium	474474.267	100	500000	0	94.9	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSAB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549099.057	50	500000	0	110	80	120				
Calcium	540938.362	500	500000	0	108	80	120				
Iron	182720.265	20	200000	0	91.4	80	120				
Magnesium	508310.824	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSA**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505209.714	50	500000	0	101	80	120				
Calcium	495585.821	500	500000	0	99.1	80	120				
Iron	169543.202	20	200000	0	84.8	80	120				
Magnesium	462184.820	100	500000	0	92.4	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSAB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	545517.976	50	500000	0	109	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSAB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	536989.372	500	500000	0	107	80	120				
Iron	181256.680	20	200000	0	90.6	80	120				
Magnesium	500946.458	100	500000	0	100	80	120				

Qualifiers:

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

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICSA**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-24.538285	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICSAB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9963.835	500	10000	0	99.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICSA**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-34.847386	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICSAB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10293.052	500	10000	0	103	80	120				

Qualifiers:

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170504C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.003	100.3	65-125	PASS
Standard2	ICAL	1	1.013	101.27	65-125	PASS
Standard3	ICAL	1	1.0023	100.23	65-125	PASS
Standard4	ICAL	1	0.99	98.65	65-125	PASS
Standard5	ICAL	1	0.99	98.66	65-125	PASS
Standard6	ICAL	1	0.97	96.75	65-125	PASS
Standard7	ICAL	1	0.96	95.6	65-125	PASS
ICV	ICV	1	0.97	97.077	65-125	PASS
ICB	ICB	1	1.0045	100.45	65-125	PASS
LLICV	CCV1	1	1.0083	100.83	65-125	PASS
ICSA1	ICSA	1	0.91	90.77	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.43	65-125	PASS
LLICV	CCV1	1	1.0074	100.74	65-125	PASS
MB-62096	MBLK	1	1.049	104.91	65-125	PASS
LCS1-62096	LCS	1	0.96	96.36	65-125	PASS
N023998-001B	SAMP	1	0.96	96.4	65-125	PASS
N023998-001B	SAMP	5	1.007	100.7	65-125	PASS
N023998-001B-PS	PS	1	0.97	96.86	65-125	PASS
N023998-001B-MS1	MS	1	0.96	95.66	65-125	PASS
N023998-001B-MSD1	MSD	1	0.96	96.49	65-125	PASS
N023998-002B	SAMP	1	0.91	90.93	65-125	PASS
N024053-013D	SAMP	1	0.9	89.81	65-125	PASS
N024053-014D	SAMP	1	0.89	88.97	65-125	PASS
CCV1	CCV	1	0.98	98	65-125	PASS
CCB1	CCB	1	0.98	98.14	65-125	PASS
LLCCV1	CCV2	1	1.0064	100.64	65-125	PASS
LLCCV1	CCV2	1	1.009	100.9	65-125	PASS
LLCCV1	CCV2	1	0.99	99.35	65-125	PASS
ICSA2	ICSA	1	0.89	89.017	65-125	PASS
ICSAB2	ICSAB	1	0.84	83.97	65-125	PASS

INTERNAL STANDARD: 170510A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.97	97.2	65-125	PASS
Standard2	ICAL	1	0.97	97.46	65-125	PASS
Standard3	ICAL	1	0.97	96.86	65-125	PASS
Standard4	ICAL	1	0.97	97.02	65-125	PASS
Standard5	ICAL	1	0.97	96.81	65-125	PASS
Standard6	ICAL	1	0.97	97.37	65-125	PASS
ICV	ICV	1	0.97	97.5	65-125	PASS
ICB	ICB	1	0.99	98.7	65-125	PASS
ICSA1	ICSA	1	0.98	98.37	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.17	65-125	PASS
MB-62096	MBLK	1	0.98	97.96	65-125	PASS
LCS2-62096	LCS	1	1.085	108.49	65-125	PASS
N023998-001B	SAMP	10	0.97	97.04	65-125	PASS
N023998-002B	SAMP	10	0.95	95.11	65-125	PASS
N024053-013D	SAMP	10	0.95	94.74	65-125	PASS
N024053-014D	SAMP	10	0.95	95.1	65-125	PASS
N023998-001B	SAMP	50	0.98	98.24	65-125	PASS
N024053-013D	SAMP	50	0.98	97.99	65-125	PASS
N024053-014D	SAMP	50	0.98	98.44	65-125	PASS
N023998-002B	SAMP	50	0.97	97.42	65-125	PASS
CCV1	CCV	1	0.97	97.41	65-125	PASS
CCB1	CCB	1	0.98	98.11	65-125	PASS
N023998-002B	SAMP	250	0.97	97.17	65-125	PASS
N023998-002B-PS	PS	50	0.97	96.85	65-125	PASS
N023998-002B-MS2	MS	50	0.98	97.67	65-125	PASS
N023998-002B-MSD2	MSD	50	0.97	97.34	65-125	PASS
N023998-002B	SAMP	250	0.97	97.35	65-125	PASS
CCV2	CCV	1	0.64	63.82	65-125	NR!
CCV2	CCV	1	0.97	97.39	65-125	PASS
CCB2	CCB	1	0.98	98.24	65-125	PASS
CCV3	CCV	1	0.45	44.53	65-125	NR!
CCV3	CCV	1	0.99	98.79	65-125	PASS
CCB3	CCB	1	1	99.88	65-125	PASS
ICSA2	ICSA	1	1	99.52	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.005	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023998
Test Method: EPA 200.7
Analysis Date: 5/4/2017

Matrix: Groundwater
Batch No.: 62096

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023998-001B DT 5X	Calcium	ug/L	121862.2	PASS	116949.5	4.20%	10
N023998-001B DT 5X	Iron	ug/L	0	NA	6.351824	100.00%	10
N023998-001B DT 5X	Magnesium	ug/L	27392.26	PASS	25142.39	8.95%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N023998
Test Method: EPA 200.7
Analysis Date: 5/10/2017

Matrix: Groundwater
Batch No.: 62096

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023998-002B DT 250X	Sodium	ug/L	1552884	PASS	1605552	3.28%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N023998-001B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	126865.337	500	10000	116900	99.2	80	120				
Iron	106.749	20	100.0	6.352	100	80	120				
Magnesium	34410.937	100	10000	25140	92.7	80	120				

Sample ID **N023998-002B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1559368.971	25000	20000	1606000	-231	80	120				S

Qualifiers:

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

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62097
ASSET #: N023998

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/2/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

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

1st Level Reviewer 5/8/2017 Date:

2nd Level Reviewer 5/9/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

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

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N023998-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 113.721 * 5 * (25/25)

Chromium , ug/L = 568.605

Reporting results in two significant figures,

Chromium , ug/L = 570

% RSD SUMMARY

PERCENT RSD SUMMARY: 170502B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.096	6.2	15	PASS	0.11	4.16	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	3.28	15	PASS	0.52	5.62	15	PASS
Std3-5/50 ppb	ICAL	1	4.96	2.48	15	PASS	4.95	1.11	15	PASS
Std4-10/100 ppb	ICAL	1	10.076	2.37	15	PASS	10.11	1.074	15	PASS
Std5-20/200 ppb	ICAL	1	20.27	1.75	15	PASS	20.039	1.33	15	PASS
Std6-40/400 ppb	ICAL	1	40.51	0.92	15	PASS	40.43	0.98	15	PASS
Std7-100/1000 ppb	ICAL	1	99.91	1.0055	15	PASS	100.15	0.75	15	PASS
Std8-200/2000 ppb	ICAL	1	199.91	0.41	15	PASS	199.83	0.63	15	PASS
ICV	ICV	1	10.13	1.15	15	PASS	101.36	1.55	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0062	157.0073	15	<PQL
LLICV	CCV1	1	1	4.42	20	PASS	0.56	7.64	20	PASS
ICSA1	ICSA	1	0.056	26.2	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.46	1.88	15	PASS	18.79	3.39	15	PASS
CCV1	CCV	1	20.59	1.81	15	PASS	20.47	2.48	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0073	150.44	15	<PQL
MB-62097	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-62097	LCS	1	10.0043	1.62	15	PASS	99.12	0.86	15	PASS
N023998-001B	SAMP	1	0.42	1.58	15	PASS	102.64	1.14	15	PASS
N023998-001B	SAMP	5	0.079	17.82	15	<PQL	21.91	2.48	15	PASS
N023998-001B	SAMP	25	0.0055	26.92	15	<PQL	4.56	1.62	15	PASS
N023998-001B-PS	PS	1	9.64	0.85	15	PASS	192.8	0.6	15	PASS
N023998-001B-PS	PS	5	2.098	3.63	15	PASS	41.97	1.83	15	PASS
N023998-001B-MS	MS	1	9.028	4.076	15	PASS	180.34	4.99	15	PASS
N023998-001B-MS	MS	5	2.12	1.57	15	PASS	44.49	3.78	15	PASS
N023998-001B-MSD	MSD	1	9.57	6.64	15	PASS	187.41	6.2	15	PASS
CCV2	CCV	1	20.18	2.033	15	PASS	21.26	4.61	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0092	74.82	15	<PQL
N023998-001B-MSD	MSD	5	2.25	6.32	15	PASS	42.96	1.83	15	PASS
N023998-002B	SAMP	1	517.29	0.69	15	PASS	11.6	1.32	15	PASS
N023998-002B	SAMP	5	113.72	1.32	15	PASS	2.61	2.65	15	PASS
N024008-003C	SAMP	1	<0.000	N/A	15	<PQL	10.2	2.99	15	PASS
N024008-003C	SAMP	5	<0.000	N/A	15	<PQL	2.24	4.78	15	PASS
N024053-013D	SAMP	1	496.22	0.61	15	PASS	14.089	1.67	15	PASS
N024053-013D	SAMP	5	105.68	0.96	15	PASS	3.071	2.8	15	PASS
N024053-014D	SAMP	1	493.88	0.75	15	PASS	15.42	1.27	15	PASS
N024053-014D	SAMP	5	105.11	0.58	15	PASS	3.22	1.61	15	PASS
CCV3	CCV	1	20.49	1.0076	15	PASS	20.42	0.71	15	PASS
CCB3	CCB	1	0.012	60.29	15	<PQL	0.0049	136.18	15	<PQL
LLCCV1	CCV2	1	1.071	3.27	20	PASS	0.54	5.22	20	PASS
ICSA2	ICSA	1	0.076	2.76	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 170502B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	20.25	0.69	15	PASS	19.27	0.6	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170502B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0502001.D	RINSE	RINSE	1	05/02/17 9:38 PM
B0502002.D	Cal Blank	IBLK	1	05/02/17 9:46 PM
B0502003.D	Std1-0.1/1 ppb	ICAL	1	05/02/17 9:52 PM
B0502004.D	Std2-0.5/5 ppb	ICAL	1	05/02/17 9:58 PM
B0502005.D	Std3-5/50 ppb	ICAL	1	05/02/17 10:03 PM
B0502006.D	Std4-10/100 ppb	ICAL	1	05/02/17 10:09 PM
B0502007.D	Std5-20/200 ppb	ICAL	1	05/02/17 10:14 PM
B0502008.D	Std6-40/400 ppb	ICAL	1	05/02/17 10:20 PM
B0502009.D	Std7-100/1000 ppb	ICAL	1	05/02/17 10:26 PM
B0502010.D	Std8-200/2000 ppb	ICAL	1	05/02/17 10:31 PM
B0502011.D	ICV	ICV	1	05/02/17 10:37 PM
B0502012.D	ICB	ICB	1	05/02/17 10:42 PM
B0502013.D	LLICV	CCV1	1	05/02/17 10:48 PM
B0502014.D	ICSA1	ICSA	1	05/02/17 10:53 PM
B0502015.D	ICSAB1	ICSAB	1	05/02/17 10:59 PM
B0502016.D	N023934-009B	SAMP	1	05/02/17 11:04 PM
B0502017.D	N023934-009A	SAMP	1	05/02/17 11:10 PM
B0502018.D	N023950-009B	SAMP	1	05/02/17 11:16 PM
B0502019.D	N023950-009A	SAMP	1	05/02/17 11:21 PM
B0502020.D	N023950-012B	SAMP	1	05/02/17 11:27 PM
B0502021.D	N023950-012A	SAMP	1	05/02/17 11:32 PM
B0502022.D	N023950-013B	SAMP	1	05/02/17 11:38 PM
B0502023.D	N023950-013A	SAMP	1	05/02/17 11:43 PM
B0502024.D	N023950-016B	SAMP	1	05/02/17 11:49 PM
B0502025.D	N023950-016A	SAMP	1	05/02/17 11:55 PM
B0502026.D	CCV1	CCV	1	05/03/17 12:00 AM
B0502027.D	CCB1	CCB	1	05/03/17 12:06 AM
B0502028.D	MB-62097	MBLK	1	05/03/17 12:11 AM
B0502029.D	LCS-62097	LCS	1	05/03/17 12:17 AM
B0502030.D	N023998-001B	SAMP	1	05/03/17 12:22 AM
B0502031.D	N023998-001B	SAMP	5	05/03/17 12:28 AM
B0502032.D	N023998-001B	SAMP	25	05/03/17 12:34 AM
B0502033.D	N023998-001B-PS	PS	1	05/03/17 12:39 AM
B0502034.D	N023998-001B-PS	PS	5	05/03/17 12:45 AM
B0502035.D	N023998-001B-MS	MS	1	05/03/17 12:50 AM
B0502036.D	N023998-001B-MS	MS	5	05/03/17 12:56 AM
B0502037.D	N023998-001B-MSD	MSD	1	05/03/17 1:02 AM
B0502038.D	CCV2	CCV	1	05/03/17 1:07 AM
B0502039.D	CCB2	CCB	1	05/03/17 1:13 AM
B0502040.D	N023998-001B-MSD	MSD	5	05/03/17 1:18 AM
B0502041.D	N023998-002B	SAMP	1	05/03/17 1:24 AM
B0502042.D	N023998-002B	SAMP	5	05/03/17 1:29 AM

INJECTION LOG: 170502B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0502043.D	N024008-003C	SAMP	1	05/03/17 1:35 AM
B0502044.D	N024008-003C	SAMP	5	05/03/17 1:41 AM
B0502045.D	N024053-013D	SAMP	1	05/03/17 1:46 AM
B0502046.D	N024053-013D	SAMP	5	05/03/17 1:52 AM
B0502047.D	N024053-014D	SAMP	1	05/03/17 1:57 AM
B0502048.D	N024053-014D	SAMP	5	05/03/17 2:03 AM
B0502049.D	MB-62098	MBLK	1	05/03/17 2:08 AM
B0502050.D	CCV3	CCV	1	05/03/17 2:14 AM
B0502051.D	CCB3	CCB	1	05/03/17 2:20 AM
B0502052.D	LLCCV1	CCV2	1	05/03/17 2:25 AM
B0502053.D	ICSA2	ICSA	1	05/03/17 2:31 AM
B0502054.D	ICSAB2	ICSAB	1	05/03/17 2:36 AM
B0502055.D	LCS-62098	LCS	1	05/03/17 2:42 AM
B0502056.D	N023952-001B	SAMP	1	05/03/17 2:48 AM
B0502057.D	N023952-001B	SAMP	5	05/03/17 2:53 AM
B0502058.D	N023952-001B-PS	PS	1	05/03/17 2:59 AM
B0502059.D	N023952-001B-MS	MS	1	05/03/17 3:04 AM
B0502060.D	N023952-001B-MSD	MSD	1	05/03/17 3:10 AM
B0502061.D	N023952-003B	SAMP	1	05/03/17 3:16 AM
B0502062.D	N023952-004B	SAMP	1	05/03/17 3:21 AM
B0502063.D	N023952-005B	SAMP	1	05/03/17 3:28 AM
B0502064.D	N023952-006B	SAMP	1	05/03/17 3:34 AM
B0502065.D	CCV4	CCV	1	05/03/17 3:38 AM
B0502066.D	CCB4	CCB	1	05/03/17 3:44 AM
B0502067.D	N023952-007B	SAMP	1	05/03/17 3:49 AM
B0502068.D	N023952-008B	SAMP	1	05/03/17 3:56 AM
B0502069.D	N023952-009B	SAMP	1	05/03/17 4:01 AM
B0502070.D	N023952-010B	SAMP	1	05/03/17 4:07 AM
B0502071.D	N024040-001B	SAMP	1	05/03/17 4:12 AM
B0502072.D	N024040-002B	SAMP	1	05/03/17 4:18 AM
B0502073.D	N024051-001B	SAMP	1	05/03/17 4:24 AM
B0502074.D	N024051-003B	SAMP	1	05/03/17 4:29 AM
B0502075.D	N024052-001B	SAMP	1	05/03/17 4:35 AM
B0502076.D	CCV5	CCV	1	05/03/17 4:40 AM
B0502077.D	CCB5	CCB	1	05/03/17 4:46 AM
B0502078.D	N024052-002B	SAMP	1	05/03/17 4:51 AM
B0502079.D	N024054-001B	SAMP	1	05/03/17 4:57 AM
B0502080.D	N024054-003B	SAMP	1	05/03/17 5:03 AM
B0502081.D	CCV6	CCV	1	05/03/17 5:08 AM
B0502082.D	CCB6	CCB	1	05/03/17 5:14 AM
B0502083.D	LLCCV2	CCV2	1	05/03/17 5:19 AM
B0502084.D	ICSA3	ICSA	1	05/03/17 5:25 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/1/2017 8:51:23 A**
Prep End Date: **5/1/2017 1:00:00 P**
Prep Batch **62097** Prep Code: **200.8_PR**

Reviewed/ Date: 5/9/2017
Initials/ Date: 5/8/2017
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62097	Aqueous		25	☐	0	0	25	1.000		
MB-62097	Aqueous		25	☐	0	0	25	1.000		
N023998-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024008-003C	Wastewater	<2	25	☐	0	0	25	1.000		
N024053-013D	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-014D	Groundwater	<2	25	☐	0	0	25	1.000		

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

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 2 May 2017 12:39:00 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	118464.00	0.00	
24 Mg	464340.00	0.00	
25 Mg	61225.10	0.00	
26 Mg	70601.30	0.00	
59 Co	552633.00	0.00	
115 In	882688.00	0.00	
206 Pb	252416.00	0.00	
207 Pb	219318.00	0.00	
208 Pb	539584.00	0.00	

RSD (%)

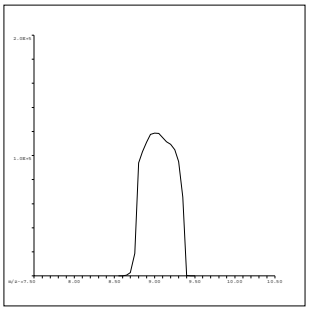
Element	Actual	Required	Flag
9 Be	1.29	5.00	
24 Mg	1.28	5.00	
25 Mg	1.99	5.00	
26 Mg	1.14	5.00	
59 Co	0.41	5.00	
115 In	0.71	5.00	
206 Pb	1.09	5.00	
207 Pb	1.12	5.00	
208 Pb	1.21	5.00	

Ion Ratio

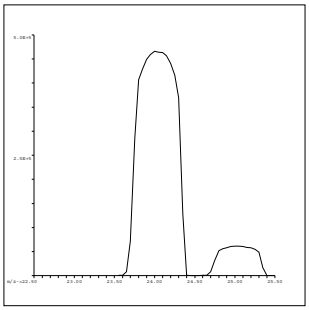
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

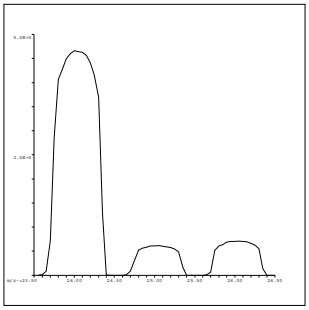
Element	Actual	Required	Flag



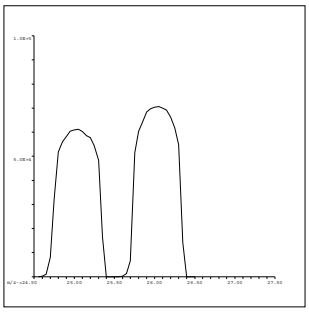
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



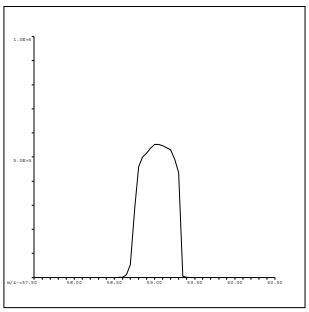
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



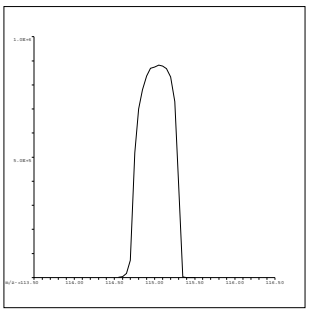
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



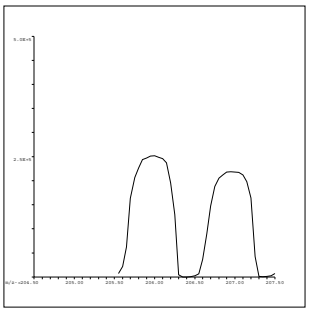
26 Mg
Mass Calib.
Actual: 26.05
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



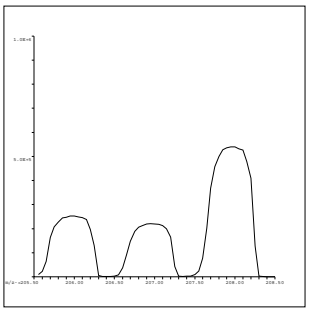
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



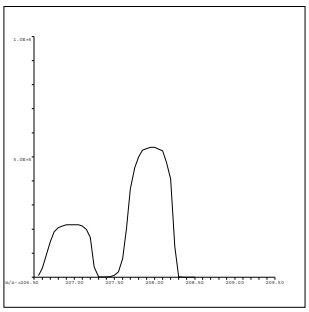
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170502B

Instrument ID: ICPMS-02

Analyte	Data File	B0502002.D	B0502004.D	B0502005.D	B0502006.D	B0502007.D	B0502008.D	B0502009.D	B0502010.D	
	Acq. Date-Time	05/02/2017 09:46 PM	05/02/2017 09:58 PM	05/02/2017 10:03 PM	05/02/2017 10:09 PM	05/02/2017 10:14 PM	05/02/2017 10:20 PM	05/02/2017 10:26 PM	05/02/2017 10:31 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	53935.8	51102.6	51323.3	52499.2	51842.9	53728.7	52408.9	51901.8	
55 Mn [2]	CPS	32	1115.6	10454.4	21808.8	42651.4	89171.5	215381.5	425586.4	1.0000
52 Cr [2]	CPS	115.5	2289.1	22027.2	45663.3	90615.7	187568.6	451069	893752.9	1.0000

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.358	0.50	100.0	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.563	0.50	0.5000	0	113	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.473	0.50	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.259	0.50	20.00	0	106	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.416	0.50	20.00	0	102	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.540	0.50	0.5000	0	108	70	130				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.133	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.996	1.0	1.000	0	99.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.594	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.183	1.0	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.492	1.0	20.00	0	102	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.071	1.0	1.000	0	107	70	130				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634731**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634746**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634758**

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

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634770**

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

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634656**

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

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634671**

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

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634683**

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

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634695**

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

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSA**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634733**

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

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSAB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.788	0.50	20.00	0	93.9	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSA**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634772**

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

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSAB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.272	0.50	20.00	0	96.4	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSA**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.056	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSAB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.457	1.0	20.00	0	97.3	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSA**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.076	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSAB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.254	1.0	20.00	0	101	80	120				

Qualifiers:

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

Calculations are based on raw values

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

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170502B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	53935.8	53935.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	53077.5	53935.8	98.41	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	51102.6	53935.8	94.75	PASS	70-125
Std3-5/50 ppb	ICAL	1	51323.3	53935.8	95.16	PASS	70-125
Std4-10/100 ppb	ICAL	1	52499.2	53935.8	97.34	PASS	70-125
Std5-20/200 ppb	ICAL	1	51842.9	53935.8	96.12	PASS	70-125
Std6-40/400 ppb	ICAL	1	53728.7	53935.8	99.62	PASS	70-125
Std7-100/1000 ppb	ICAL	1	52408.9	53935.8	97.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	51901.8	53935.8	96.23	PASS	70-125
ICV	ICV	1	51760.1	53935.8	95.97	PASS	70-125
ICB	ICB	1	53382.8	53935.8	98.97	PASS	70-125
LLICV	CCV1	1	50174.2	53935.8	93.026	PASS	70-125
ICSA1	ICSA	1	55017.2	53935.8	102.01	PASS	70-125
ICSAB1	ICSAB	1	59430	53935.8	110.19	PASS	70-125
CCV1	CCV	1	46030.1	53935.8	85.34	PASS	70-125
CCB1	CCB	1	43680.6	53935.8	80.99	PASS	70-125
MB-62097	MBLK	1	40299.7	53935.8	74.72	PASS	70-125
LCS-62097	LCS	1	50120.5	53935.8	92.93	PASS	70-125
N023998-001B	SAMP	1	44205.3	53935.8	81.96	PASS	70-125
N023998-001B	SAMP	5	47496.4	53935.8	88.061	PASS	70-125
N023998-001B	SAMP	25	50846.4	53935.8	94.27	PASS	70-125
N023998-001B-PS	PS	1	52567.3	53935.8	97.46	PASS	70-125
N023998-001B-PS	PS	5	49314.8	53935.8	91.43	PASS	70-125
N023998-001B-MS	MS	1	47423.8	53935.8	87.93	PASS	70-125
N023998-001B-MS	MS	5	47235.1	53935.8	87.58	PASS	70-125
N023998-001B-MSD	MSD	1	48665.9	53935.8	90.23	PASS	70-125
CCV2	CCV	1	51615.7	53935.8	95.7	PASS	70-125
CCB2	CCB	1	50522.4	53935.8	93.67	PASS	70-125
N023998-001B-MSD	MSD	5	47801.6	53935.8	88.63	PASS	70-125
N023998-002B	SAMP	1	51023.6	53935.8	94.6	PASS	70-125
N023998-002B	SAMP	5	56464.3	53935.8	104.69	PASS	70-125
N024008-003C	SAMP	1	50128.6	53935.8	92.94	PASS	70-125
N024008-003C	SAMP	5	48290.9	53935.8	89.53	PASS	70-125
N024053-013D	SAMP	1	50064	53935.8	92.82	PASS	70-125
N024053-013D	SAMP	5	56250.1	53935.8	104.29	PASS	70-125
N024053-014D	SAMP	1	53546.1	53935.8	99.28	PASS	70-125
N024053-014D	SAMP	5	58403.2	53935.8	108.28	PASS	70-125
CCV3	CCV	1	57517.7	53935.8	106.64	PASS	70-125
CCB3	CCB	1	52013.2	53935.8	96.44	PASS	70-125
LLCCV1	CCV2	1	49344	53935.8	91.49	PASS	70-125
ICSA2	ICSA	1	50693.6	53935.8	93.99	PASS	70-125

INTERNAL STANDARD: 170502B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	55323.9	53935.8	102.57	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N023998
Test Method: EPA 6020
Analysis Date: 5/2/2017

Matrix: Groundwater
Batch No.: 62097

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023998-001B DT 5X	Chromium	ug/L	0.394258	NA	0.41709	5.47%	10
N023998-001B DT 25X	Manganese	ug/L	113.9062	PASS	109.5403	3.99%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	**N023998-001B-PS**	SampType: **PS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID:	**ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	209.834	2.5	100.0	109.5	100	80	120				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	N023998-001B-PS	SampType:	PS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.644	1.0	10.00	0.4171	92.3	80	120				

Qualifiers:

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

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

QC Batch Number: R114888
ASSET #: N023998

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 4/26/2017

Method:

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

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer: rba Date: 4/30/2017

2nd Level Reviewer: 5/9/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

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

FORMULA:

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

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

where:

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

For Sample **N023998-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.5323 * 1$$

$$Cr^{+6}, \mu g/L = 0.53$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 0.53}$$

rba 4/30/2017

ANALYSIS RUN LOG

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005A	SAMP	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMP	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMP	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMP	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMP	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMP	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMP	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMP	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMP	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-1,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-1,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMP	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMP	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMP	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMP	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMP	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMP	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMP	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMP	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMP	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMP	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-2,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-2,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMP	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMP	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMP	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-3,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-3,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMP	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMP	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,1
56	N023899-005A,SAMP	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-4,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-4,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMP	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	~~N023912-005AMS,MS~~	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL N023912-005A,SAMP,1
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-5,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-5,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170426A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/26/17 8:57 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	04/26/17 9:08 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	04/26/17 9:17 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/26/17 9:27 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	04/26/17 9:36 AM	Reported
17	MB-R114888	MBLK	1	Hexavalent Chromium	04/26/17 9:46 AM	Reported
18	LCS-R114888	LCS	1	Hexavalent Chromium	04/26/17 9:55 AM	Reported
19	N023998-001A	SAMP	1	Hexavalent Chromium	04/26/17 10:05 AM	Reported
20	N023998-001ADUP	DUP	1	Hexavalent Chromium	04/26/17 10:14 AM	Reported
21	N023998-001AMS	MS	1	Hexavalent Chromium	04/26/17 10:24 AM	Reported
22	N023998-002A	SAMP	100	Hexavalent Chromium	04/26/17 10:33 AM	Reported
23	N023998-002AMS	MS	100	Hexavalent Chromium	04/26/17 10:43 AM	Reported
24	N023998-002AMSD	MSD	100	Hexavalent Chromium	04/26/17 10:52 AM	Reported
25	N023999-001A	SAMP	100	Hexavalent Chromium	04/26/17 11:01 AM	Reported
26	N023999-001AMS	MS	100	Hexavalent Chromium	04/26/17 11:11 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	04/26/17 11:20 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	04/26/17 11:30 AM	Reported
29	N023999-002A	SAMP	1000	Hexavalent Chromium	04/26/17 11:39 AM	Reported
30	N023999-002AMS	MS	1000	Hexavalent Chromium	04/26/17 11:49 AM	Reported
31	N023999-003A	SAMP	1	Hexavalent Chromium	04/26/17 11:58 AM	Reported
32	N023999-003AMS	MS	1	Hexavalent Chromium	04/26/17 12:08 PM	Reported
33	N023844-002A	SAMP	1	Hexavalent Chromium	04/26/17 12:17 PM	Not Reported
34	N023844-002AMS	MS	1	Hexavalent Chromium	04/26/17 12:27 PM	Not Reported
35	N023914-005A	SAMP	1	Hexavalent Chromium	04/26/17 12:36 PM	Not Reported
36	N023914-005AMS	MS	1	Hexavalent Chromium	04/26/17 12:45 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	04/26/17 1:21 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	04/26/17 1:33 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170426A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**26/Apr/17 14:55:48**
No. of Injections:	**41**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		04/26/2017 08:57	Finished	
13	BLANK	2	1000	Unknown		04/26/2017 09:08	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		04/26/2017 09:17	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,	4	1000	Unknown		04/26/2017 09:27	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		04/26/2017 09:36	Finished	CCB R170419B
17	MB-H2O,MBLK,1	6	1000	Unknown		04/26/2017 09:46	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		04/26/2017 09:55	Finished	LCS, IWST-170330B
19	N023998-001A,SAMP	8	1000	Unknown		04/26/2017 10:05	Finished	SAMP, 10mL
20	N023998-001ADUP,D	9	1000	Unknown		04/26/2017 10:14	Finished	DUP, 10mL
21	N023998-001AMS,MS	10	1000	Unknown		04/26/2017 10:24	Finished	MS (1ppb), IWST-170330B,10
22	N023998-002A,SAMP	11	1000	Unknown		04/26/2017 10:33	Finished	SAMP,0.1>10mL
23	N023998-002AMS,MS	12	1000	Unknown		04/26/2017 10:43	Finished	MS (5ppb), IWST-170330B,0.1
24	N023998-002AMSD,M	13	1000	Unknown		04/26/2017 10:52	Finished	MSD (5ppb), IWST-170330B,0.
25	N023999-001A,SAMP	14	1000	Unknown		04/26/2017 11:01	Finished	SAMP,0.1>10mL
26	N023999-001AMS,MS	15	1000	Unknown		04/26/2017 11:11	Finished	MS (5ppb), IWST-170330B,0.1
27	CCV-2,CCV1,1,	16	1000	Unknown		04/26/2017 11:20	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	17	1000	Unknown		04/26/2017 11:30	Finished	CCB R170419A
29	N023999-002A,SAMP	18	1000	Unknown		04/26/2017 11:39	Finished	SAMP,0.01>10mL
30	N023999-002AMS,MS	19	1000	Unknown		04/26/2017 11:49	Finished	MS (5ppb), IWST-170330B,0.0
31	N023999-003A,SAMP	20	1000	Unknown		04/26/2017 11:58	Finished	SAMP, 10mL
32	N023999-003AMS,MS	21	1000	Unknown		04/26/2017 12:08	Finished	MS (1ppb), IWST-170330B,10
33	N023844-002A,SAMP	22	1000	Unknown		04/26/2017 12:17	Finished	SAMP, 10mL
34	N023844-002AMS,MS	23	1000	Unknown		04/26/2017 12:27	Finished	MS (1ppb), IWST-170330B,10
35	N023914-005A,SAMP	24	1000	Unknown		04/26/2017 12:36	Finished	SAMP, 10mL
36	N023914-005AMS,MS	25	1000	Unknown		04/26/2017 12:45	Finished	MS (5ppb), IWST-170330B,10
37	CCV-3,CCV,1,	28	1000	Unknown		04/26/2017 13:21	Finished	CCV @5ppb, IWST-170330B
38	CCB-3,CCB,1,	29	1000	Unknown		04/26/2017 13:33	Finished	CCB R170414A
39	SHUTDOWN	30	1000	Unknown		04/26/2017 13:42	Finished	
40	Eluent: R170422B	31	1000	Unknown		n.a.	Finished	Eluent
41	PCR: R170425A	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 4/26/17
Time Prepared: 0745 H
Prepared By: RBA

slope: 97.47
pH: 4: 3.99 @ 20.6°C
7: 6.96 @ 20.5°C
10: 10.05 @ 20.6°C

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CIW-161228C
NH4OH + NH4SO4 eluent: R1704226
NH4OH + NH4SO4 buffer: R1704198

CNNaOH: R1703084

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M023998-001A	9.39	-	~250 mL	~250 mL		
2)	2A	9.26	9.52			+3 drops CN NaOH	
3)	M023999-1A	9.70	-				R1704198
4)	2A	9.70	-				
5)	3A	9.64	-				
6)							
7)							
8)							
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 4/27/17
Time Prepared: 1040H
Prepared By: RBA RSK

Reagent ID:
Sulfuric Acid: 8782
Diphenylcarbazide: CIW-161228C
NH4OH + NH4SO4 eluent: R1704226A
NH4OH + NH4SO4 buffer: R1704198

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M024016-001A	7.93	9.32	~100 mL	~100 mL	+0.2 mL R1704198/10 mL sample	
2)	2A	7.80	9.30				
3)	3A	7.98	9.41				
4)	4A	8.01	9.36				
5)	5A	7.90	9.48				
6)	6A	7.89	9.33				
7)	7A	8.18	9.32				
8)	8A	7.78	9.41				
9)	M024017-1A	9.59	9.45				
10)	2A	9.60	9.50				
11)	3A	7.95	9.40				
12)	4A	7.96	9.37				
13)	5A	10.17	9.28				
14)	6A	8.17	9.31				
15)							

Logbook No. 12

rba 4/30/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/25/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0537	0.2438	1.2243	2.4380	3.6639	4.8727	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST-170330A

Calibration Acceptance Criteria: > 0.999 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **ICV**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2629732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.087	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **ZZZZZZ**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2629733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **CCV**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/26/2017**	SeqNo: **2629735**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.910	0.20	5.000	0	98.2	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **ZZZZZZ**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/26/2017**	SeqNo: **2629736**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.207	0.20	0.2000	0	103	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **ZZZZZZ**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/26/2017**	SeqNo: **2629748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.061	0.20	10.00	0	101	95	105				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **CCV**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/26/2017**	SeqNo: **2629754**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.057	0.20	5.000	0	101	95	105				

Qualifiers:

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **ICB**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2629734**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **CCB**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/26/2017**	SeqNo: **2629737**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **CCB**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/26/2017**	SeqNo: **2629749**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114888**
Client ID: **CCB**	Batch ID: **R114888**	TestNo: **EPA 218.6**		Analysis Date: **4/26/2017**	SeqNo: **2629755**

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

Qualifiers:

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

Calculations are based on raw values

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 4/26/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.173	
CCV-2	4.173	
CCV-3	4.173	
Average	4.173	
Actual RT Window	4.093 - 4.253	
Applied RT Window	3.973 - 4.373	
MB-R114888	N.A.	N.A.
LCS-R114888	4.173	PASS
N023998-001A	4.123	PASS
N023998-001ADUP	4.123	PASS
N023998-001AMS	4.115	PASS
N023998-002A	4.173	PASS
N023998-002AMS	4.173	PASS
N023998-002AMSD	4.173	PASS
N023999-001A	4.173	PASS
N023999-001AMS	4.173	PASS
N023999-002A	4.173	PASS
N023999-002AMS	4.173	PASS
N023999-003A	N.A.	N.A.
N023999-003AMS	4.173	PASS
N023844-002A	4.098	PASS
N023844-002AMS	4.098	PASS
N023914-005A	4.165	PASS
N023914-005AMS	4.165	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6/EPA 7199 Unit: ug/L
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Instrument Name: **IC-06** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/16

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

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

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

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

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

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA



INITIAL CALIBRATION

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

rba 4/30/2017

5/5/2017

IC-07 RBA 4/27/2017 12:48 PM

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-2,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-2,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-3,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-4,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-4,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,1
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-5,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-5,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

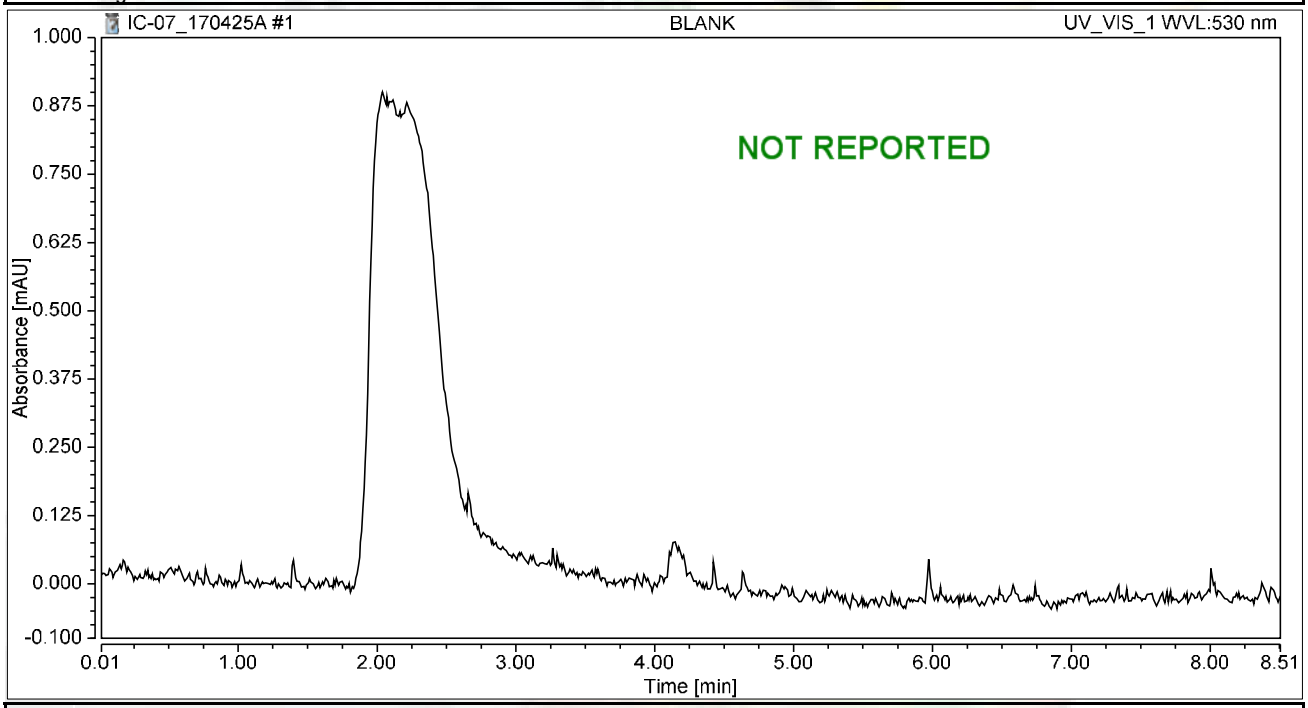
61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	N023912-005AMS,MS	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-6,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-6,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

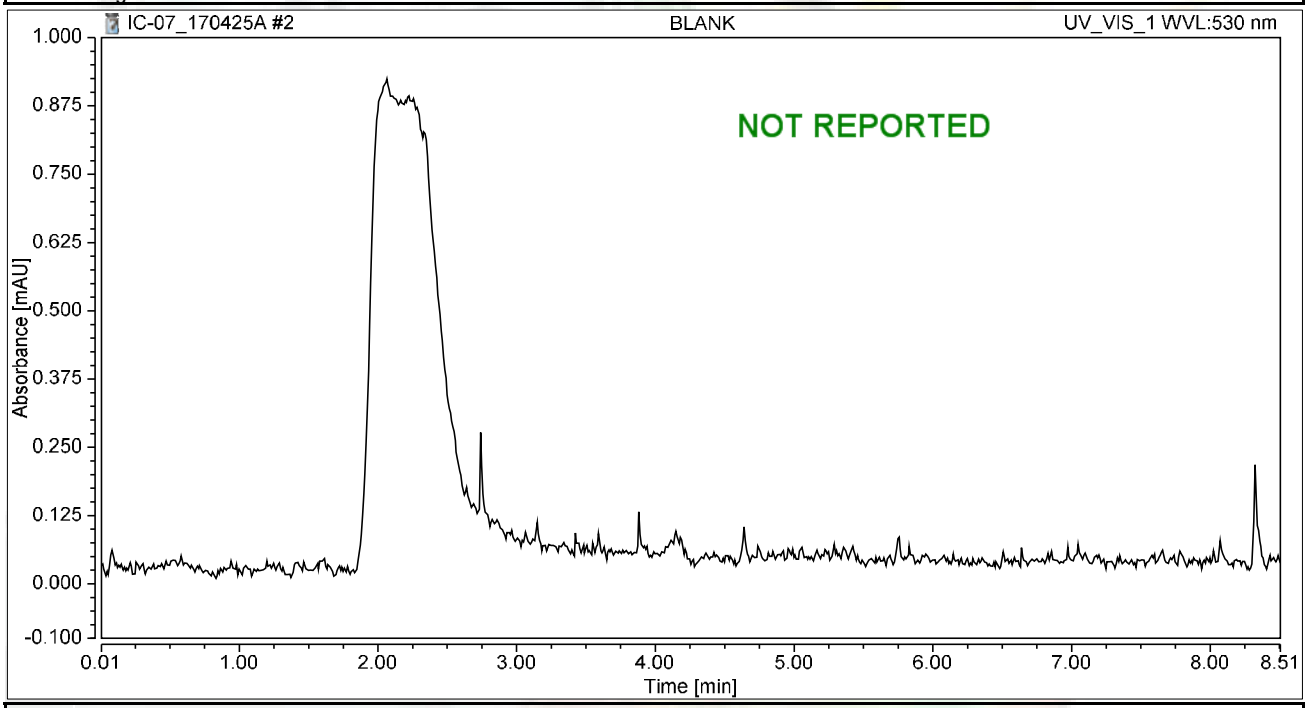
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

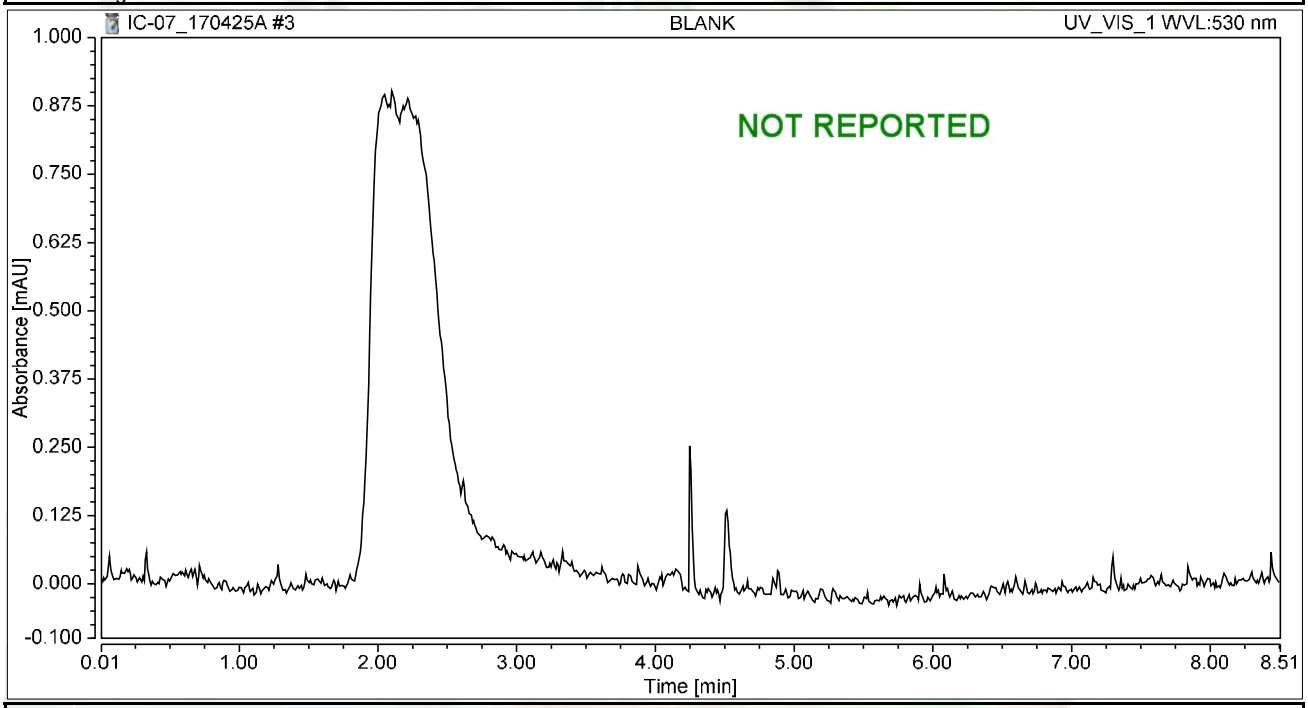
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

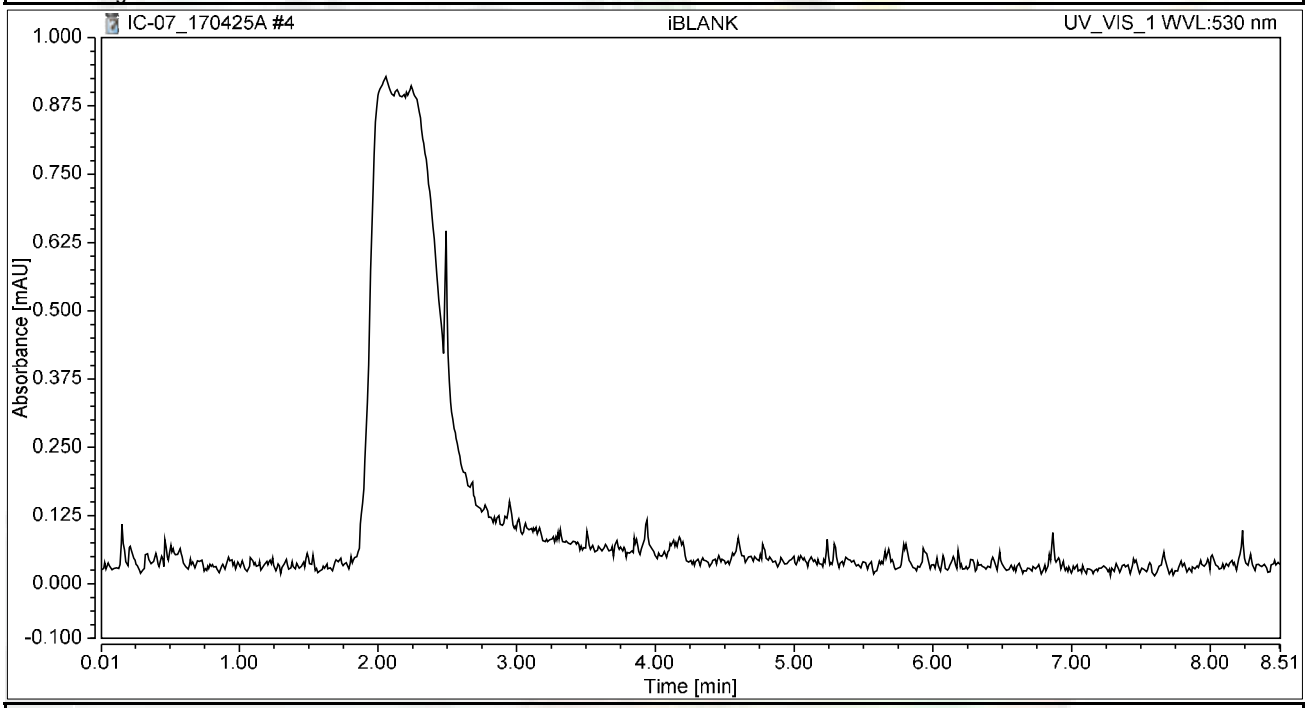
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

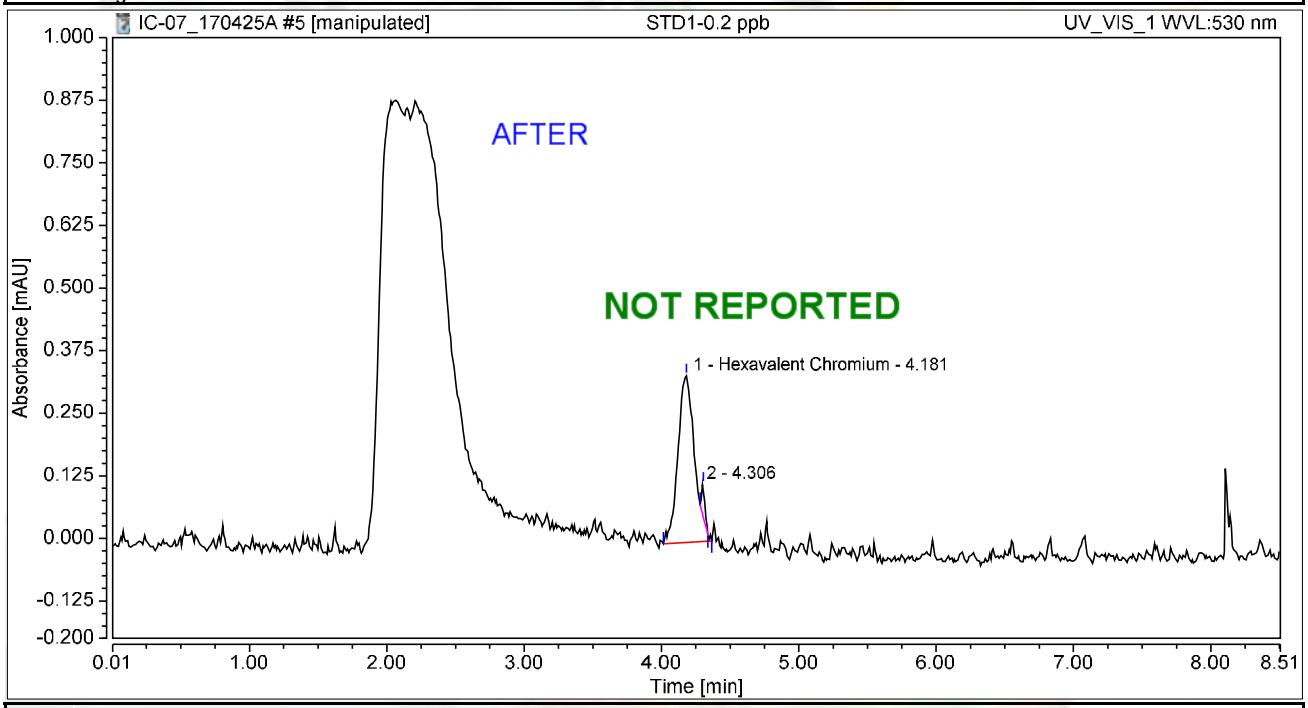
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.046	0.333	96.32	83.12	0.1906
2		4.306	0.002	0.068	3.68	16.88	n.a.
Total:			**0.048**	**0.401**	**100.00**	**100.00**	

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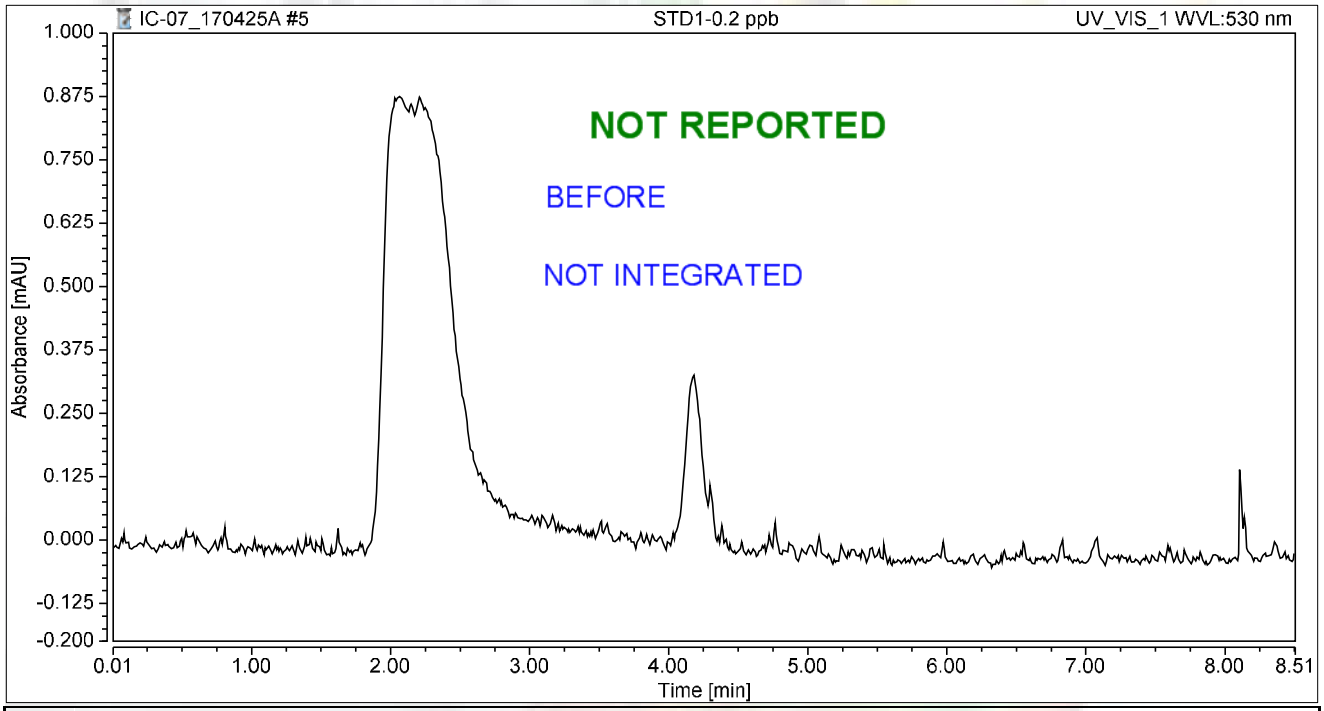
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

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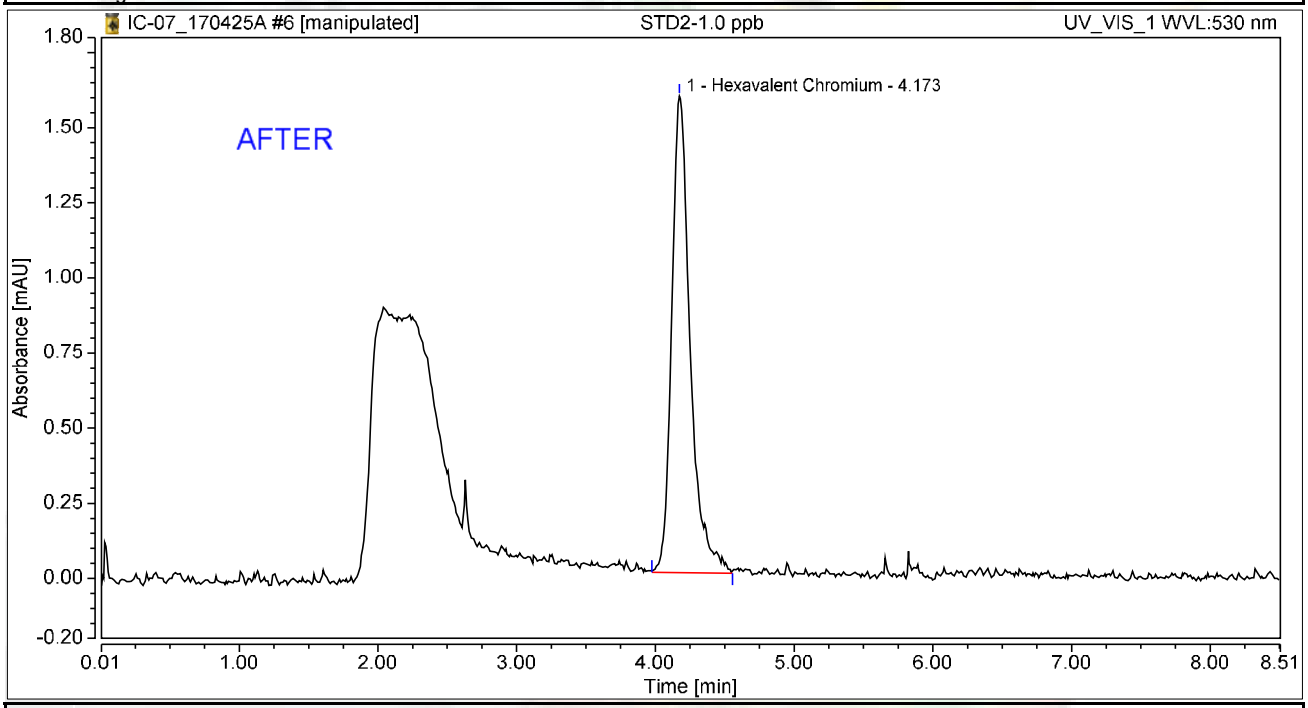
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.244	1.585	100.00	100.00	0.9996
Total:			**0.244**	**1.585**	**100.00**	**100.00**	

rba 4/30/2017

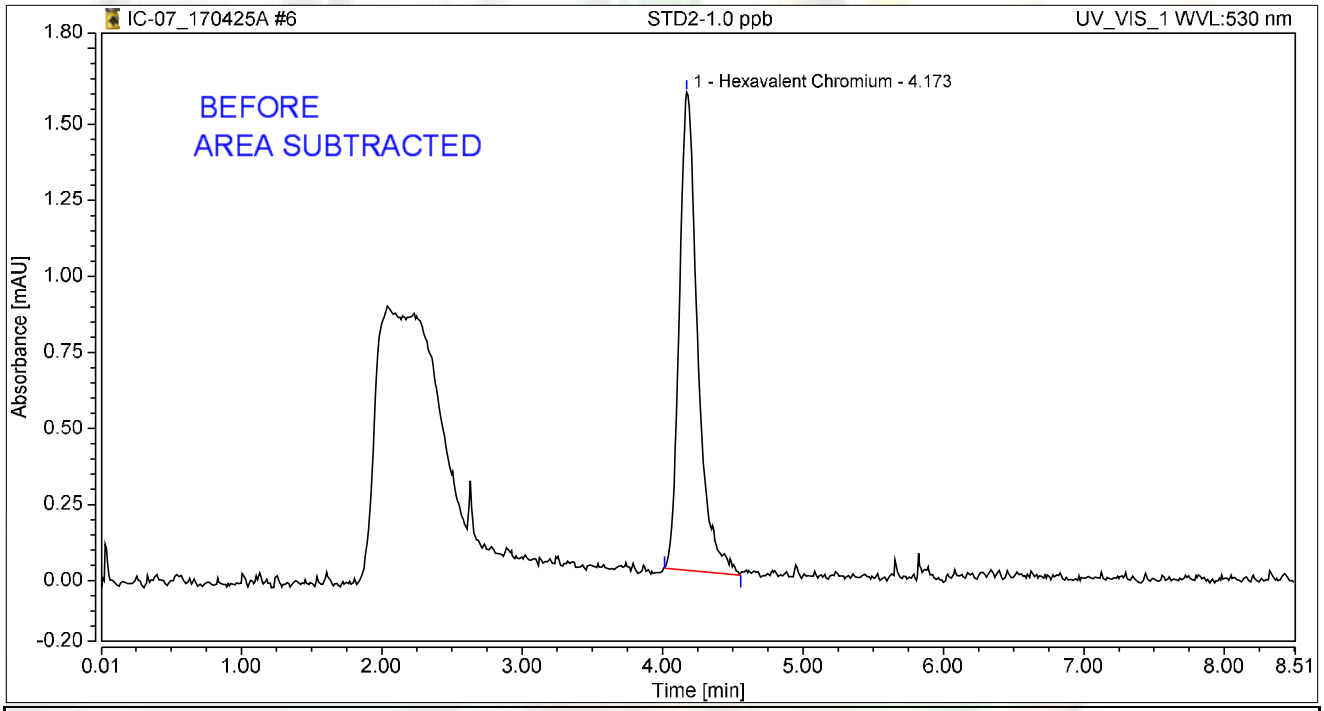
Reviewed by: Nancy 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.238	1.572	100.00	100.00	0.9911
Total:			**0.238**	**1.572**	**100.00**	**100.00**	

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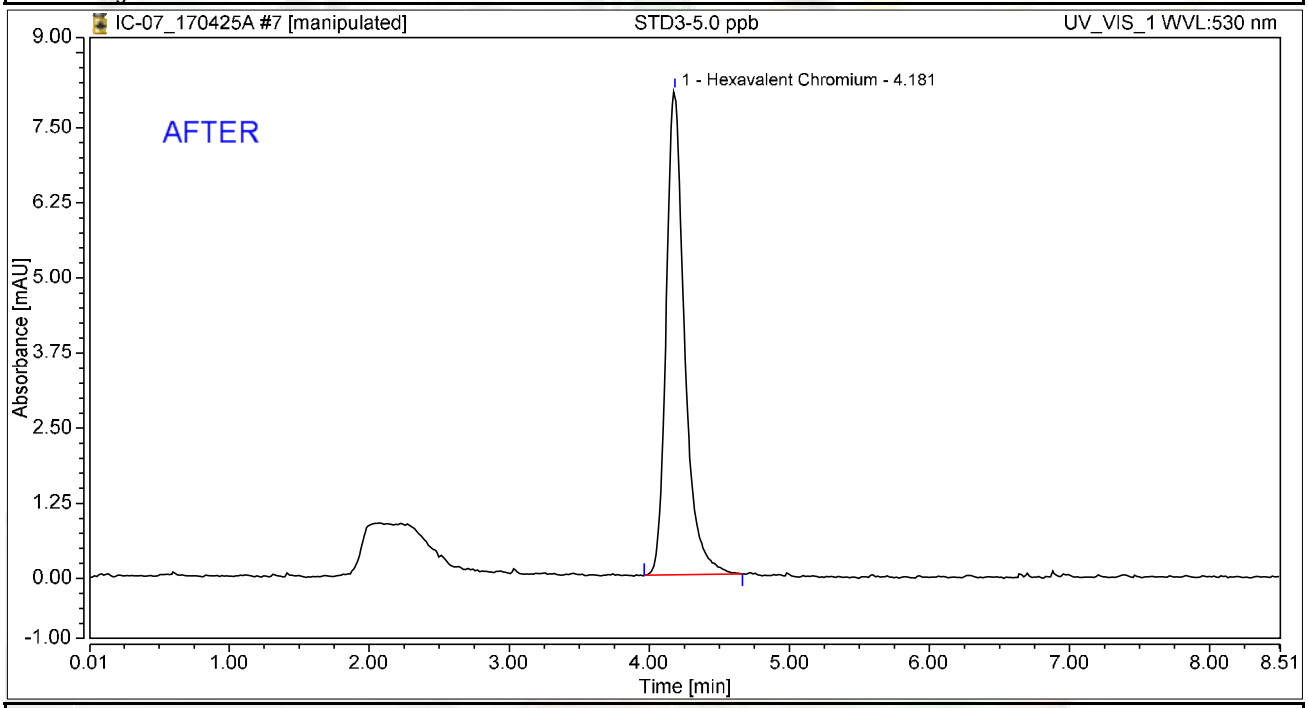
Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.224	8.059	100.00	100.00	5.0198
Total:			**1.224**	**8.059**	**100.00**	**100.00**	

rba 4/30/2017

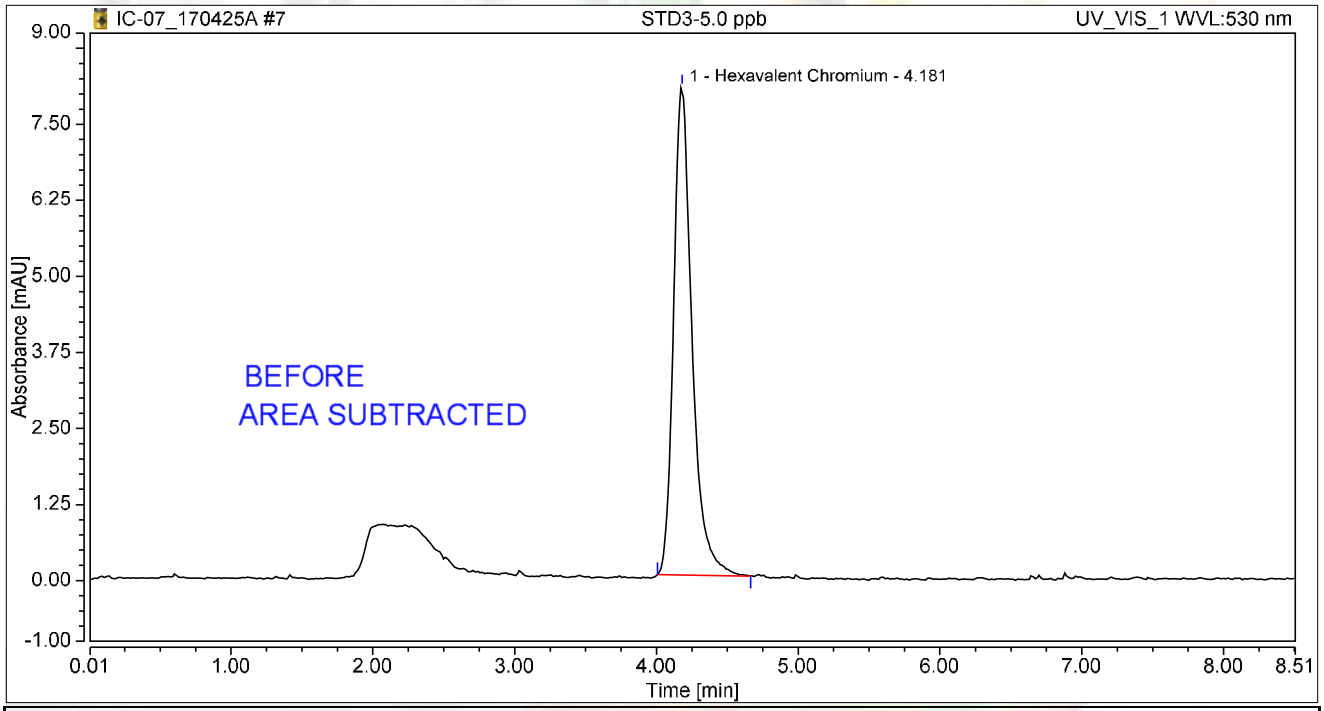
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.209	8.027	100.00	100.00	5.0326
Total:			**1.209**	**8.027**	**100.00**	**100.00**	

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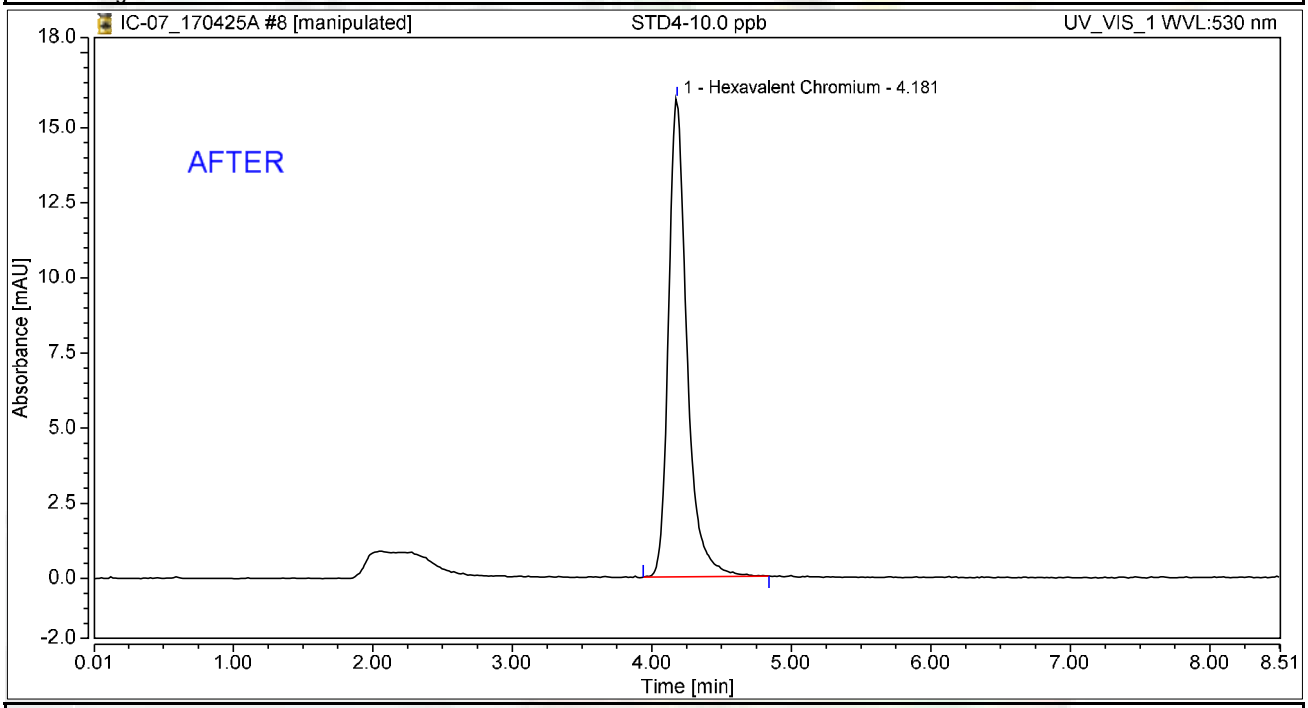
Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.438	15.921	100.00	100.00	9.9965
Total:			**2.438**	**15.921**	**100.00**	**100.00**	

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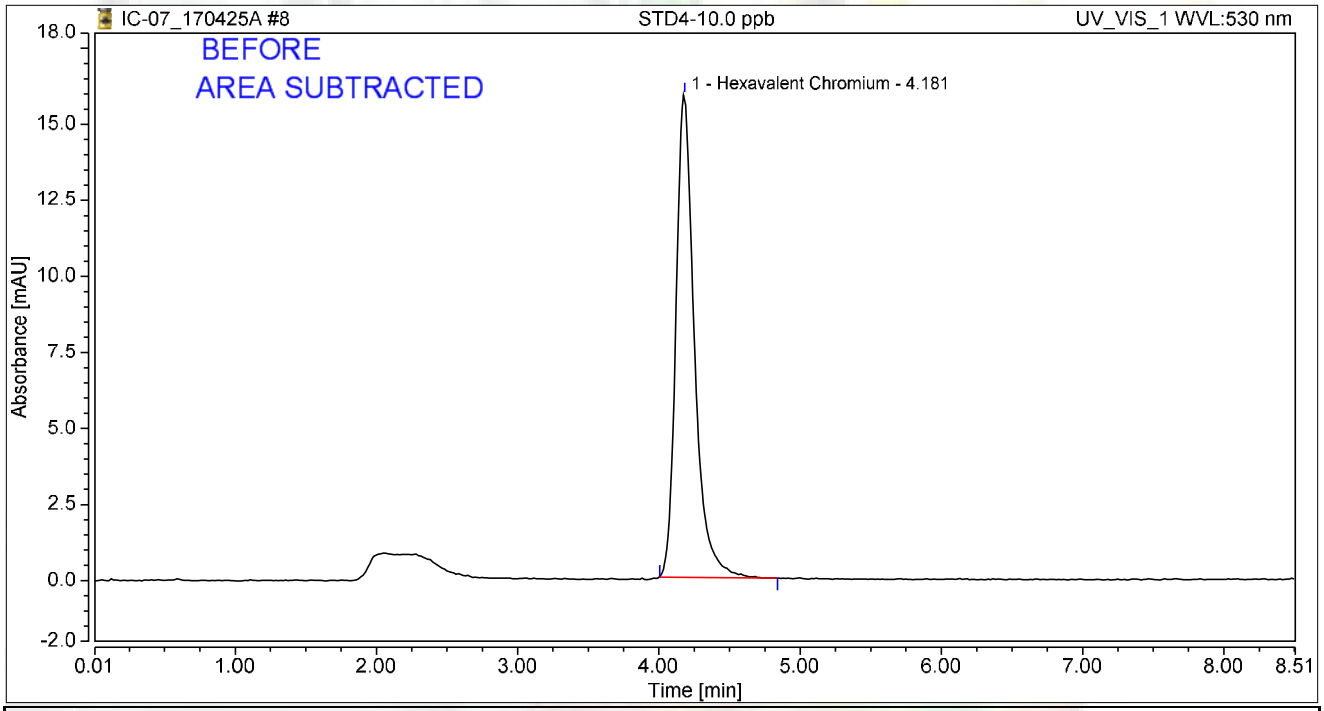
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.407	15.865	100.00	100.00	10.0165
Total:			**2.407**	**15.865**	**100.00**	**100.00**	

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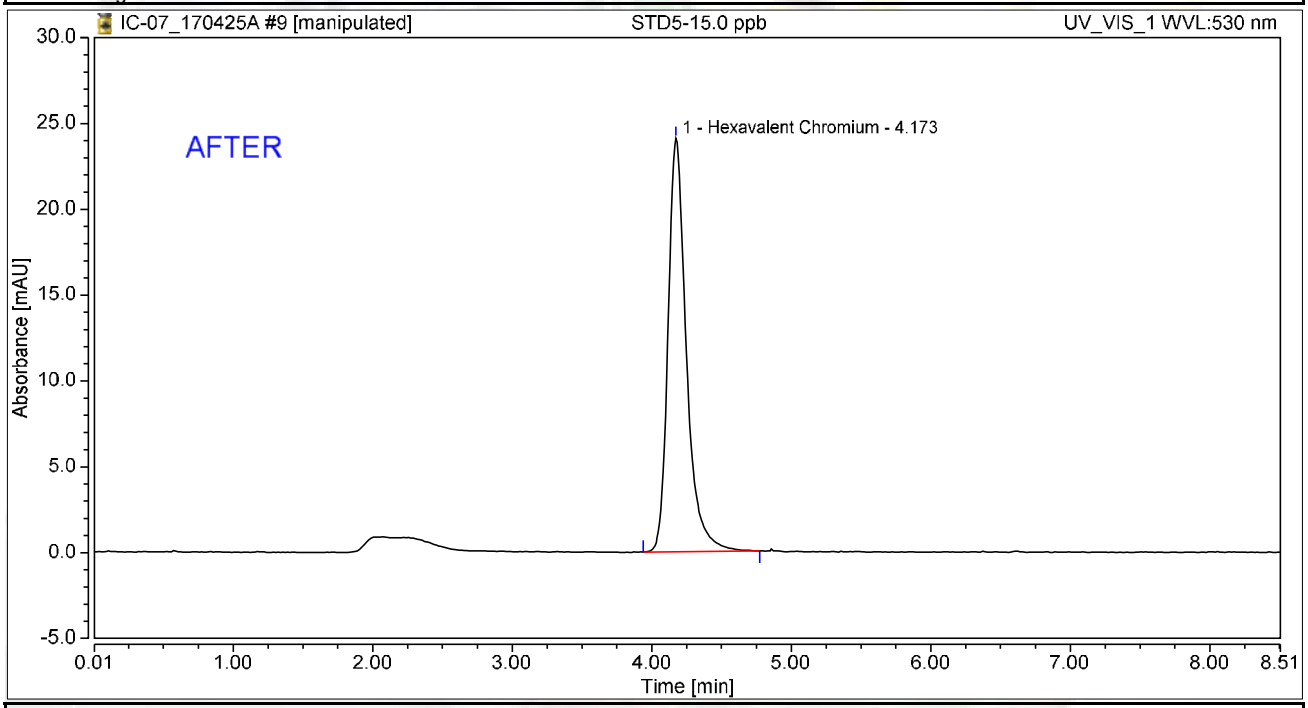
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.664	24.088	100.00	100.00	15.0230
Total:			**3.664**	**24.088**	**100.00**	**100.00**	

rba 4/30/2017

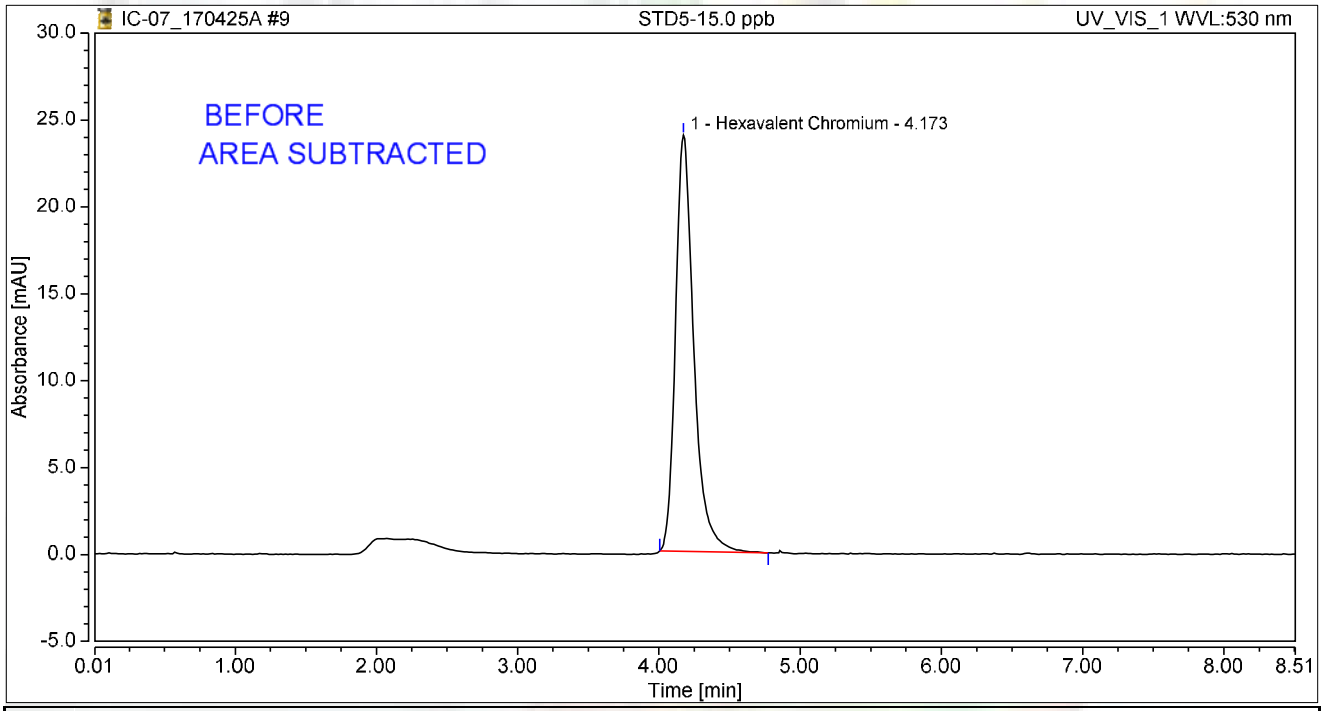
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.597	23.956	100.00	100.00	14.9652
Total:			**3.597**	**23.956**	**100.00**	**100.00**	

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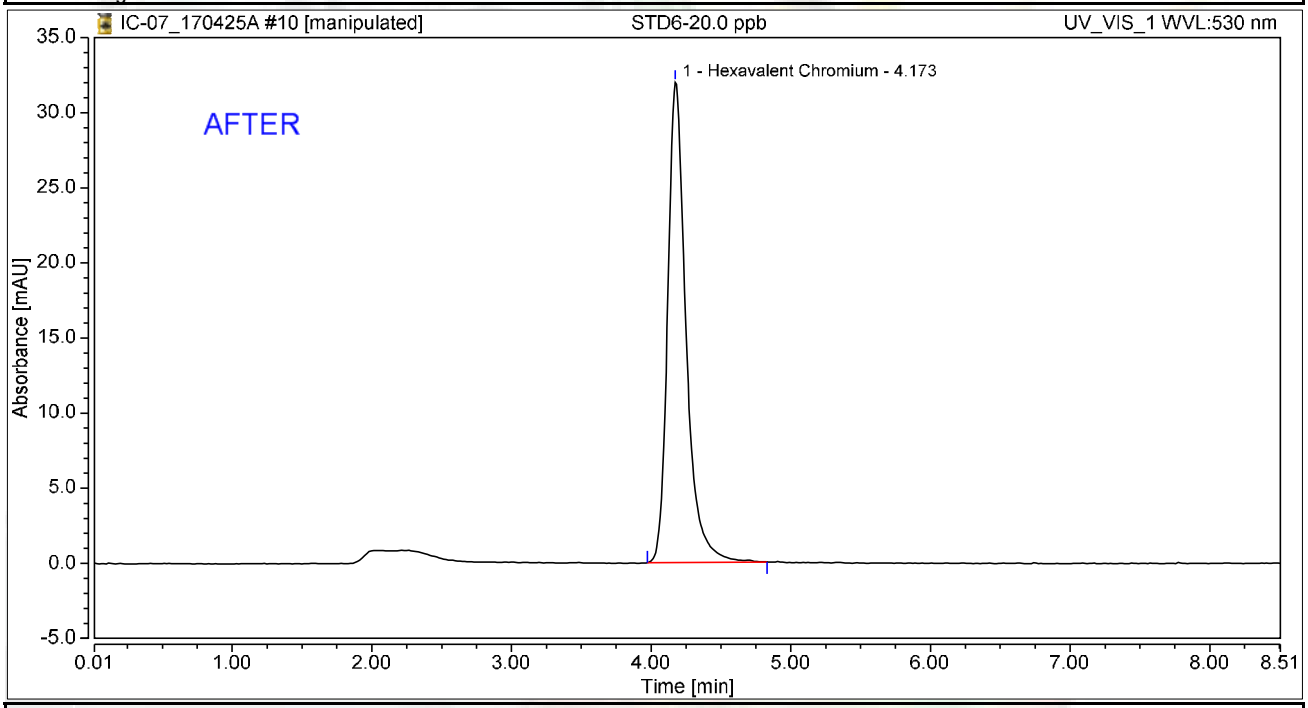
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.873	31.978	100.00	100.00	19.9794
Total:			**4.873**	**31.978**	**100.00**	**100.00**	

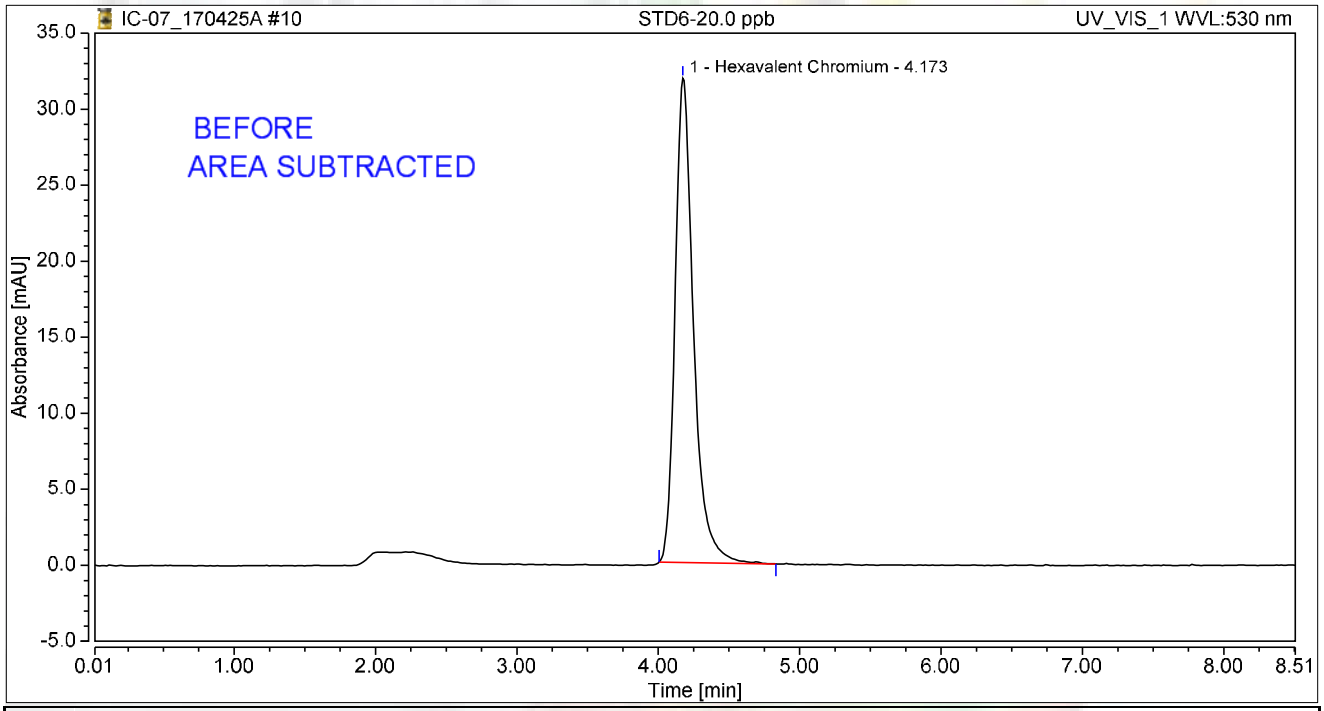
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.809	31.858	100.00	100.00	20.0099
Total:			**4.809**	**31.858**	**100.00**	**100.00**	

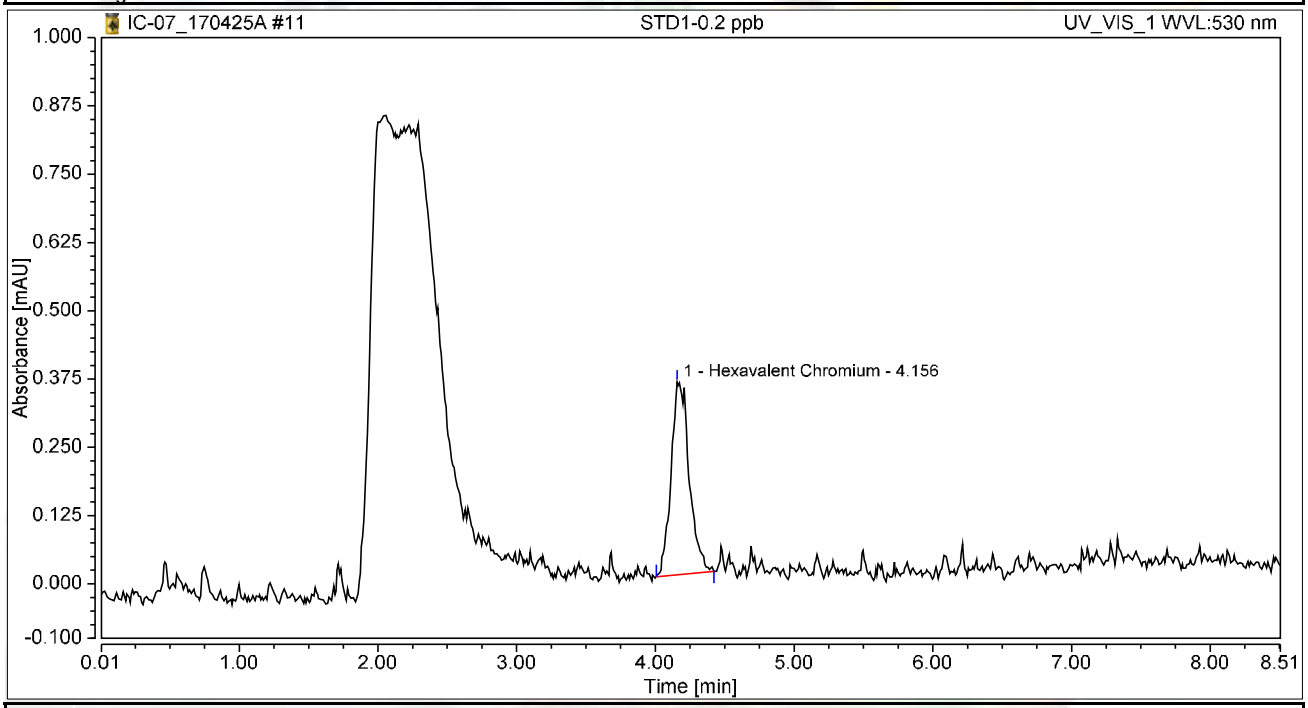
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



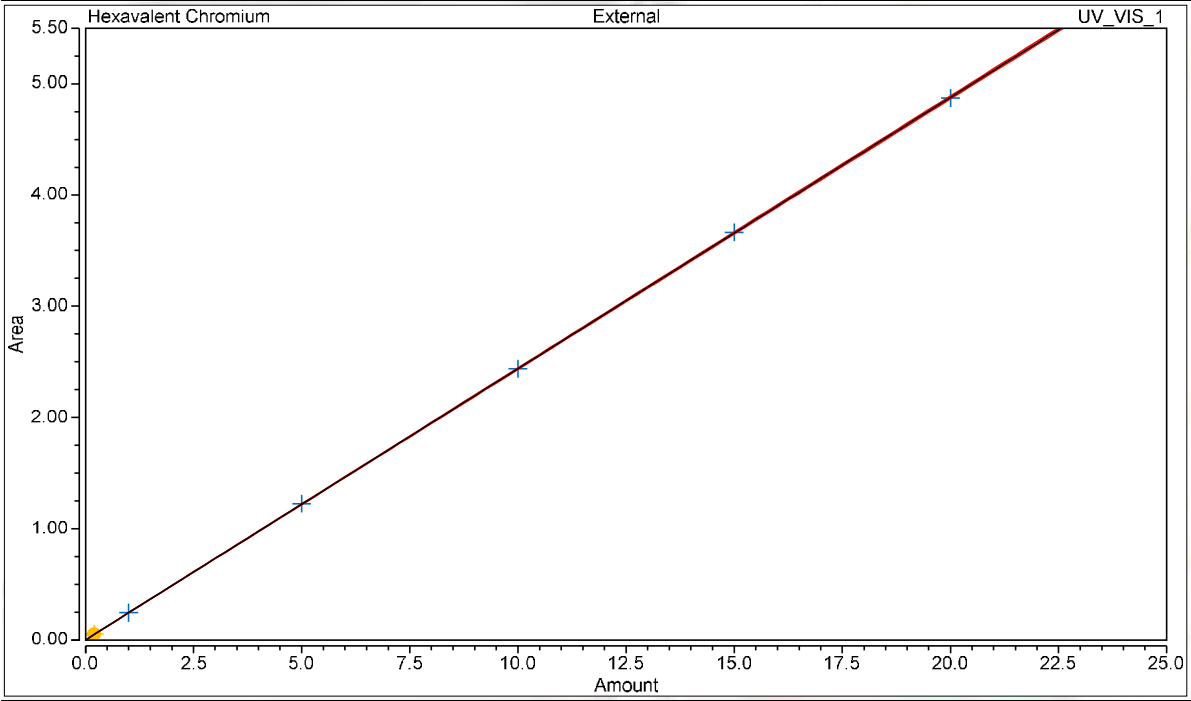
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.054	0.353	100.00	100.00	0.2201
Total:			**0.054**	**0.353**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2439
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99999

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

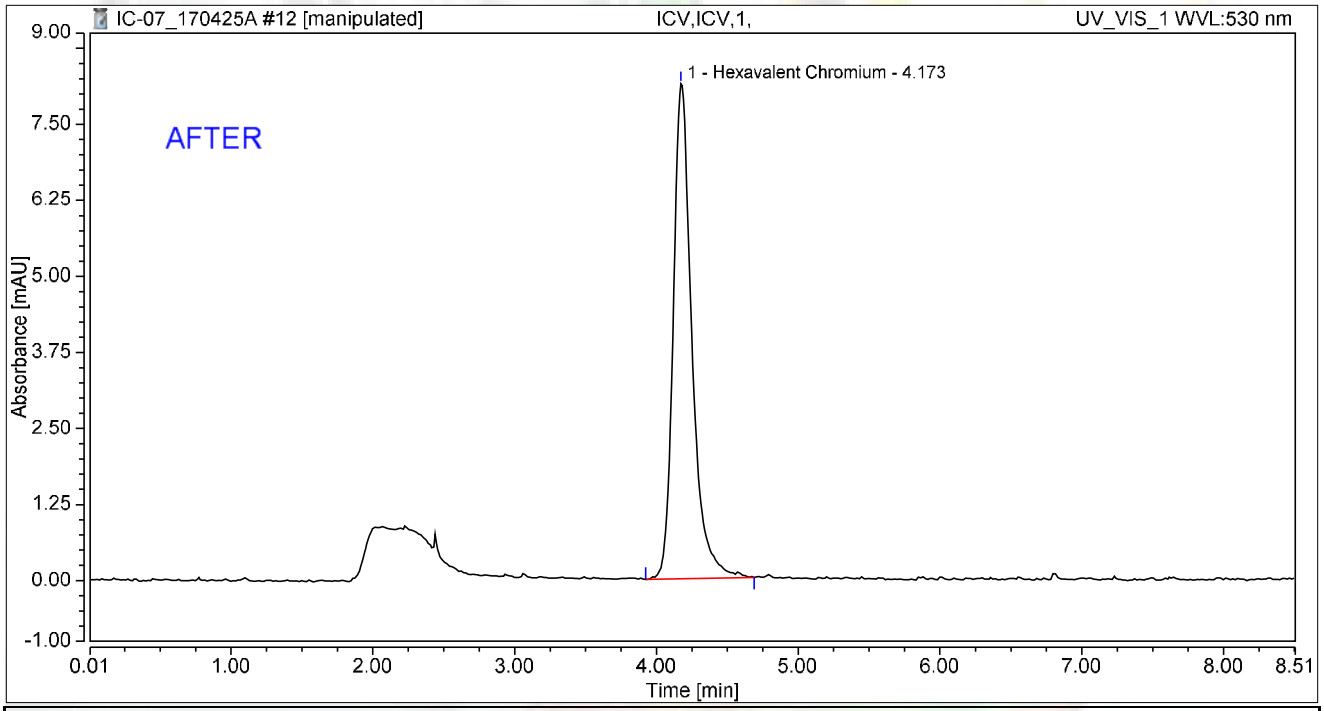
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD2-1.0 ppb	02	1.0000	0.2438	0.244	1.585
7	STD3-5.0 ppb	03	5.0000	1.2243	1.224	8.059
8	STD4-10.0 ppb	04	10.0000	2.4380	2.438	15.921
9	STD5-15.0 ppb	05	15.0000	3.6639	3.664	24.088
10	STD6-20.0 ppb	06	20.0000	4.8727	4.873	31.978
11	STD1-0.2 ppb	01	0.2000	0.0537	0.054	0.353

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.241	8.139	100.00	100.00	5.0868
Total:			**1.241**	**8.139**	**100.00**	**100.00**	

rba 4/30/2017

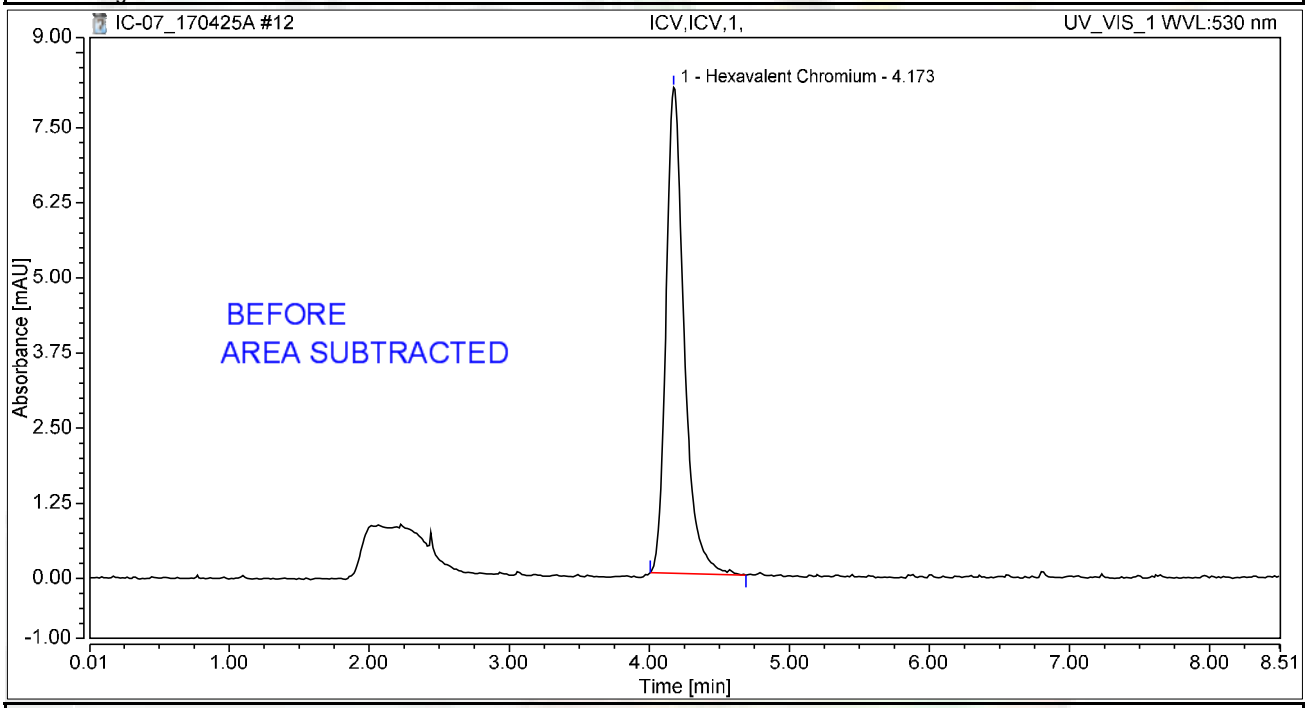
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.212	8.081	100.00	100.00	4.9703
Total:			**1.212**	**8.081**	**100.00**	**100.00**	

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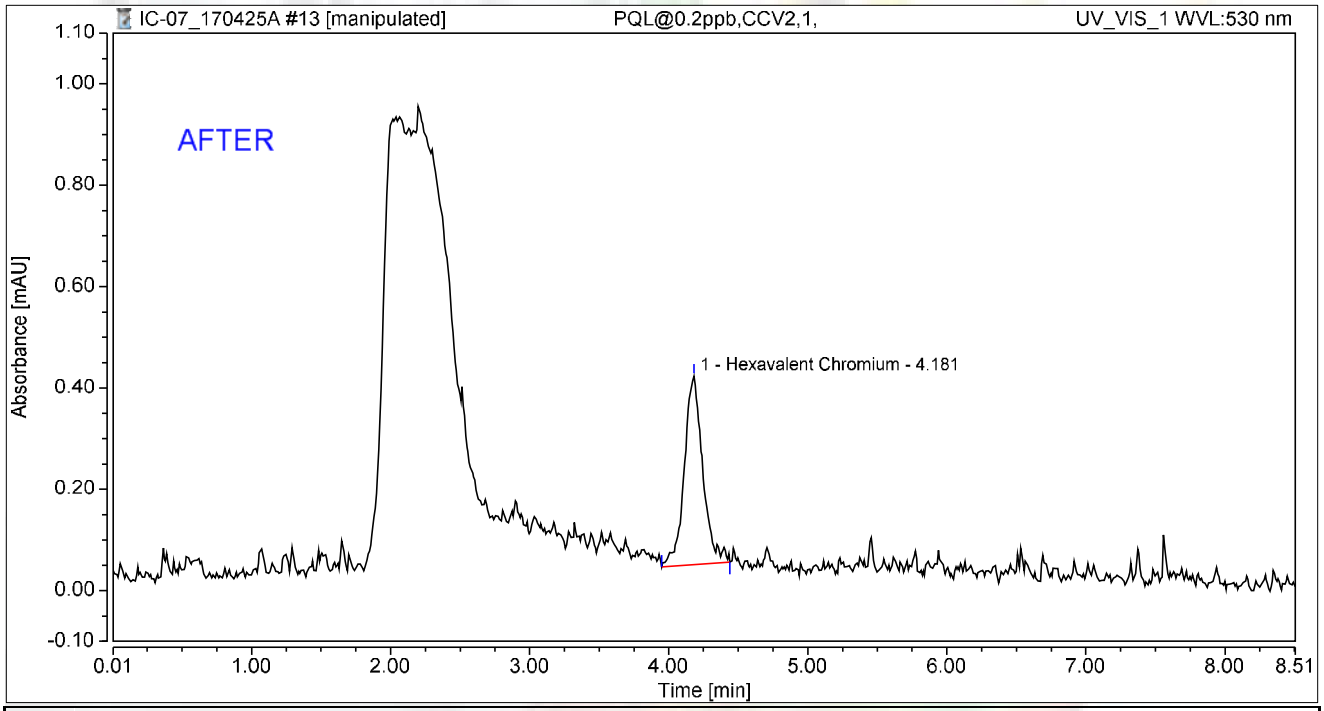
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.057	0.372	100.00	100.00	0.2353
Total:			**0.057**	**0.372**	**100.00**	**100.00**	

rba 4/30/2017

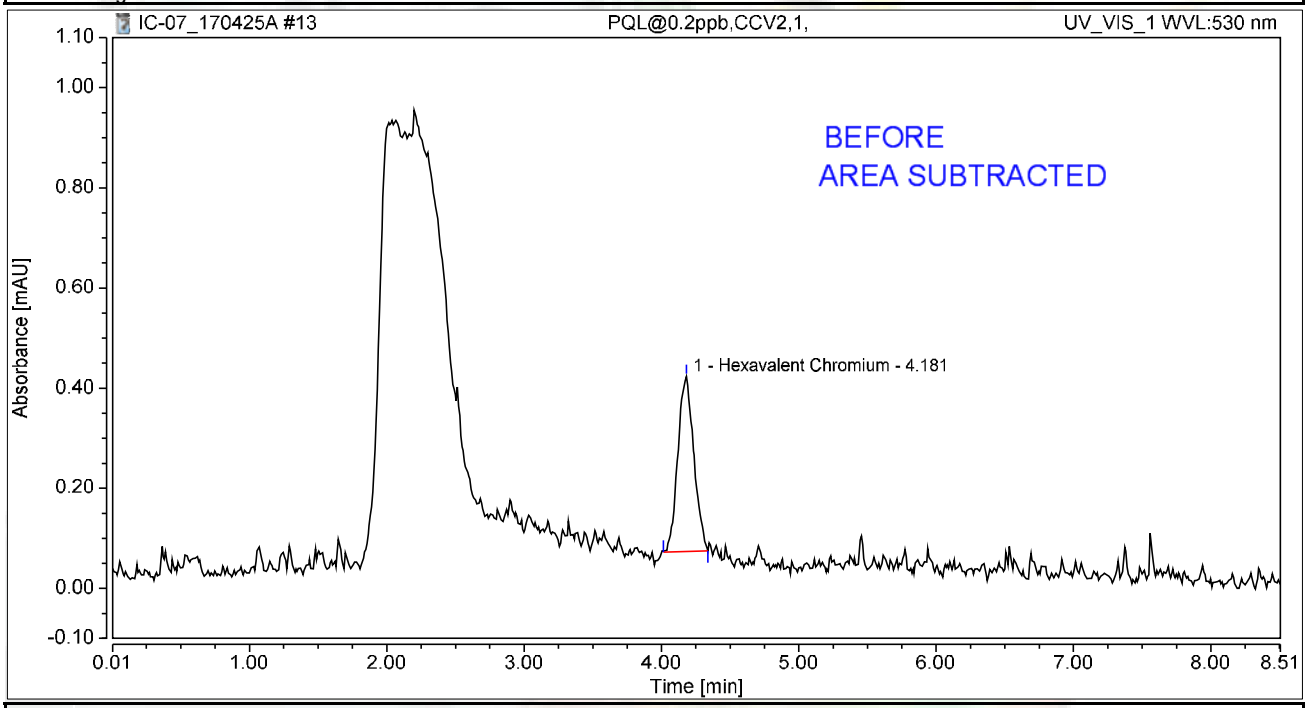
Reviewed by: Nancy 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.047	0.349	100.00	100.00	0.1927
Total:			**0.047**	**0.349**	**100.00**	**100.00**	

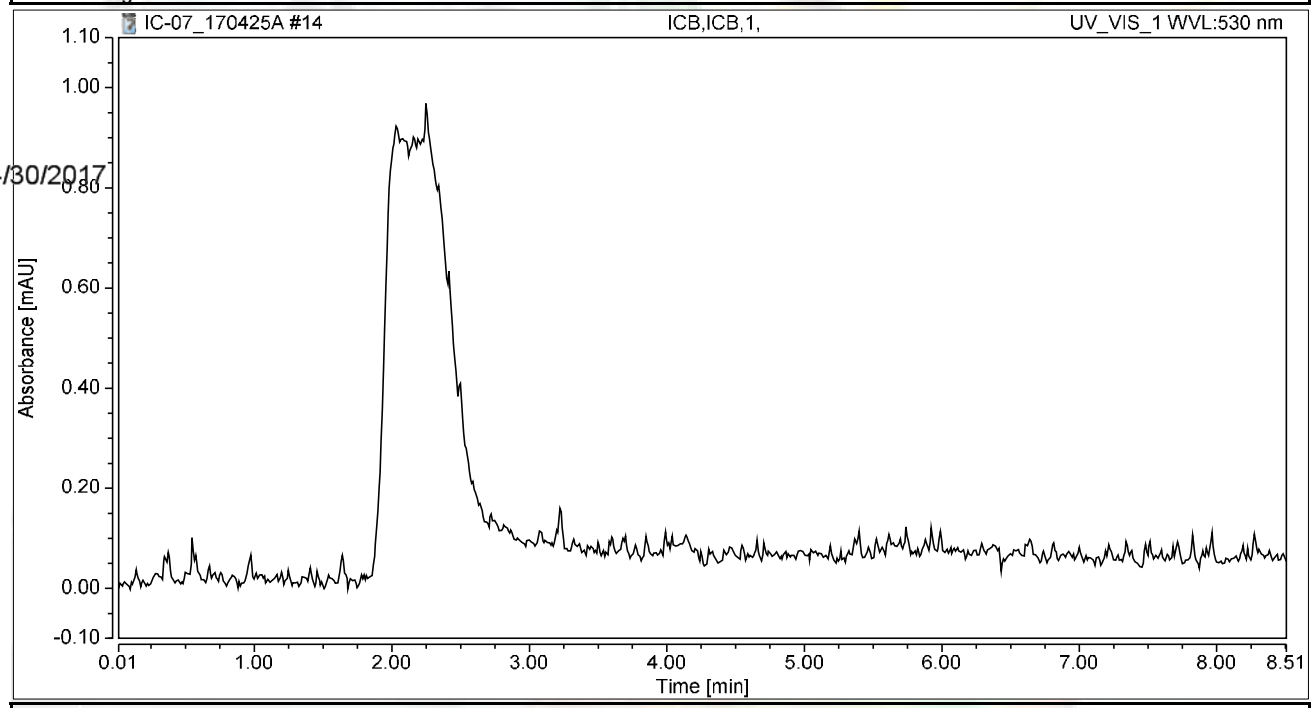
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



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Integration Results

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

RAW DATA

INJECTION LOG: 170426A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	04/26/17 8:57 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	04/26/17 9:08 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	04/26/17 9:17 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/26/17 9:27 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	04/26/17 9:36 AM	Reported
17	MB-R114888	MBLK	1	Hexavalent Chromium	04/26/17 9:46 AM	Reported
18	LCS-R114888	LCS	1	Hexavalent Chromium	04/26/17 9:55 AM	Reported
19	N023998-001A	SAMP	1	Hexavalent Chromium	04/26/17 10:05 AM	Reported
20	N023998-001ADUP	DUP	1	Hexavalent Chromium	04/26/17 10:14 AM	Reported
21	N023998-001AMS	MS	1	Hexavalent Chromium	04/26/17 10:24 AM	Reported
22	N023998-002A	SAMP	100	Hexavalent Chromium	04/26/17 10:33 AM	Reported
23	N023998-002AMS	MS	100	Hexavalent Chromium	04/26/17 10:43 AM	Reported
24	N023998-002AMSD	MSD	100	Hexavalent Chromium	04/26/17 10:52 AM	Reported
25	N023999-001A	SAMP	100	Hexavalent Chromium	04/26/17 11:01 AM	Reported
26	N023999-001AMS	MS	100	Hexavalent Chromium	04/26/17 11:11 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	04/26/17 11:20 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	04/26/17 11:30 AM	Reported
29	N023999-002A	SAMP	1000	Hexavalent Chromium	04/26/17 11:39 AM	Reported
30	N023999-002AMS	MS	1000	Hexavalent Chromium	04/26/17 11:49 AM	Reported
31	N023999-003A	SAMP	1	Hexavalent Chromium	04/26/17 11:58 AM	Reported
32	N023999-003AMS	MS	1	Hexavalent Chromium	04/26/17 12:08 PM	Reported
33	N023844-002A	SAMP	1	Hexavalent Chromium	04/26/17 12:17 PM	Not Reported
34	N023844-002AMS	MS	1	Hexavalent Chromium	04/26/17 12:27 PM	Not Reported
35	N023914-005A	SAMP	1	Hexavalent Chromium	04/26/17 12:36 PM	Not Reported
36	N023914-005AMS	MS	1	Hexavalent Chromium	04/26/17 12:45 PM	Not Reported
37	CCV-3	CCV	1	Hexavalent Chromium	04/26/17 1:21 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	04/26/17 1:33 PM	Reported

5/9/2017

Injection Log Summary

Sequence Details

Name:	**IC-07_170426A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**26/Apr/17 14:55:48**
No. of Injections:	**41**	*Updated By:*	**ics 5000**

Injection Details

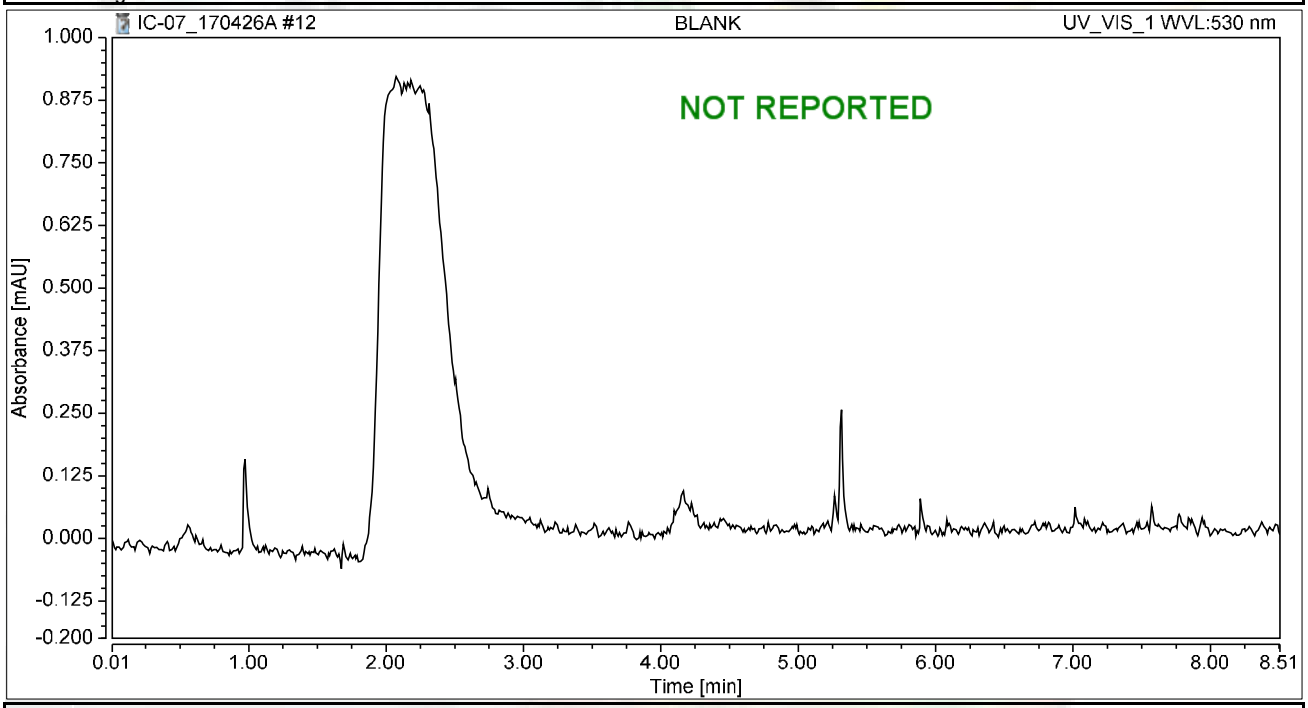
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		04/26/2017 08:57	Finished	
13	BLANK	2	1000	Unknown		04/26/2017 09:08	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		04/26/2017 09:17	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,	4	1000	Unknown		04/26/2017 09:27	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		04/26/2017 09:36	Finished	CCB R170419B
17	MB-H2O,MBLK,1	6	1000	Unknown		04/26/2017 09:46	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		04/26/2017 09:55	Finished	LCS, IWST-170330B
19	N023998-001A,SAMP	8	1000	Unknown		04/26/2017 10:05	Finished	SAMP, 10mL
20	N023998-001ADUP,D	9	1000	Unknown		04/26/2017 10:14	Finished	DUP, 10mL
21	N023998-001AMS,MS	10	1000	Unknown		04/26/2017 10:24	Finished	MS (1ppb), IWST-170330B,10
22	N023998-002A,SAMP	11	1000	Unknown		04/26/2017 10:33	Finished	SAMP,0.1>10mL
23	N023998-002AMS,MS	12	1000	Unknown		04/26/2017 10:43	Finished	MS (5ppb), IWST-170330B,0.1
24	N023998-002AMSD,M	13	1000	Unknown		04/26/2017 10:52	Finished	MSD (5ppb), IWST-170330B,0.
25	N023999-001A,SAMP	14	1000	Unknown		04/26/2017 11:01	Finished	SAMP,0.1>10mL
26	N023999-001AMS,MS	15	1000	Unknown		04/26/2017 11:11	Finished	MS (5ppb), IWST-170330B,0.1
27	CCV-2,CCV1,1,	16	1000	Unknown		04/26/2017 11:20	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	17	1000	Unknown		04/26/2017 11:30	Finished	CCB R170419A
29	N023999-002A,SAMP	18	1000	Unknown		04/26/2017 11:39	Finished	SAMP,0.01>10mL
30	N023999-002AMS,MS	19	1000	Unknown		04/26/2017 11:49	Finished	MS (5ppb), IWST-170330B,0.0
31	N023999-003A,SAMP	20	1000	Unknown		04/26/2017 11:58	Finished	SAMP, 10mL
32	N023999-003AMS,MS	21	1000	Unknown		04/26/2017 12:08	Finished	MS (1ppb), IWST-170330B,10
33	N023844-002A,SAMP	22	1000	Unknown		04/26/2017 12:17	Finished	SAMP, 10mL
34	N023844-002AMS,MS	23	1000	Unknown		04/26/2017 12:27	Finished	MS (1ppb), IWST-170330B,10
35	N023914-005A,SAMP	24	1000	Unknown		04/26/2017 12:36	Finished	SAMP, 10mL
36	N023914-005AMS,MS	25	1000	Unknown		04/26/2017 12:45	Finished	MS (5ppb), IWST-170330B,10
37	CCV-3,CCV,1,	28	1000	Unknown		04/26/2017 13:21	Finished	CCV @5ppb, IWST-170330B
38	CCB-3,CCB,1,	29	1000	Unknown		04/26/2017 13:33	Finished	CCB R170414A
39	SHUTDOWN	30	1000	Unknown		04/26/2017 13:42	Finished	
40	Eluent: R170422B	31	1000	Unknown		n.a.	Finished	Eluent
41	PCR: R170425A	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 08:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

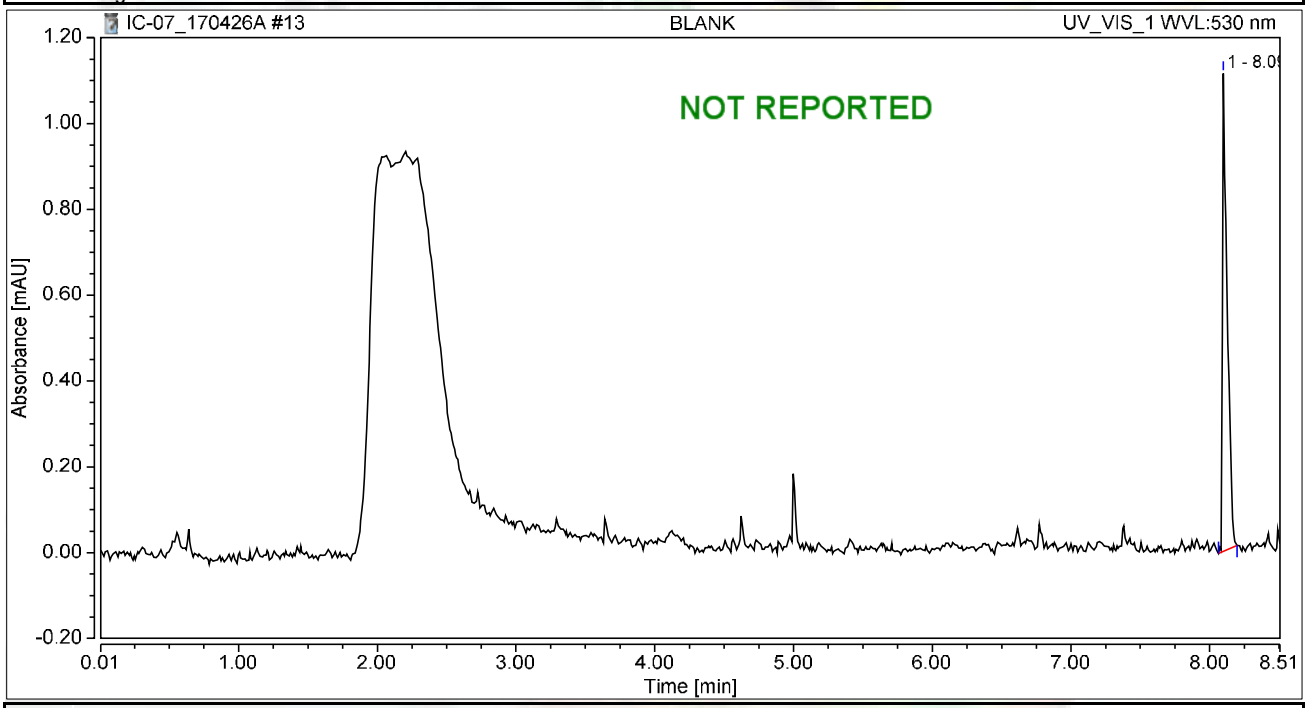
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

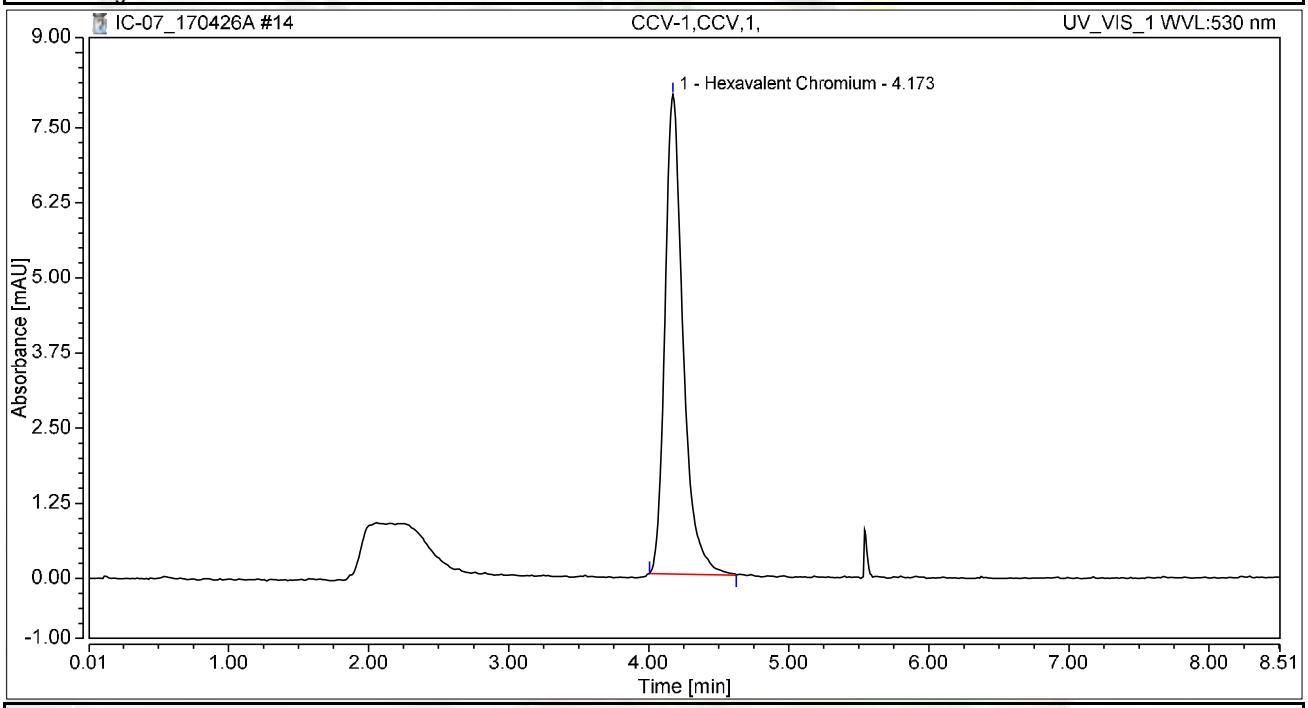
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.098	0.044	1.114	100.00	100.00	n.a.
Total:			**0.044**	**1.114**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 09:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

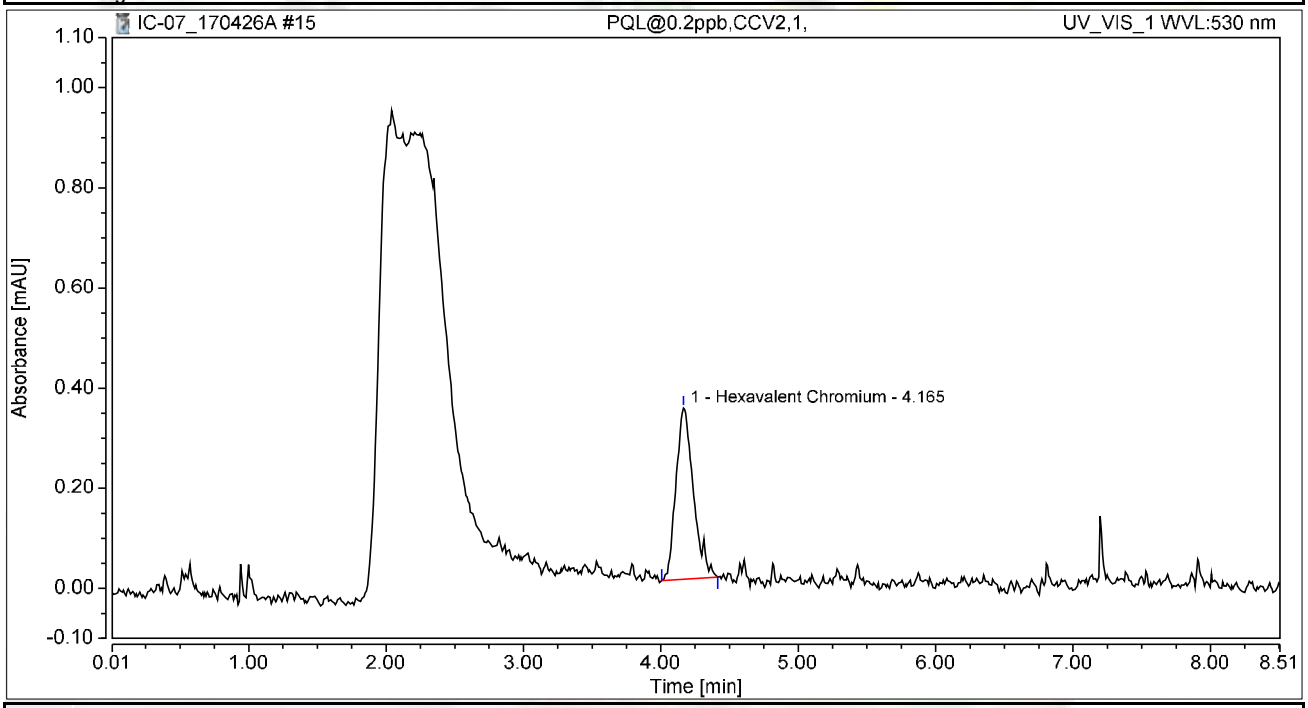
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.197	7.978	100.00	100.00	4.9097
Total:			**1.197**	**7.978**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

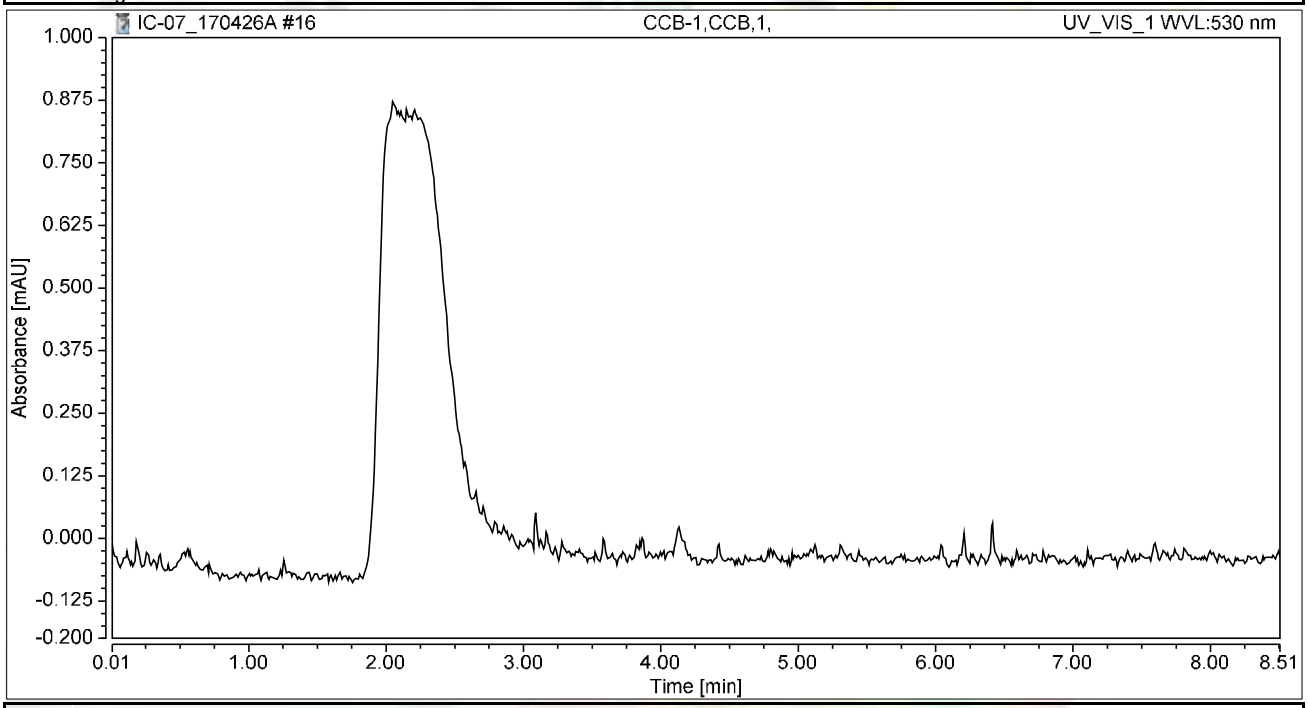
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.050	0.342	100.00	100.00	0.2065
Total:			**0.050**	**0.342**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 09:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

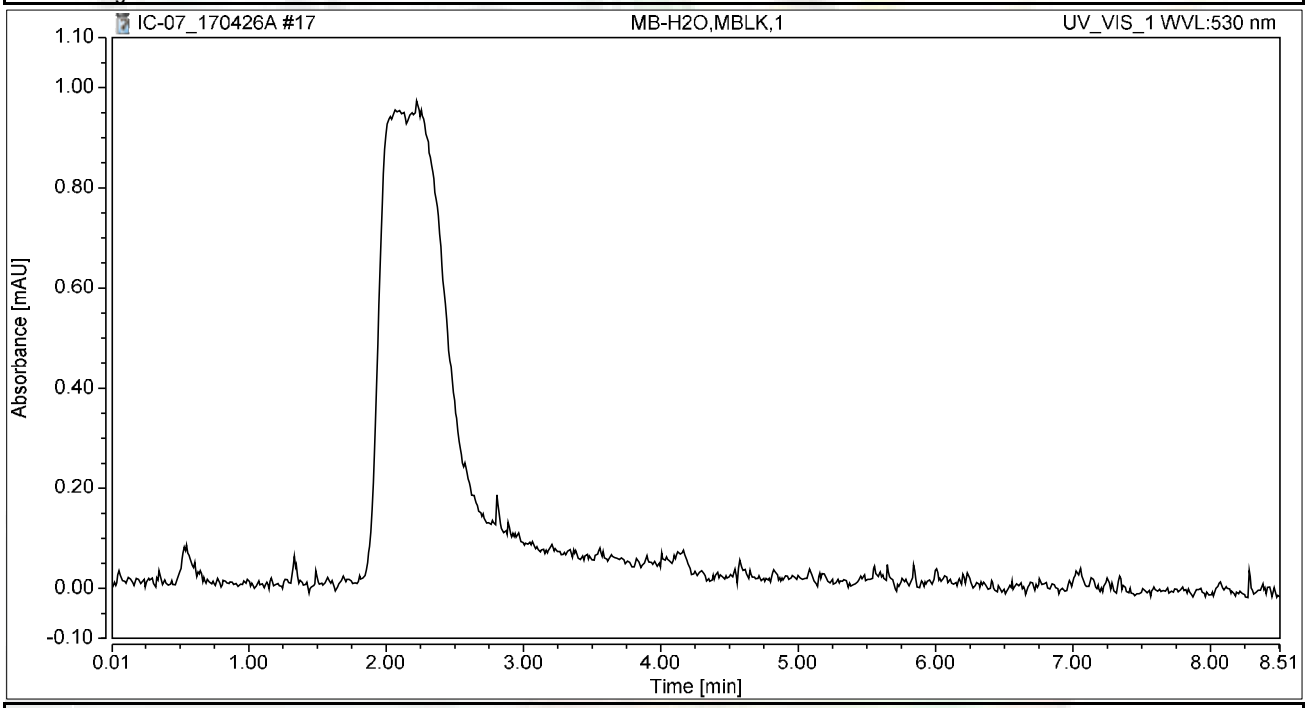
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

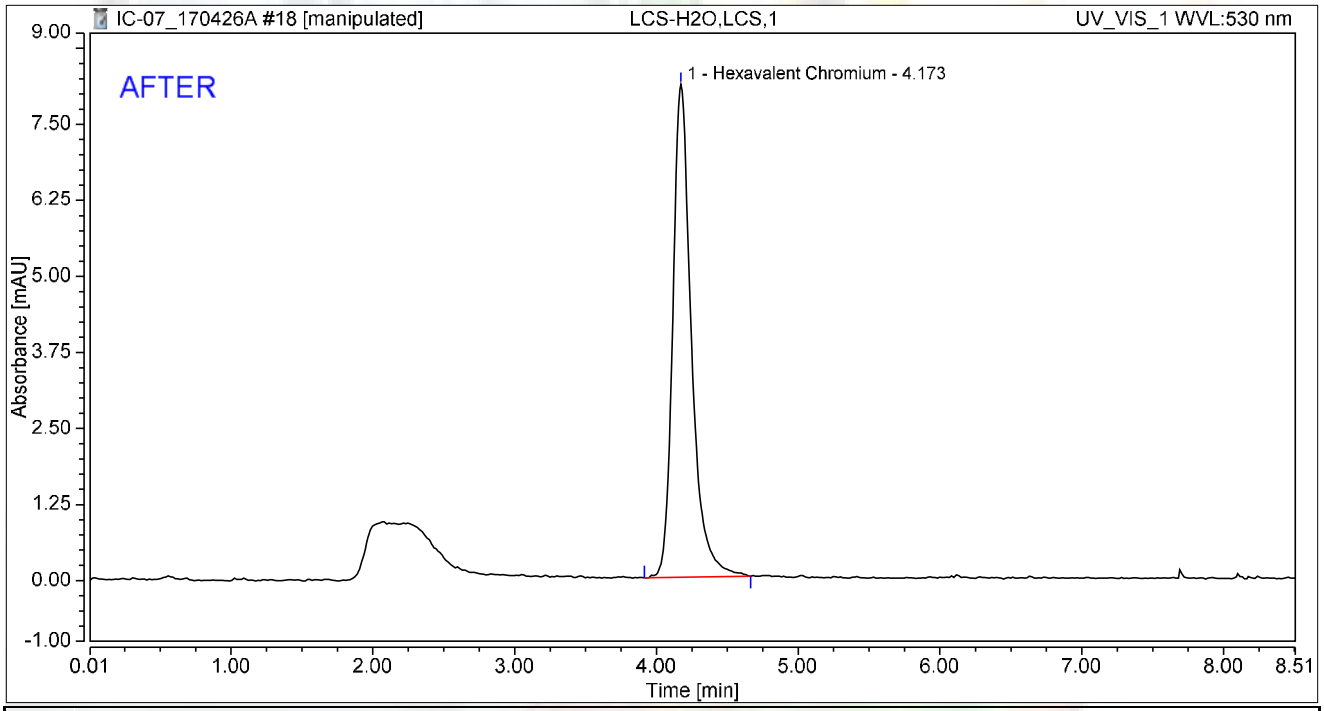
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.232	8.098	100.00	100.00	5.0529
Total:			**1.232**	**8.098**	**100.00**	**100.00**	

rba 4/30/2017

Reviewed by: 5/9/2017

My first report/Integration

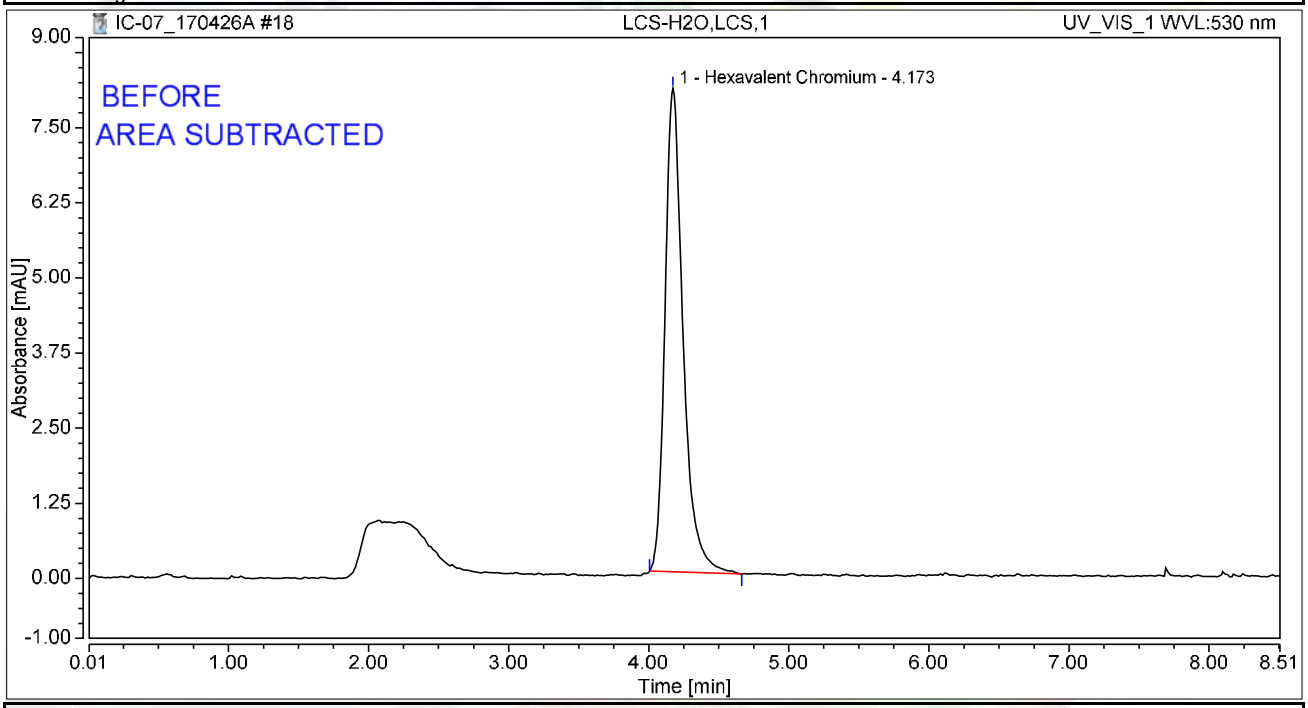
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.207	8.044	100.00	100.00	4.9473
Total:			**1.207**	**8.044**	**100.00**	**100.00**	

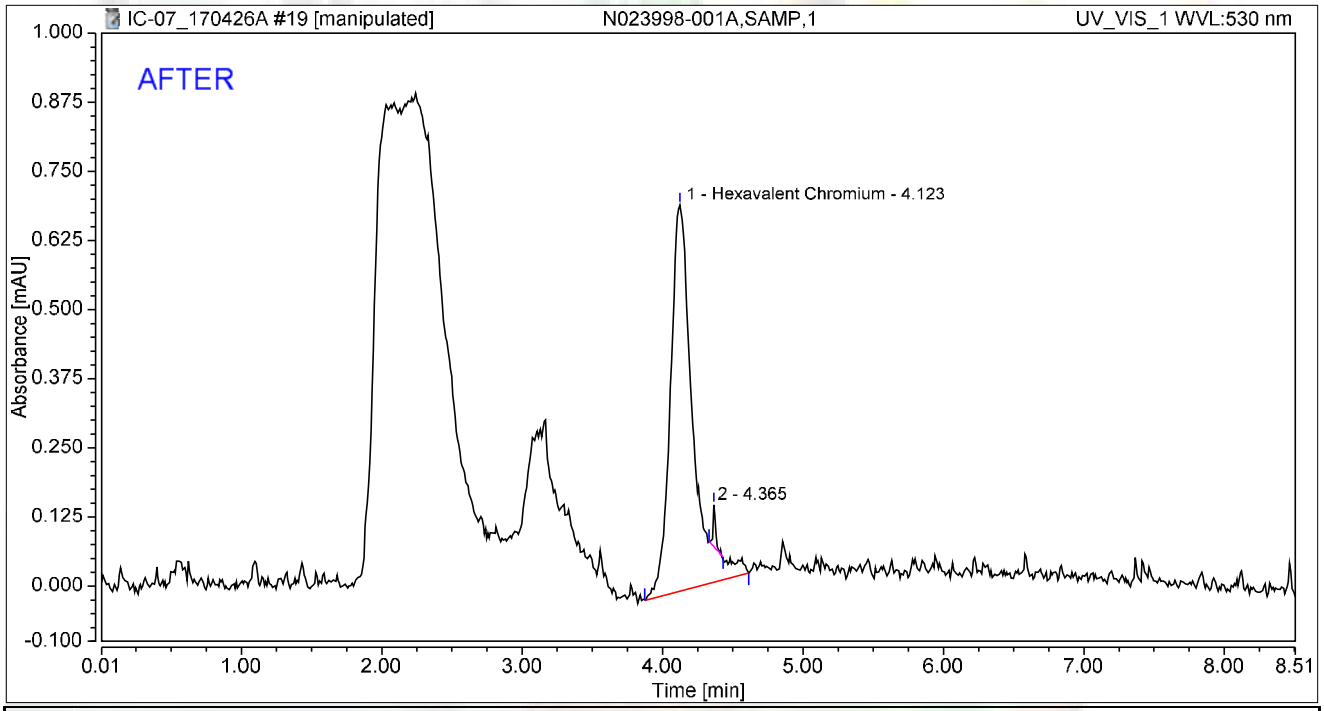
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.130	0.699	98.78	90.21	0.5323
2		4.365	0.002	0.076	1.22	9.79	n.a.
Total:			**0.131**	**0.774**	**100.00**	**100.00**	

rba 4/30/2017

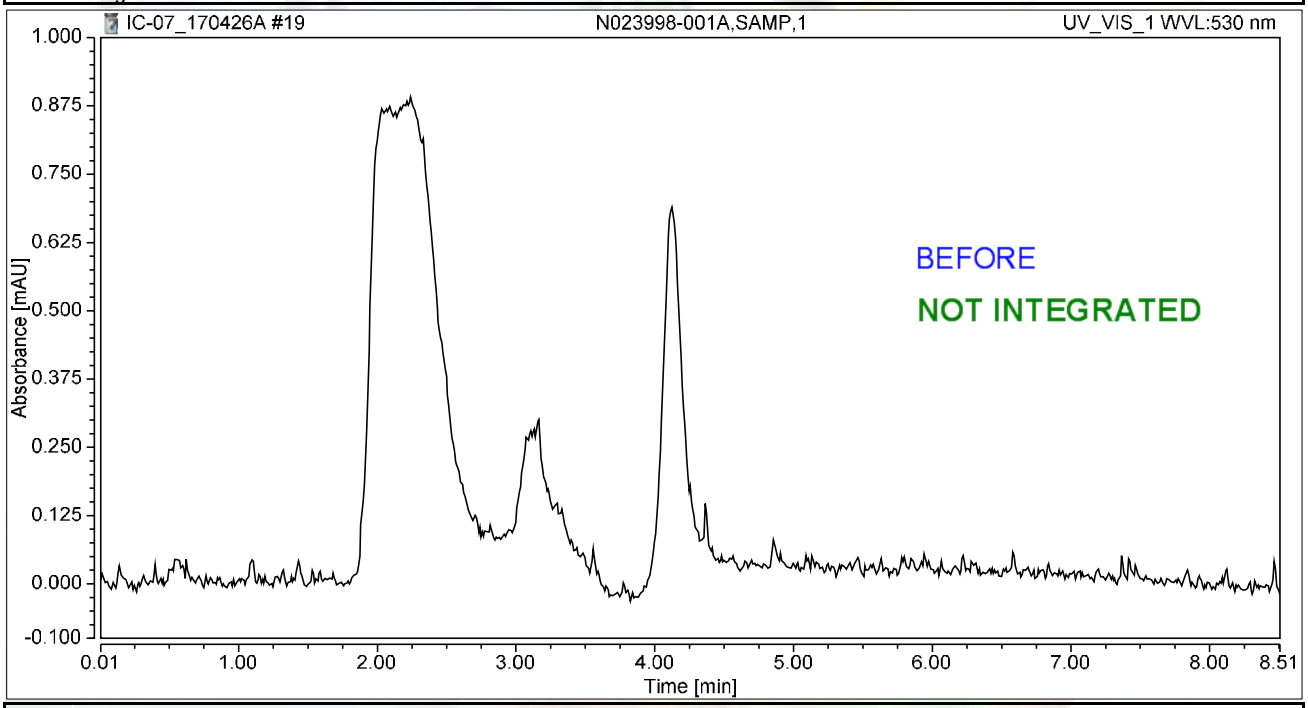
Reviewed by: Nancy 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

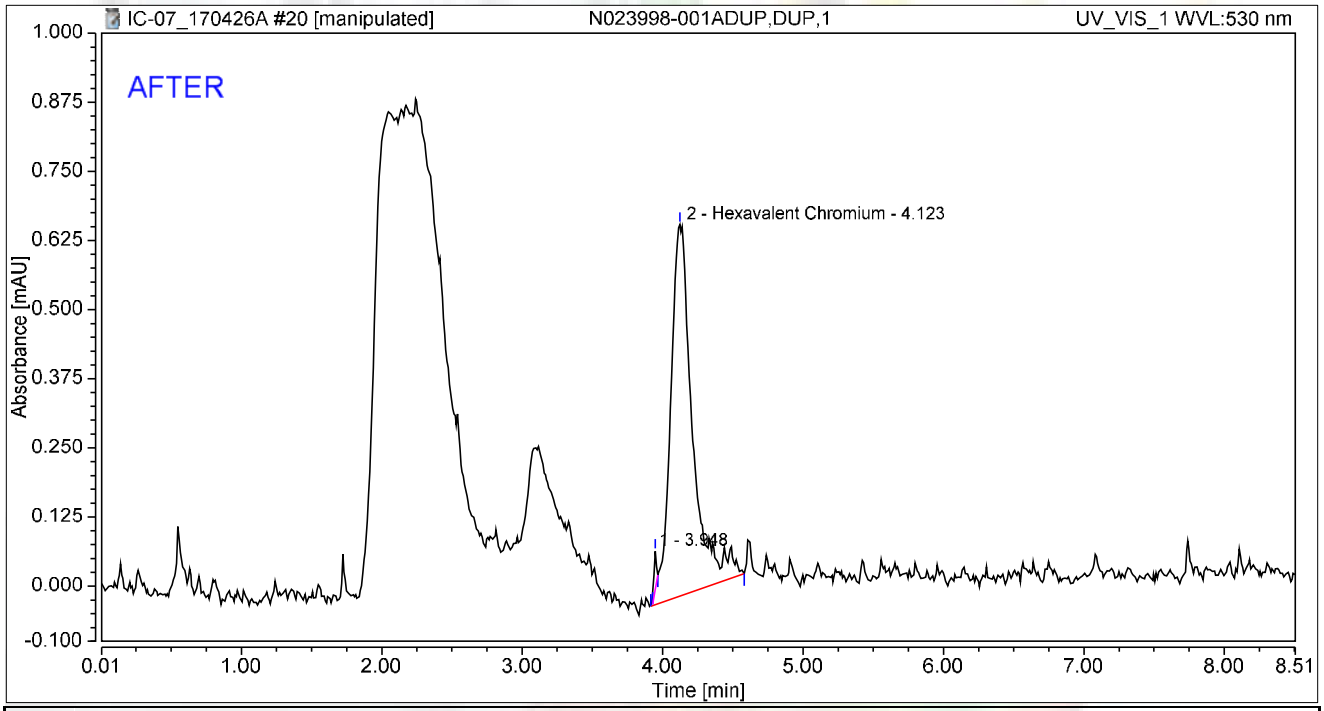
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.948	0.001	0.069	0.93	9.32	n.a.
2	Hexavalent Chromium	4.123	0.122	0.672	99.07	90.68	0.4991
Total:			**0.123**	**0.741**	**100.00**	**100.00**	

rba 4/30/2017

Reviewed by: Nancy 5/9/2017

My first report/Integration

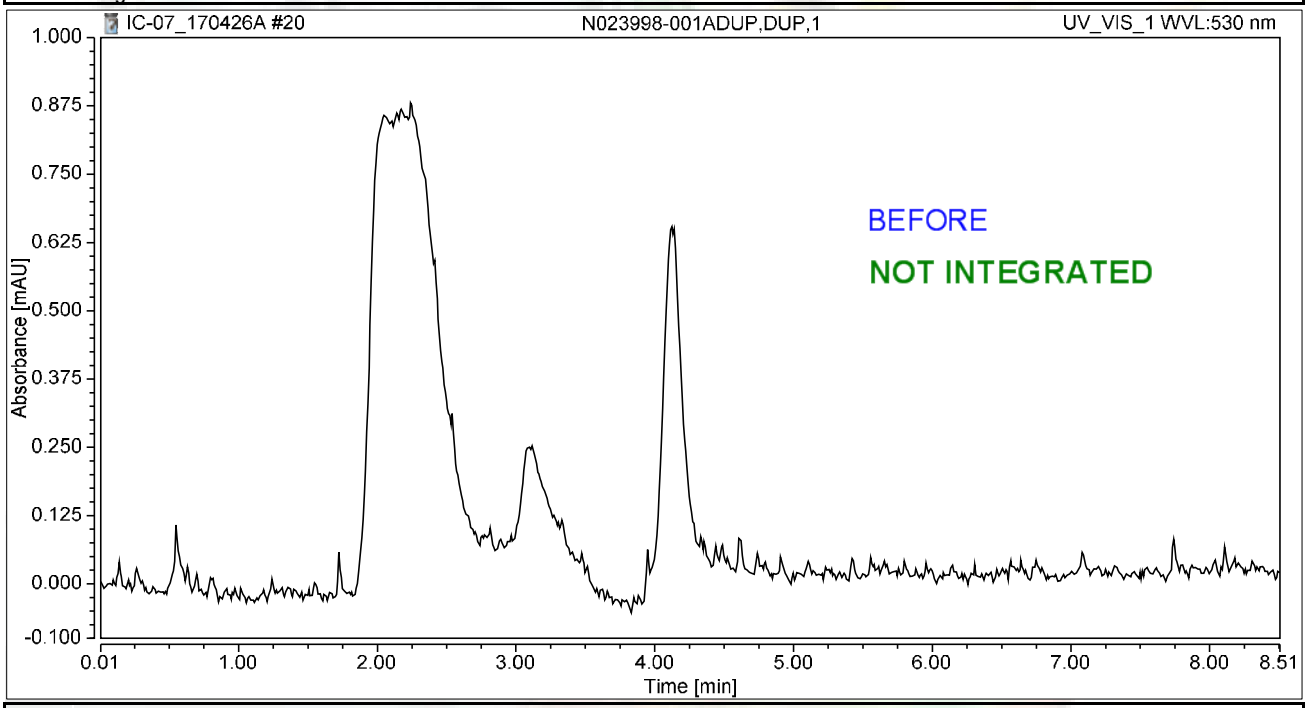
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023998-001ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

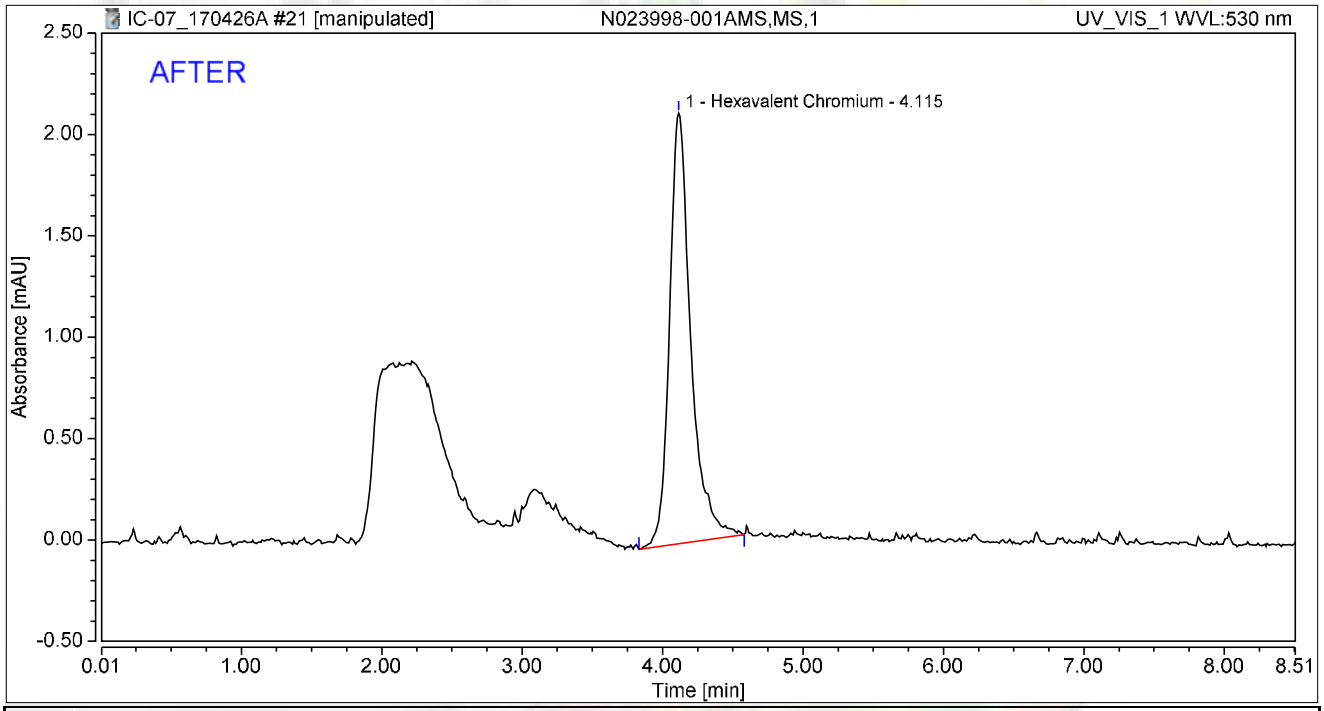
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.372	2.124	100.00	100.00	1.5266
Total:			**0.372**	**2.124**	**100.00**	**100.00**	

rba 4/30/2017

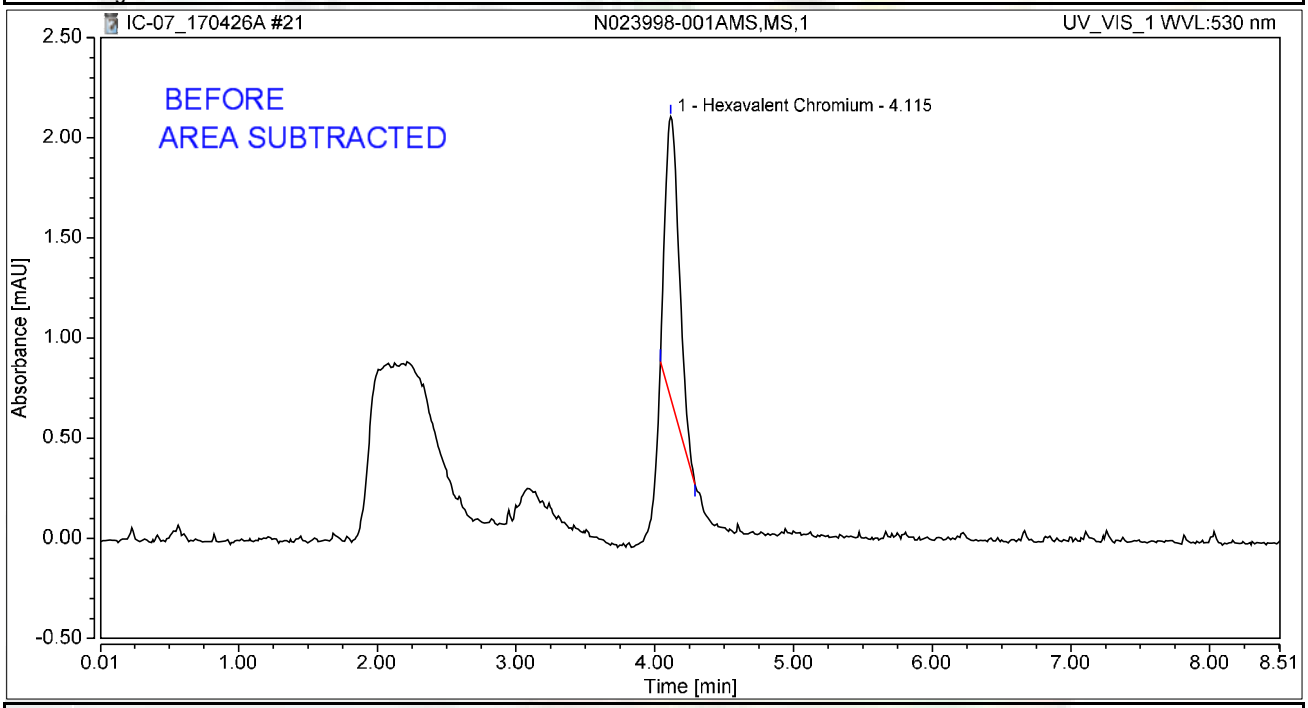
Reviewed by: 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.167	1.407	100.00	100.00	0.6851
Total:			**0.167**	**1.407**	**100.00**	**100.00**	

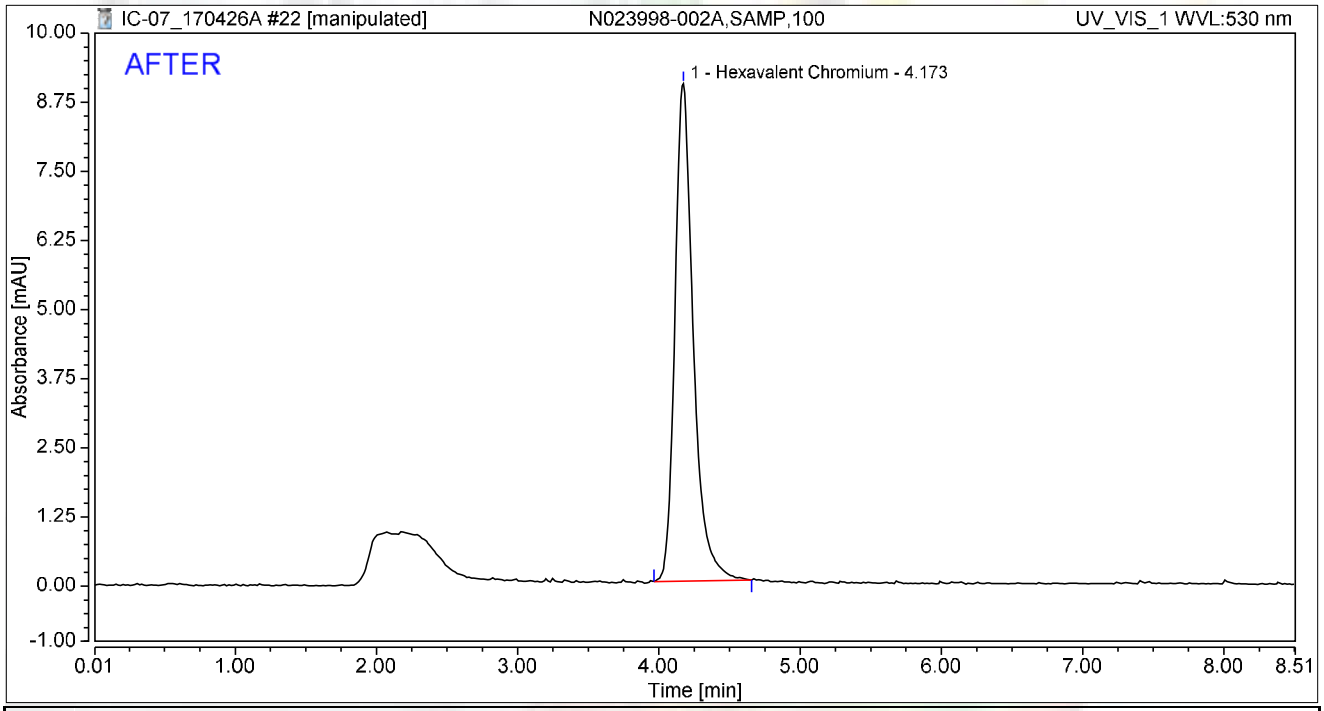
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-002A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.361	8.993	100.00	100.00	5.5794
Total:			**1.361**	**8.993**	**100.00**	**100.00**	

rba 4/30/2017

Reviewed by: Nancy 5/9/2017

My first report/Integration

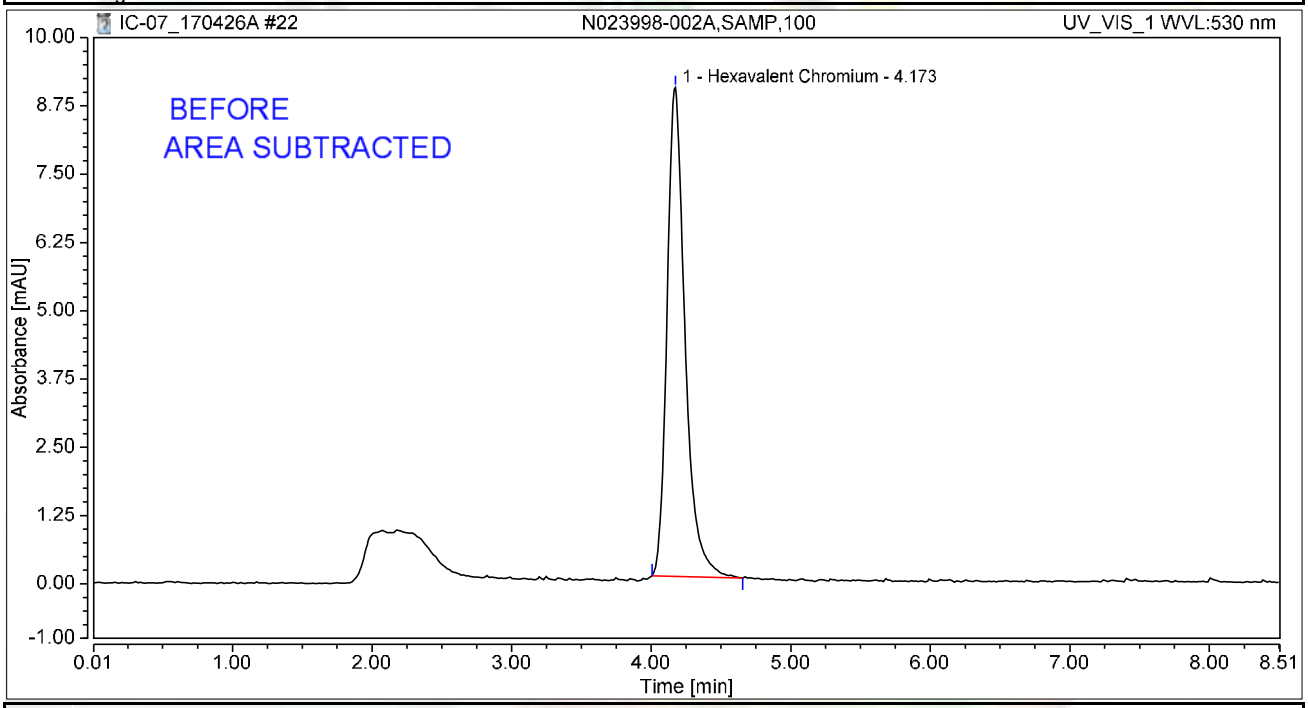
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023998-002A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.339	8.946	100.00	100.00	5.4909
Total:			**1.339**	**8.946**	**100.00**	**100.00**	

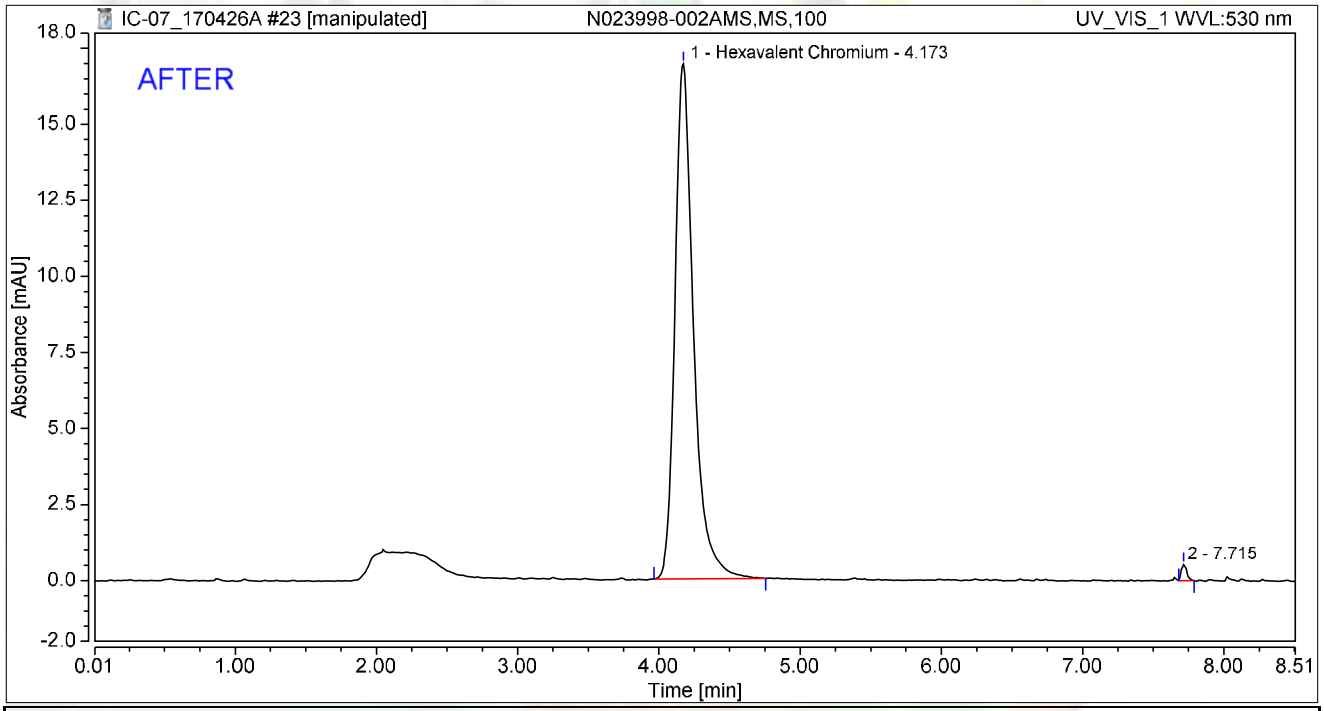
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-002AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.593	16.942	99.07	96.96	10.6323
2		7.715	0.024	0.531	0.93	3.04	n.a.
Total:			**2.617**	**17.473**	**100.00**	**100.00**	

rba 4/30/2017

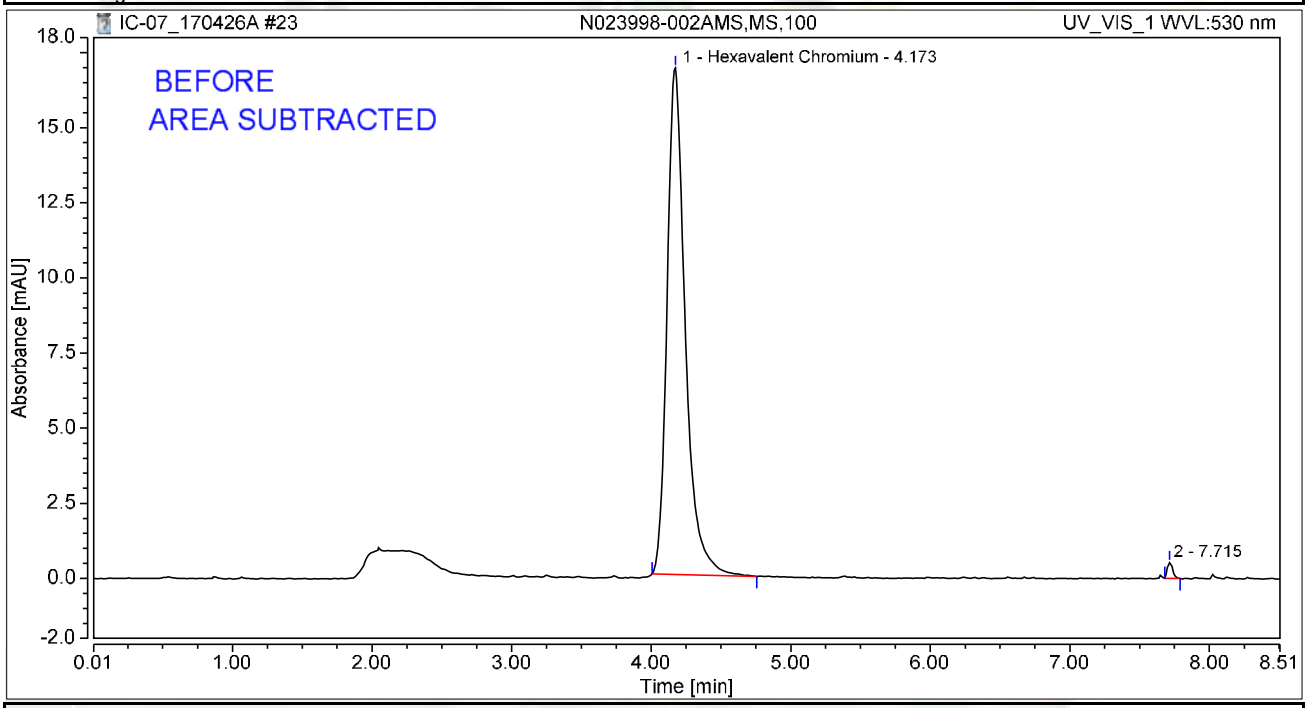
Reviewed by: 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-002AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.551	16.858	99.05	96.95	10.4614
2		7.715	0.024	0.531	0.95	3.05	n.a.
Total:			**2.576**	**17.390**	**100.00**	**100.00**	

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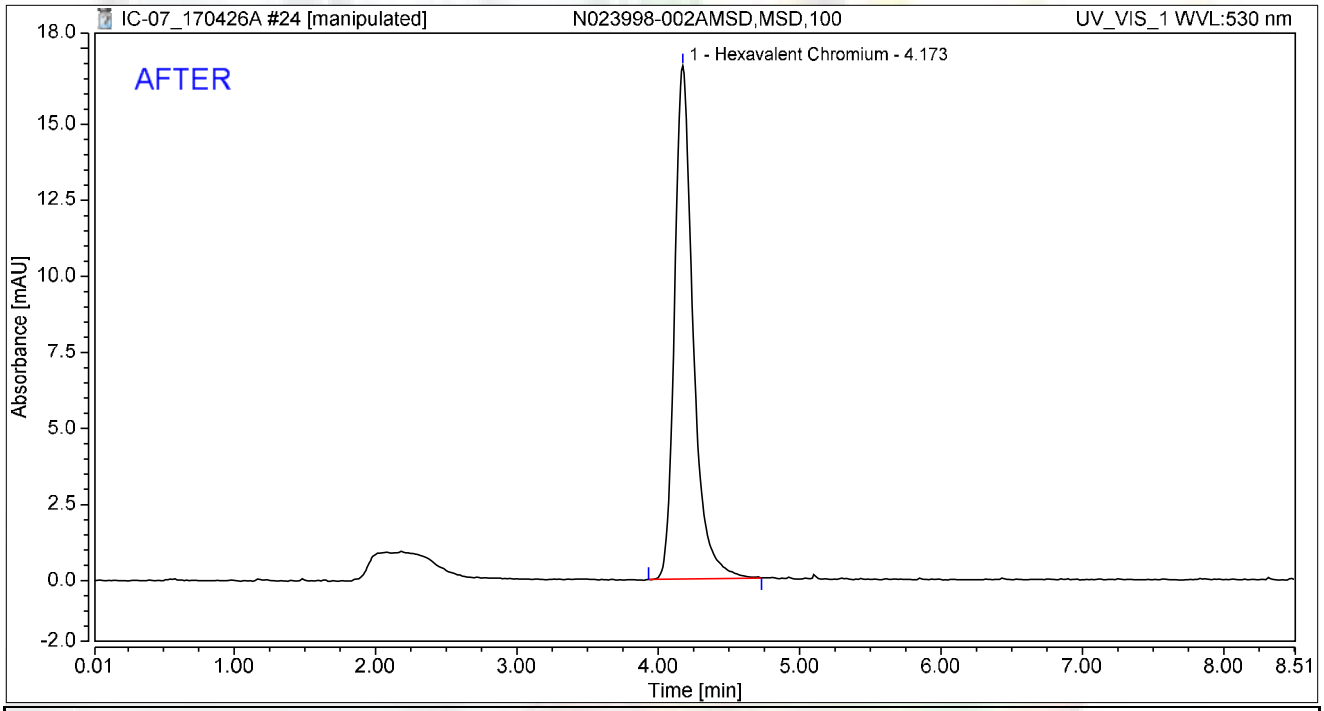
Chromatogram and Results

Injection Details

Injection Name:	**N023998-002AMSD,MSD,100**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.572	16.872	100.00	100.00	10.5446
Total:			**2.572**	**16.872**	**100.00**	**100.00**	

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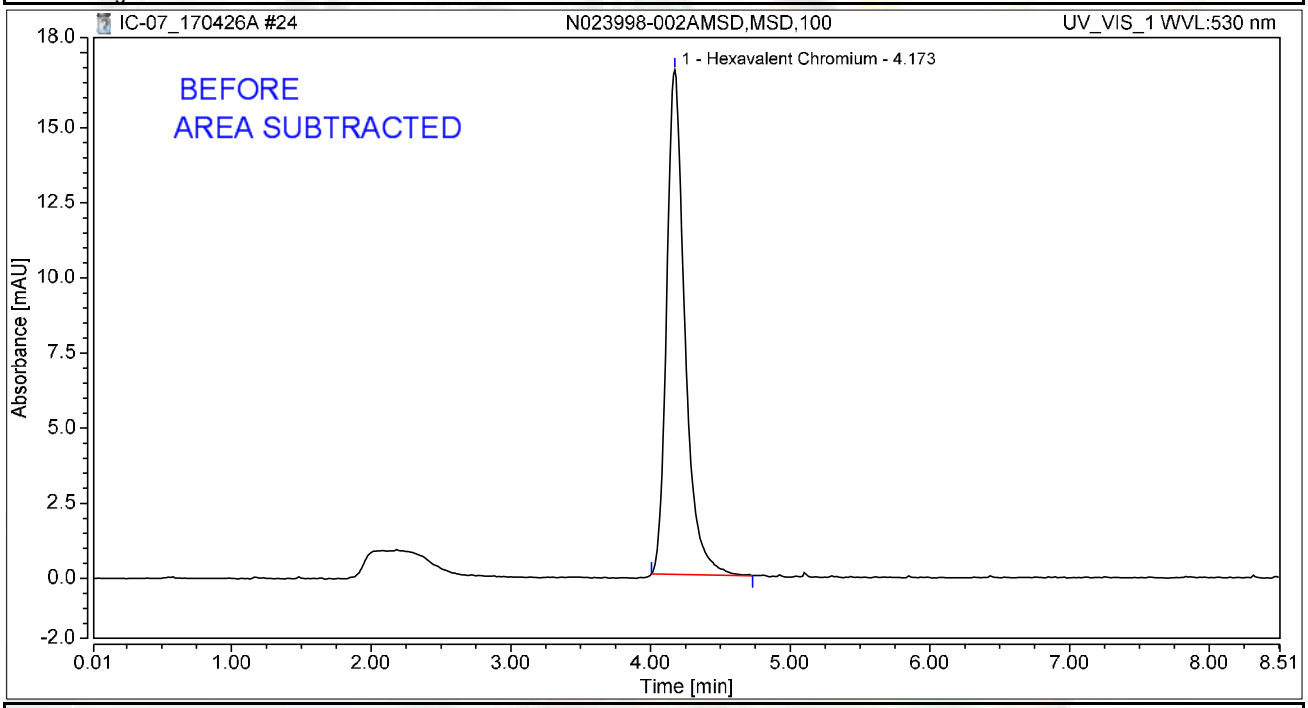
Reviewed by: 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023998-002AMSD,MSD,100**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.532	16.790	100.00	100.00	10.3812
Total:			**2.532**	**16.790**	**100.00**	**100.00**	

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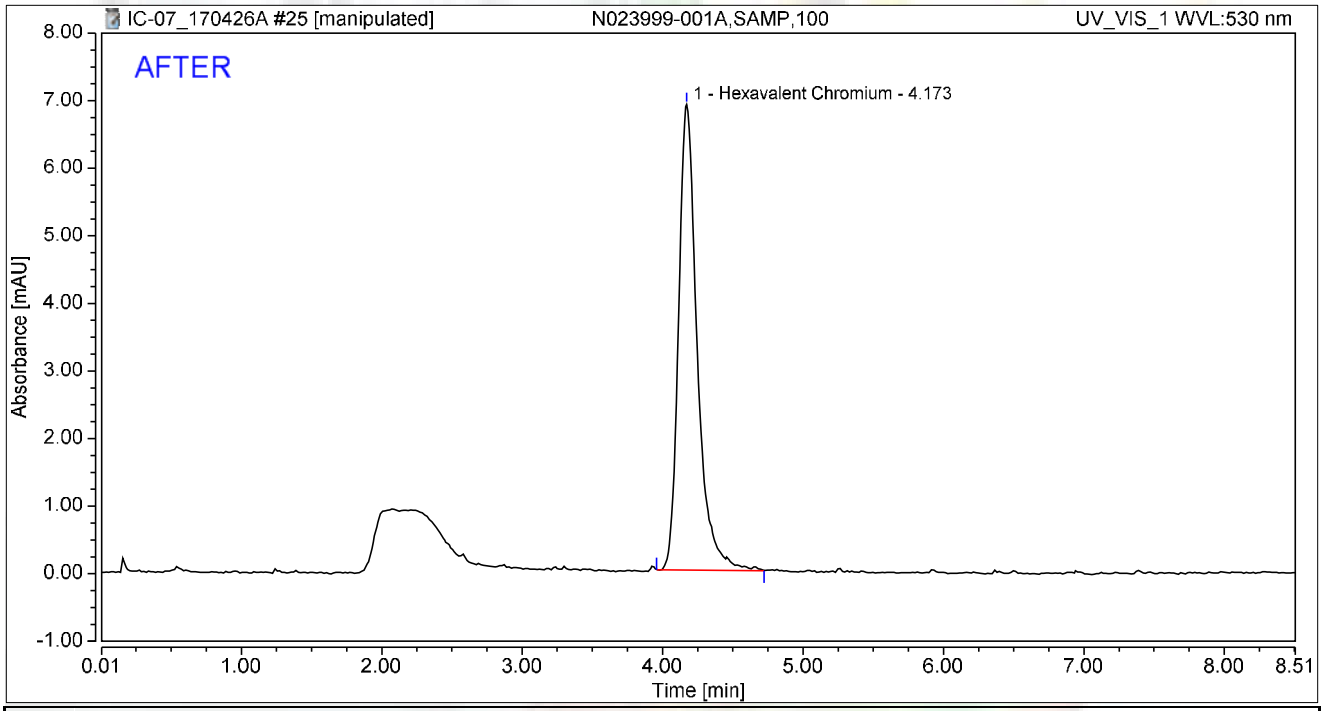
Chromatogram and Results

Injection Details

Injection Name:	**N023999-001A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.060	6.888	100.00	100.00	4.3465
Total:			**1.060**	**6.888**	**100.00**	**100.00**	

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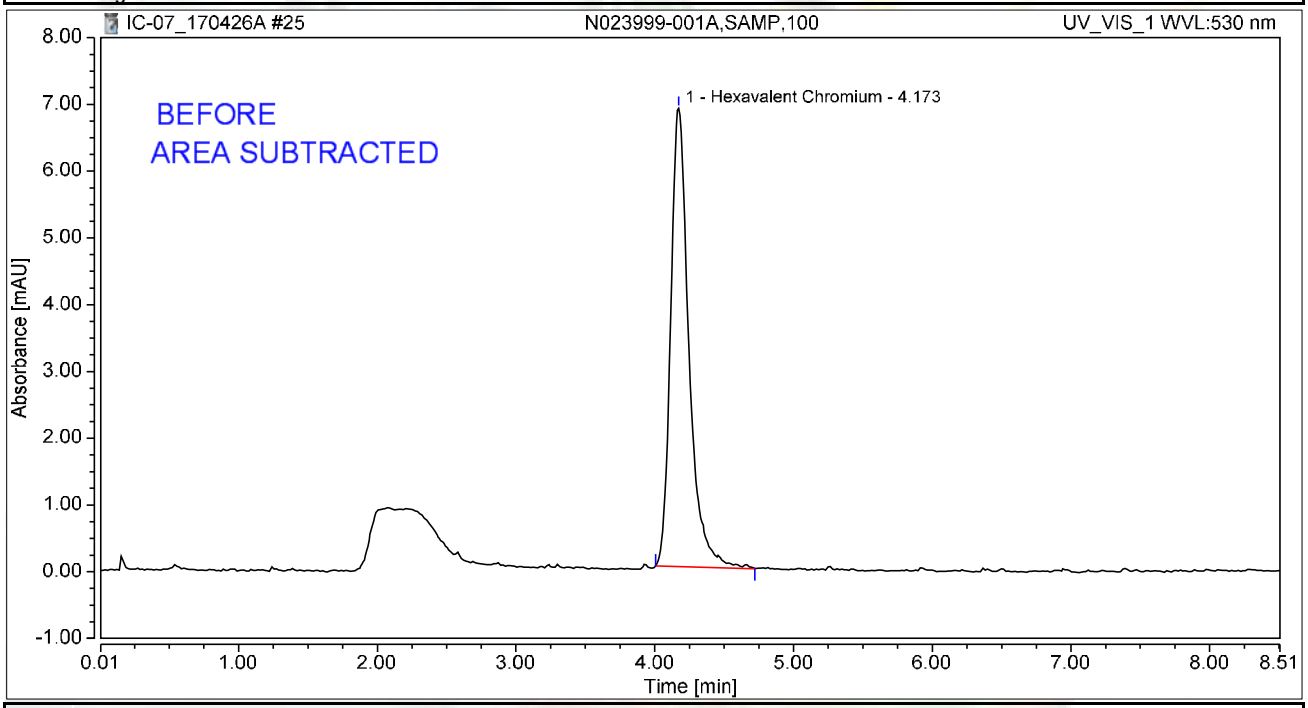
Reviewed by: Nancy 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023999-001A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.049	6.866	100.00	100.00	4.3028
Total:			**1.049**	**6.866**	**100.00**	**100.00**	

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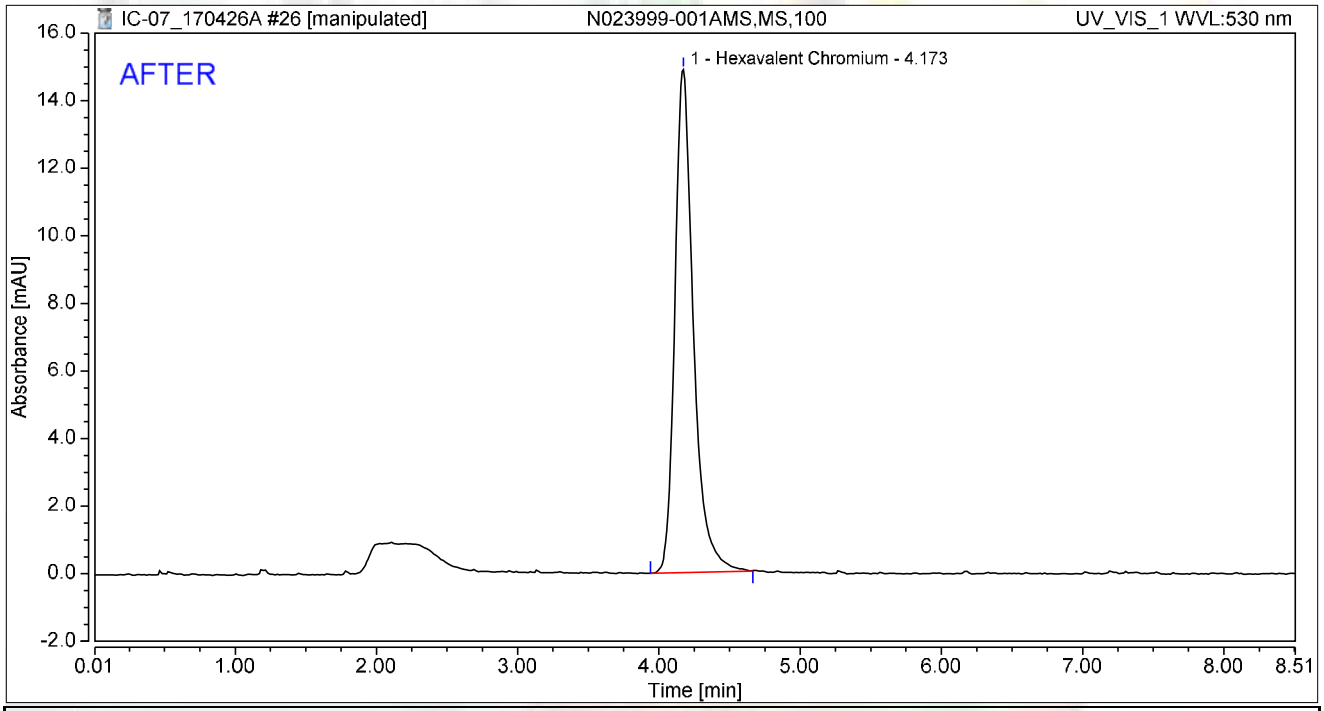
Chromatogram and Results

Injection Details

Injection Name:	**N023999-001AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.270	14.888	100.00	100.00	9.3086
Total:			**2.270**	**14.888**	**100.00**	**100.00**	

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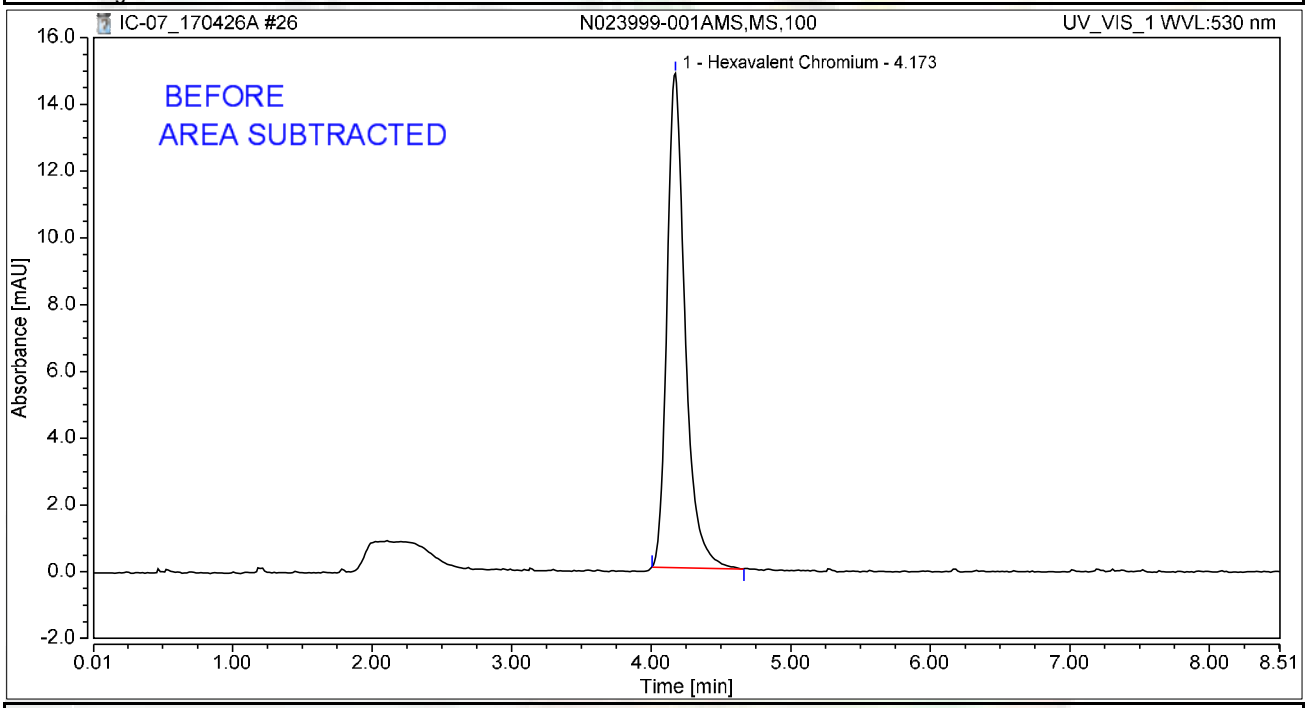
Reviewed by: 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023999-001AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.227	14.795	100.00	100.00	9.1294
Total:			**2.227**	**14.795**	**100.00**	**100.00**	

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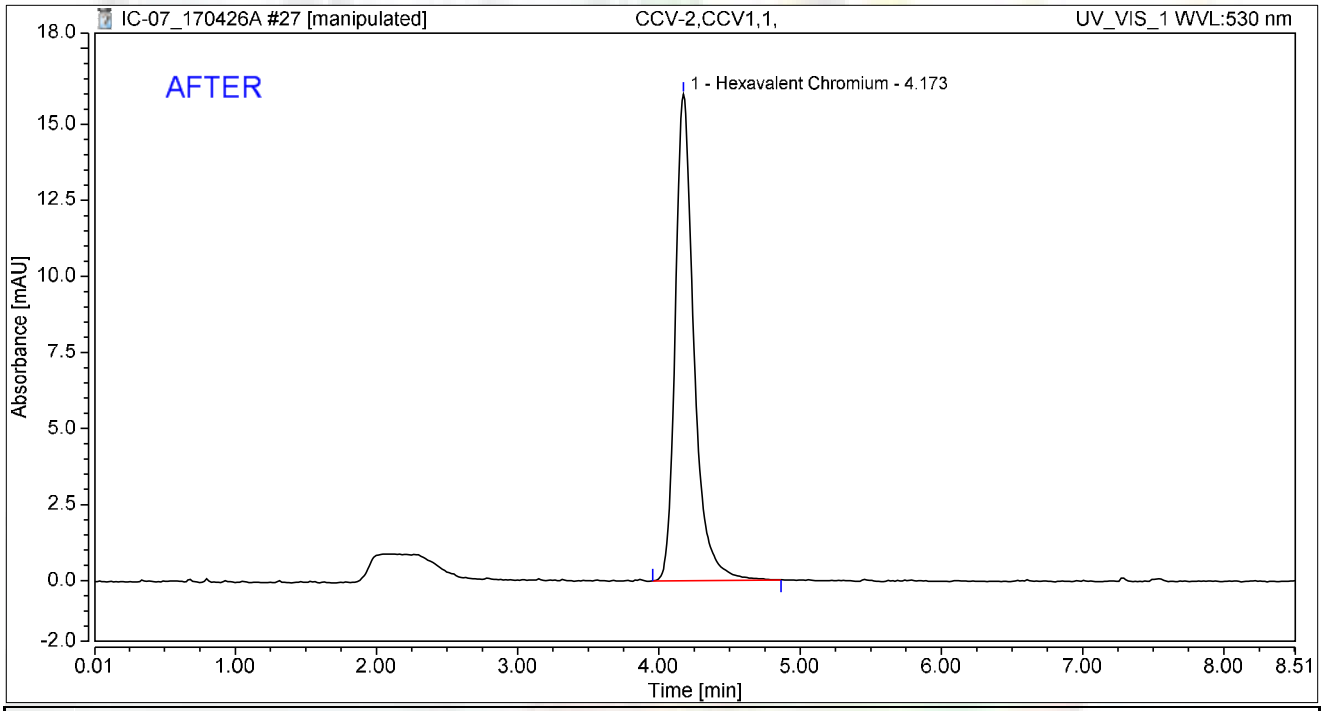
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.454	15.986	100.00	100.00	10.0614
Total:			**2.454**	**15.986**	**100.00**	**100.00**	

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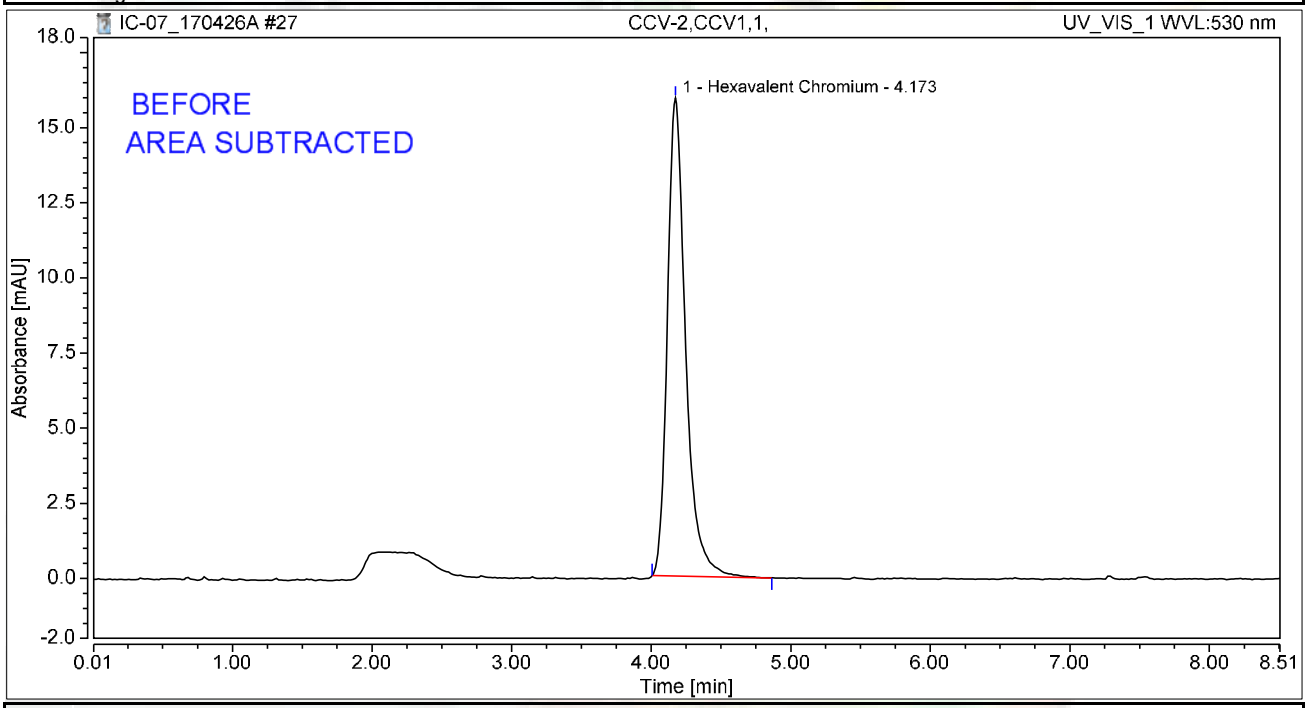
Reviewed by: [signature] 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.410	15.906	100.00	100.00	9.8808
Total:			**2.410**	**15.906**	**100.00**	**100.00**	

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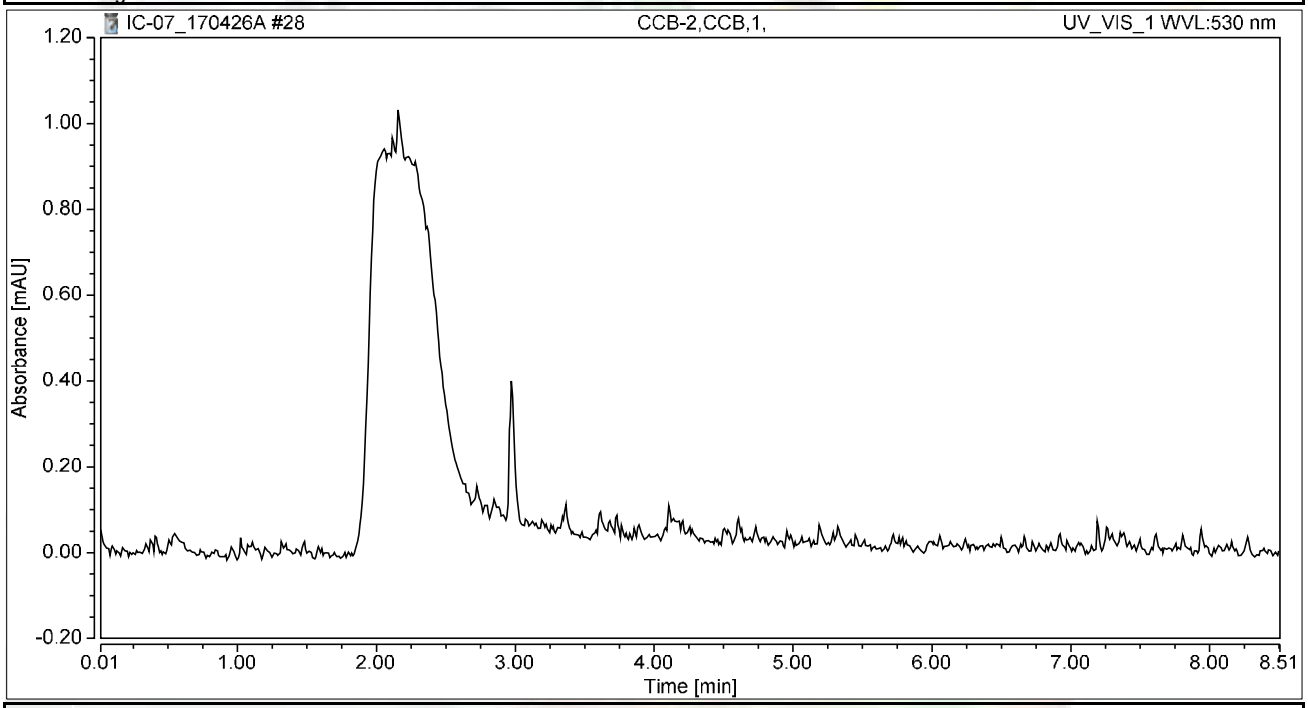
Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

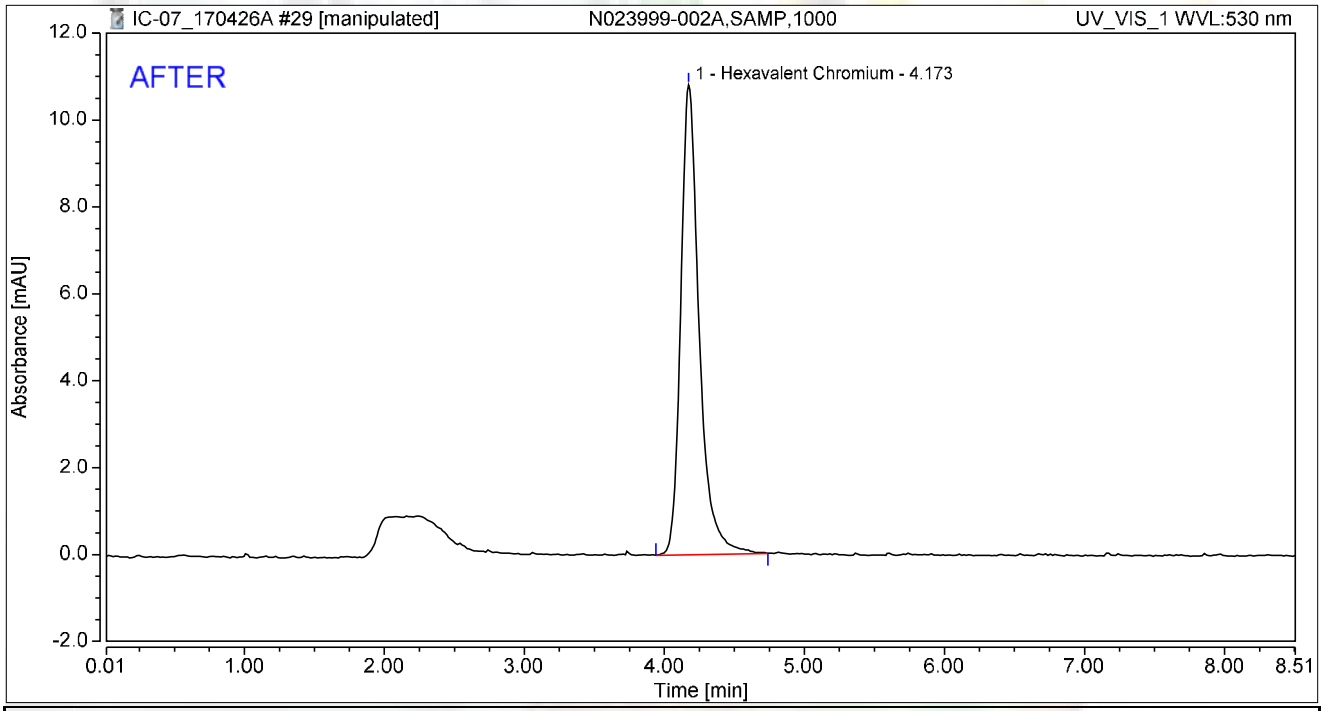
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023999-002A,SAMP,1000**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.652	10.815	100.00	100.00	6.7750
Total:			**1.652**	**10.815**	**100.00**	**100.00**	

rba 4/30/2017

Reviewed by: 5/9/2017

My first report integration

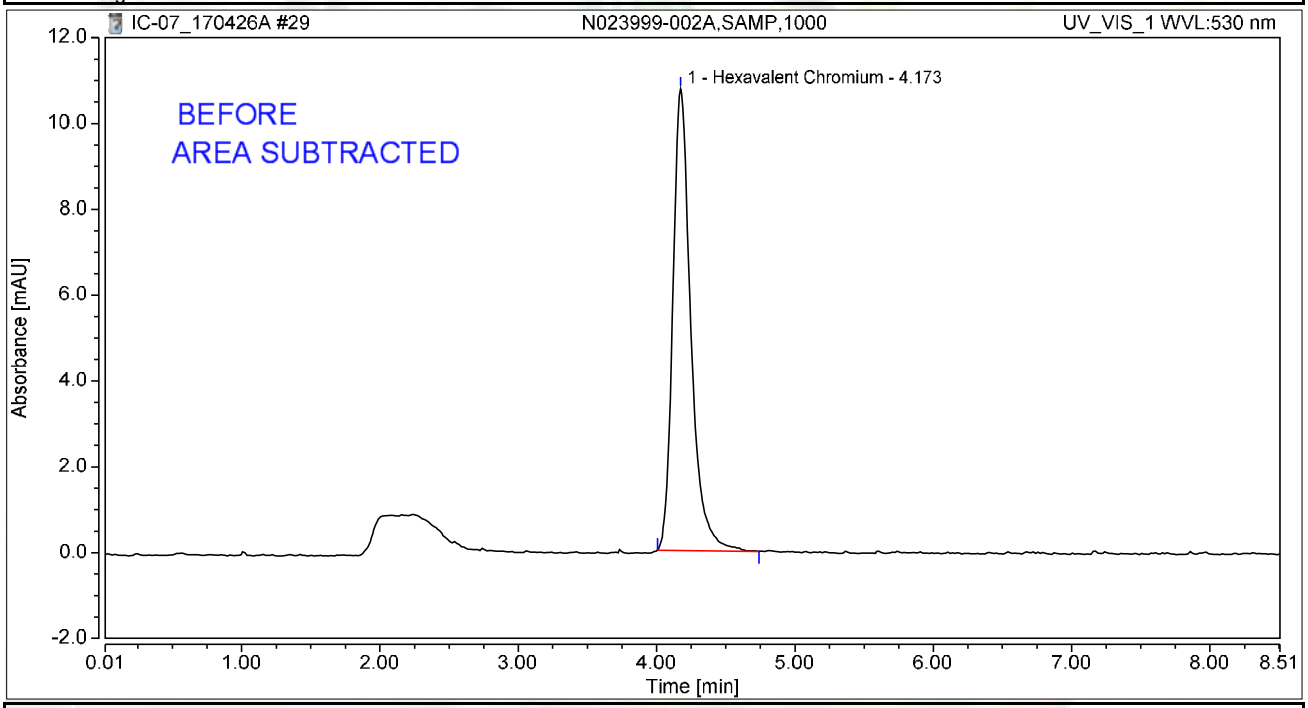
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N023999-002A,SAMP,1000**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.624	10.759	100.00	100.00	6.6589
Total:			**1.624**	**10.759**	**100.00**	**100.00**	

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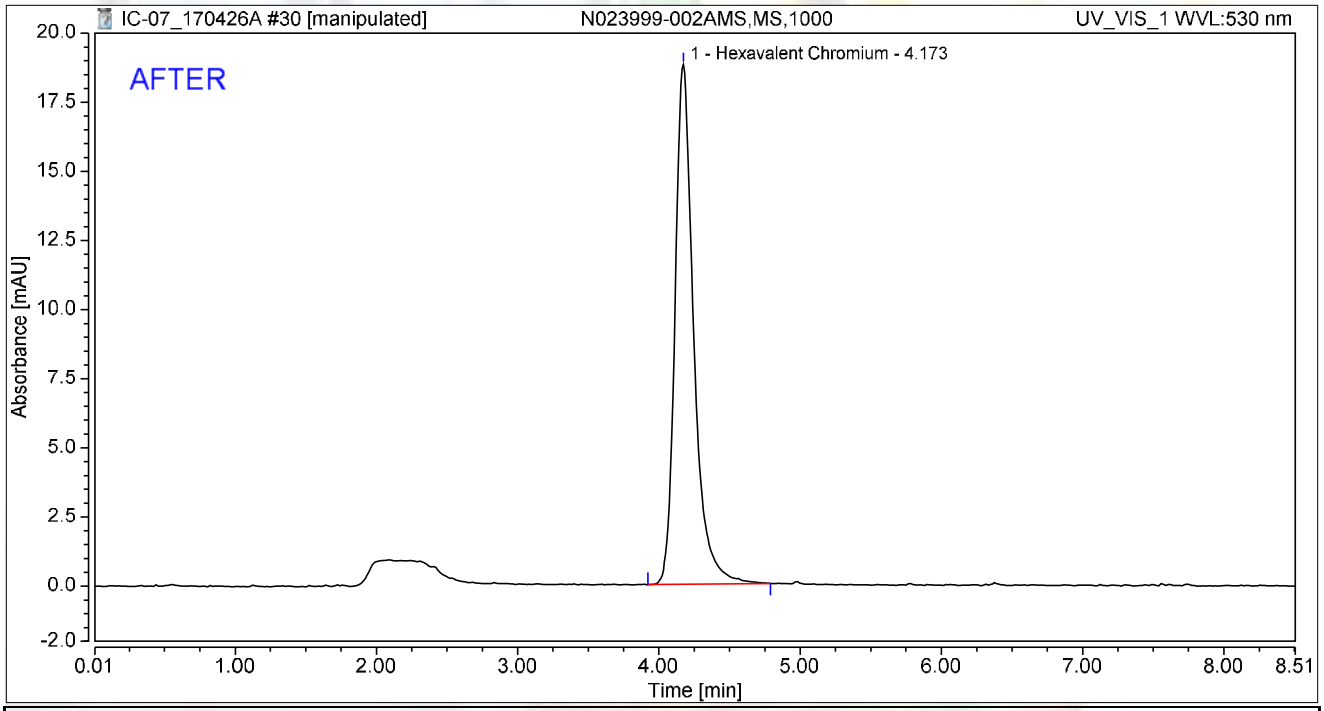
Chromatogram and Results

Injection Details

Injection Name:	**N023999-002AMS,MS,1000**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.883	18.794	100.00	100.00	11.8194
Total:			**2.883**	**18.794**	**100.00**	**100.00**	

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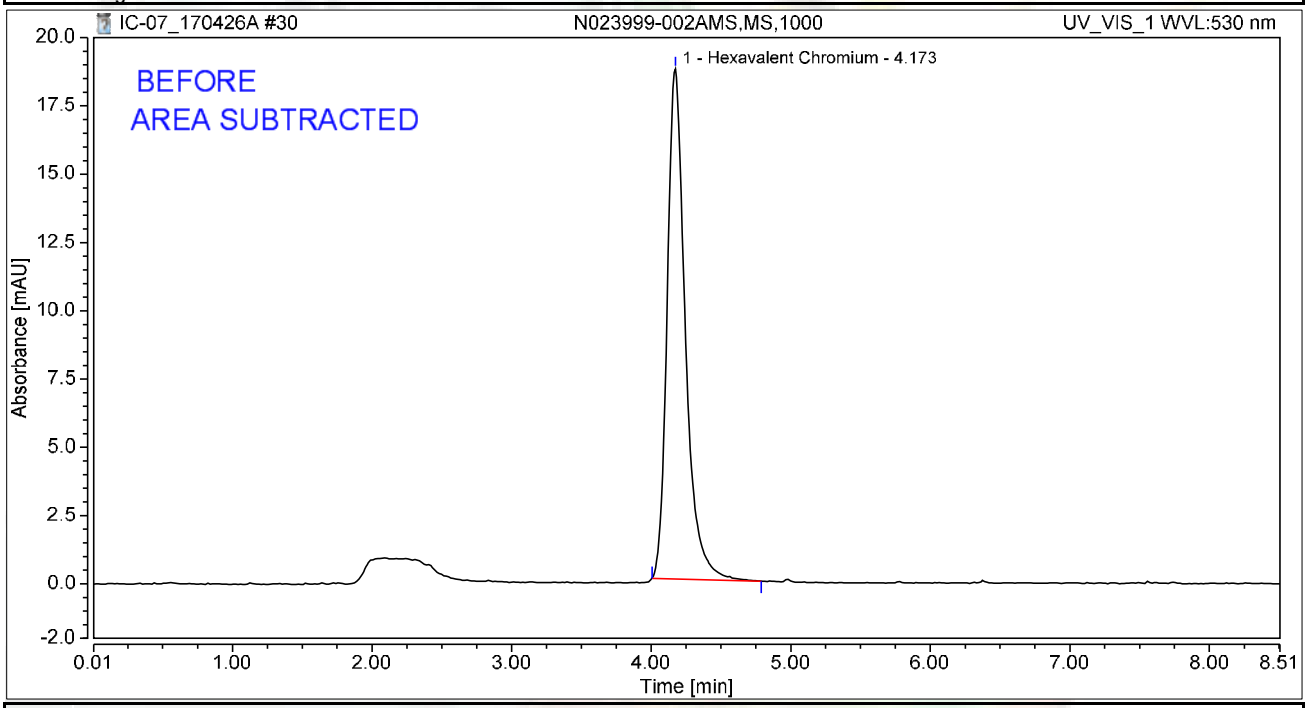
Reviewed by: Nancy 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023999-002AMS,MS,1000**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	2.822	18.678	100.00	100.00	11.5727
Total:			**2.822**	**18.678**	**100.00**	**100.00**	

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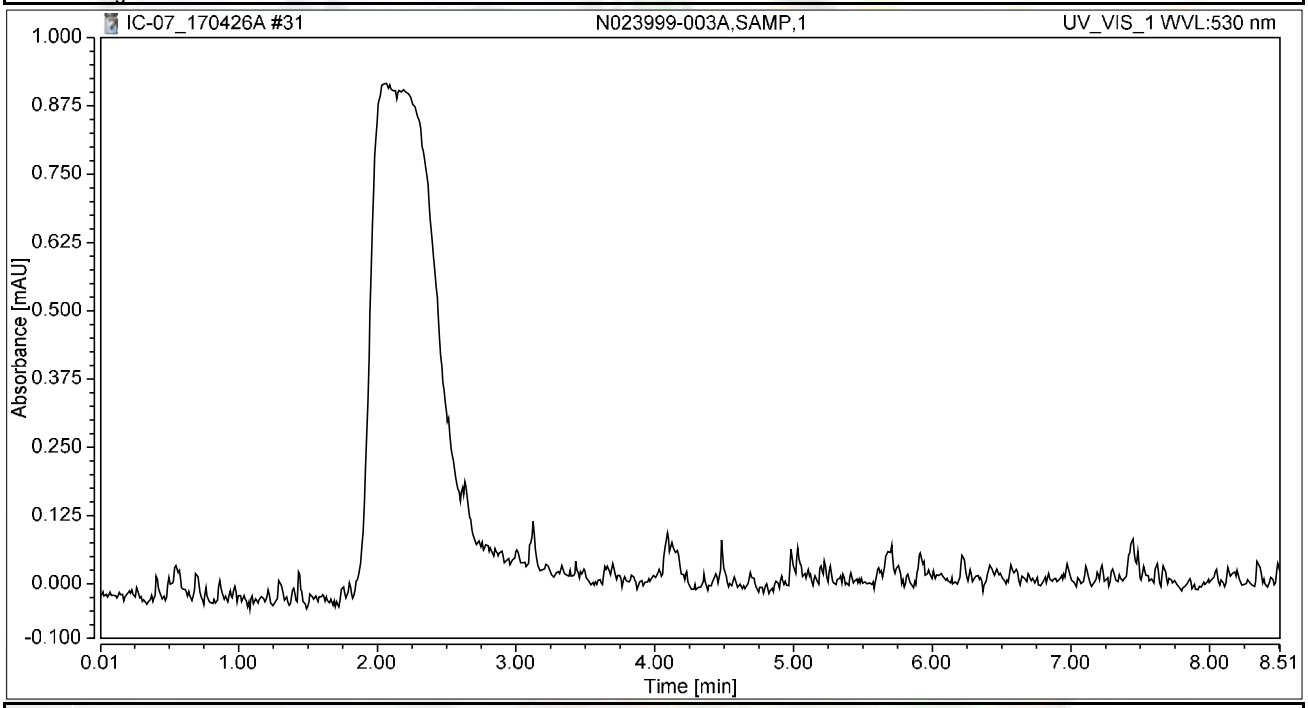
Chromatogram and Results

Injection Details

Injection Name:	**N023999-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 11:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

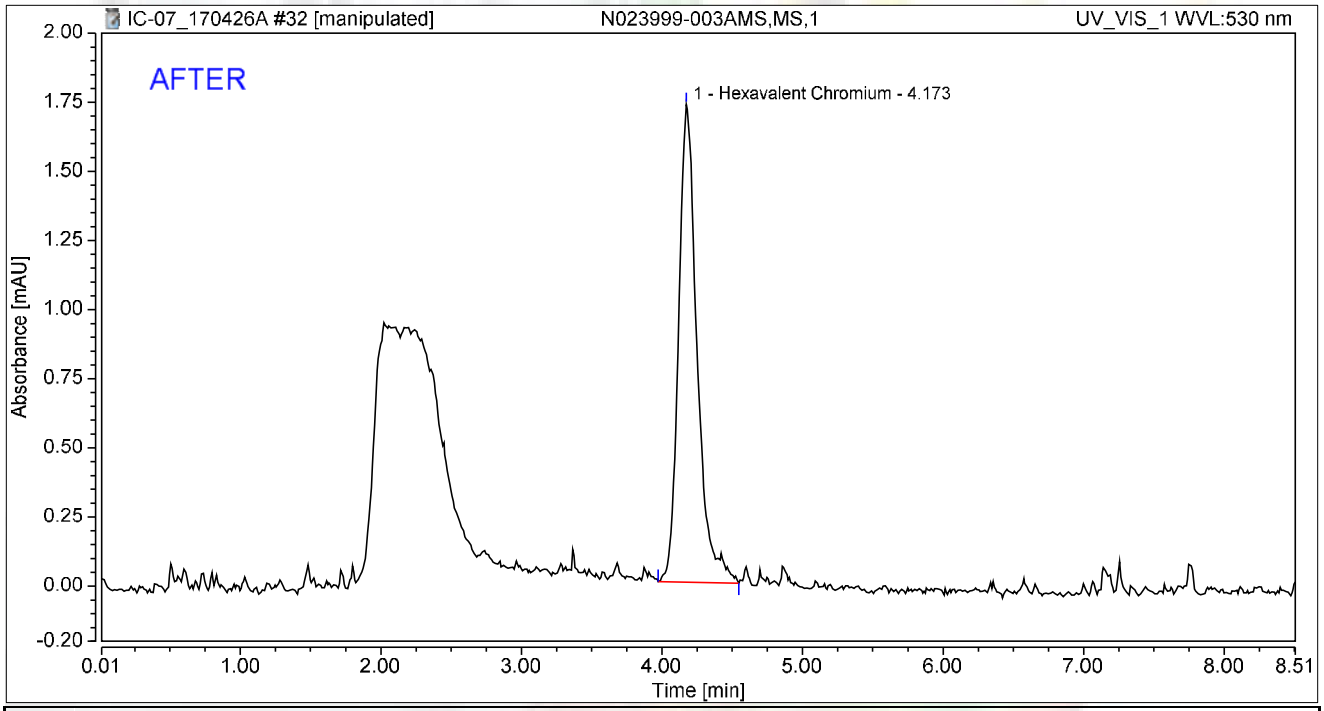
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023999-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.264	1.727	100.00	100.00	1.0830
Total:			**0.264**	**1.727**	**100.00**	**100.00**	

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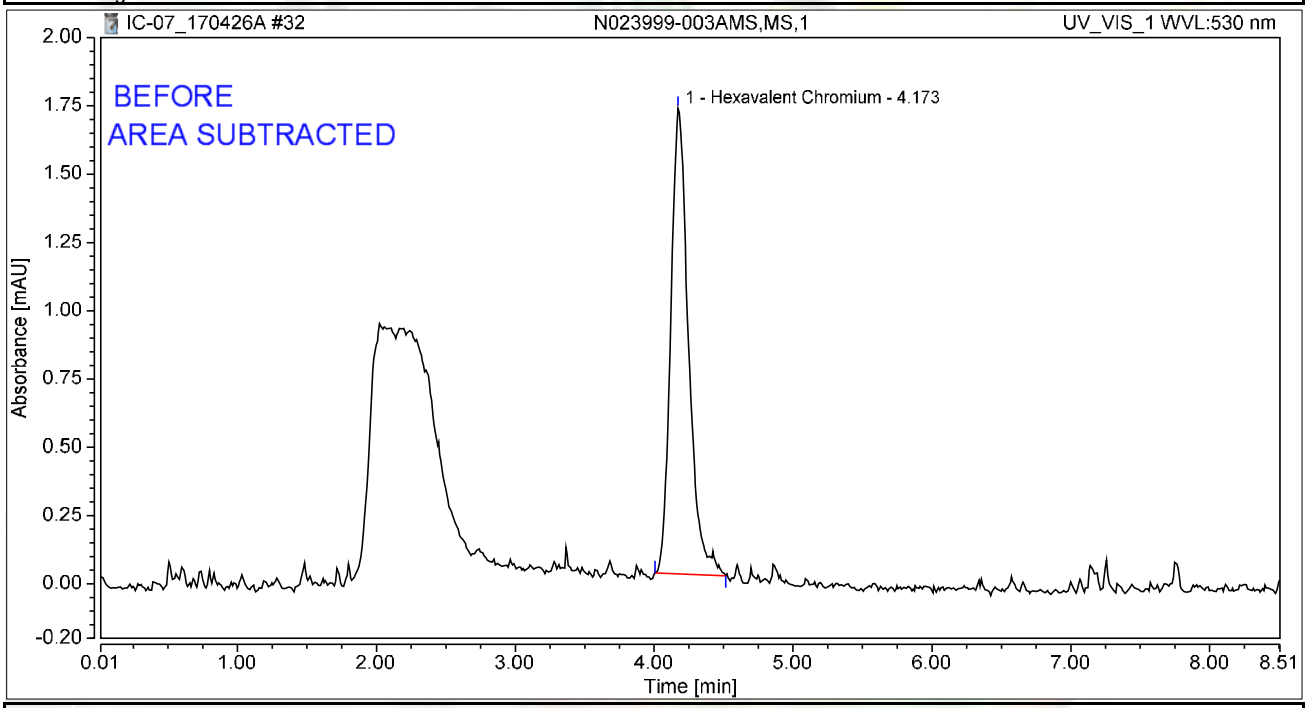
Reviewed by: Nancy 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023999-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.252	1.705	100.00	100.00	1.0352
Total:			**0.252**	**1.705**	**100.00**	**100.00**	

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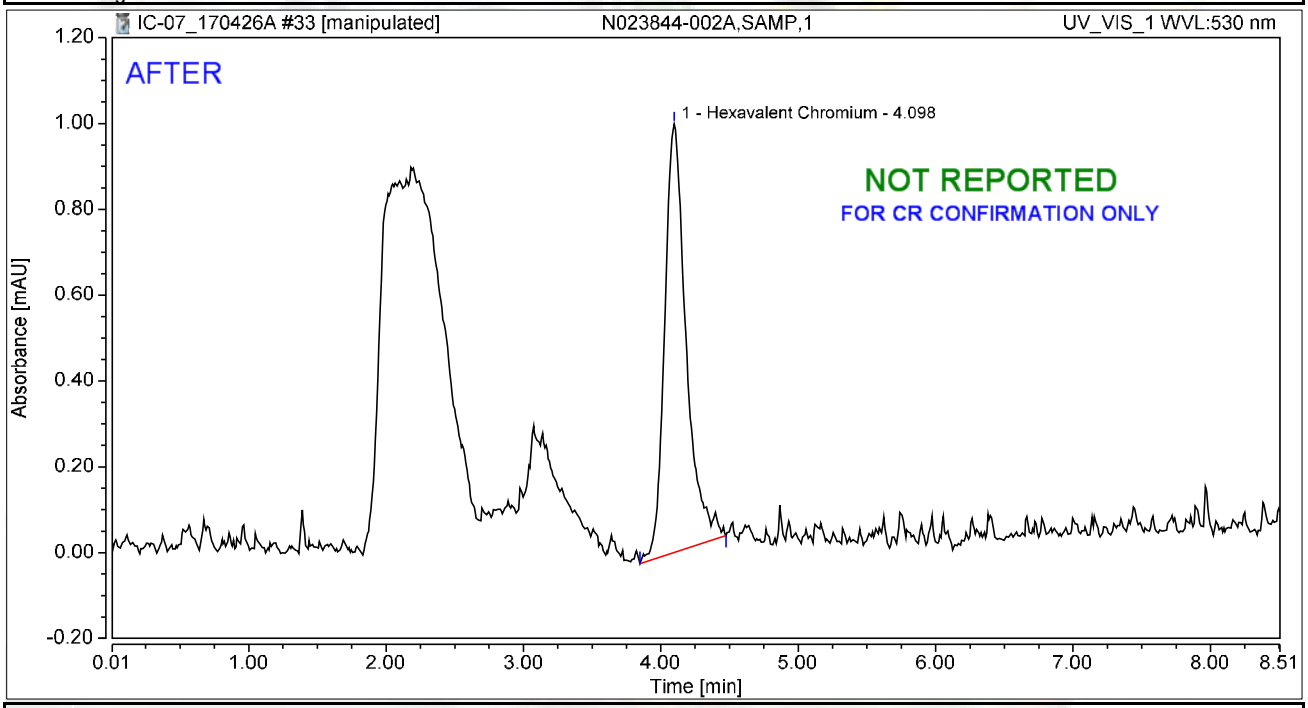
Chromatogram and Results

Injection Details

Injection Name:	**N023844-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.181	0.998	100.00	100.00	0.7401
Total:			**0.181**	**0.998**	**100.00**	**100.00**	

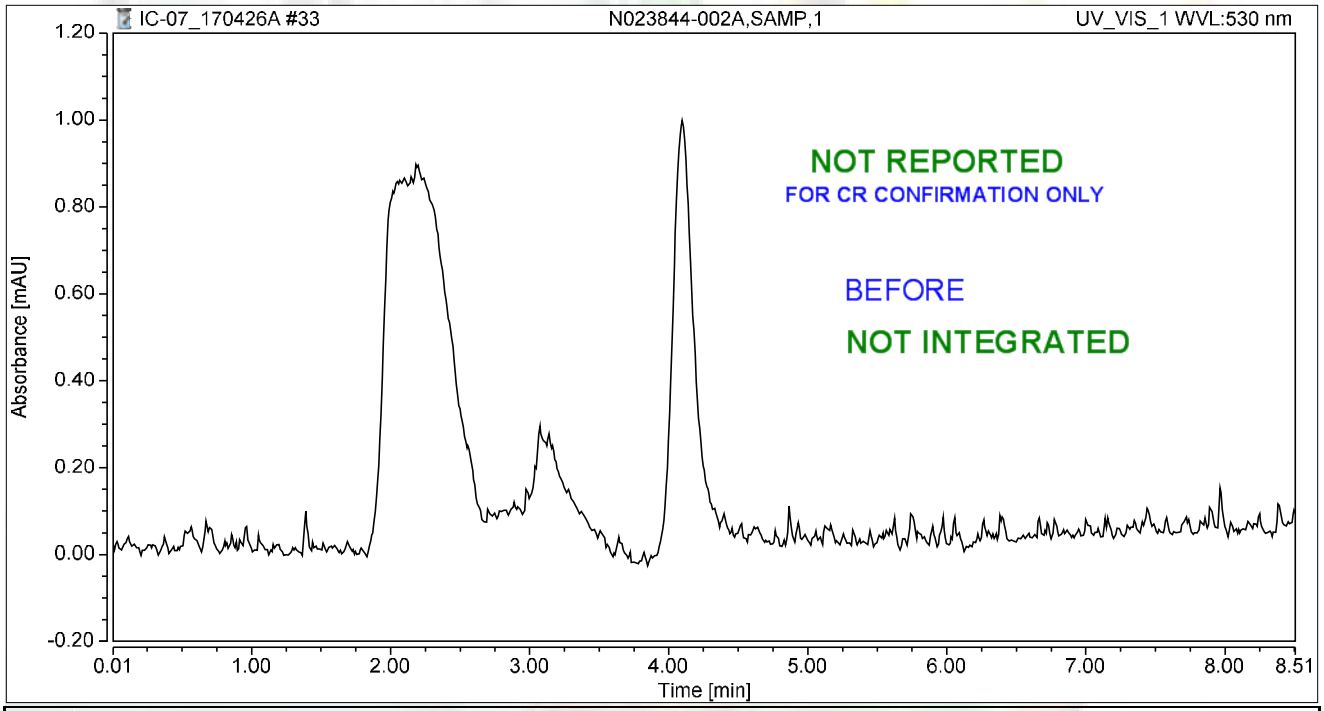
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023844-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

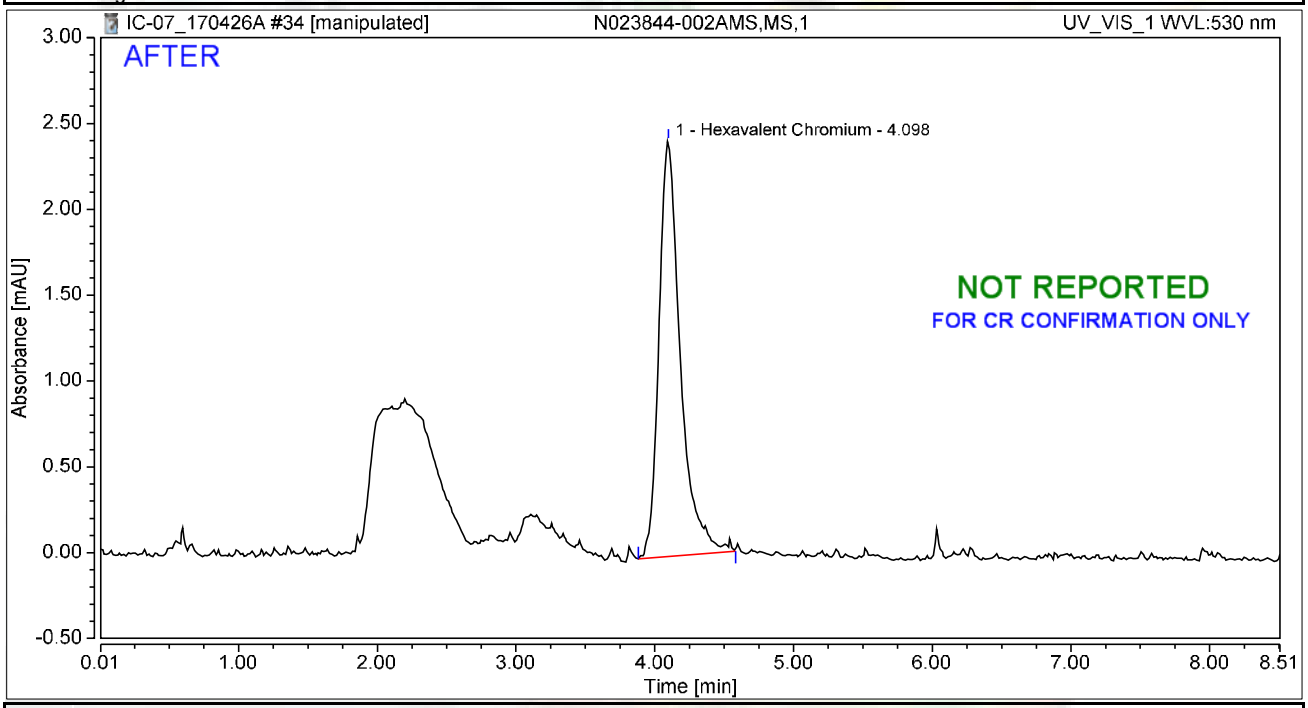
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023844-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.435	2.420	100.00	100.00	1.7816
Total:			**0.435**	**2.420**	**100.00**	**100.00**	

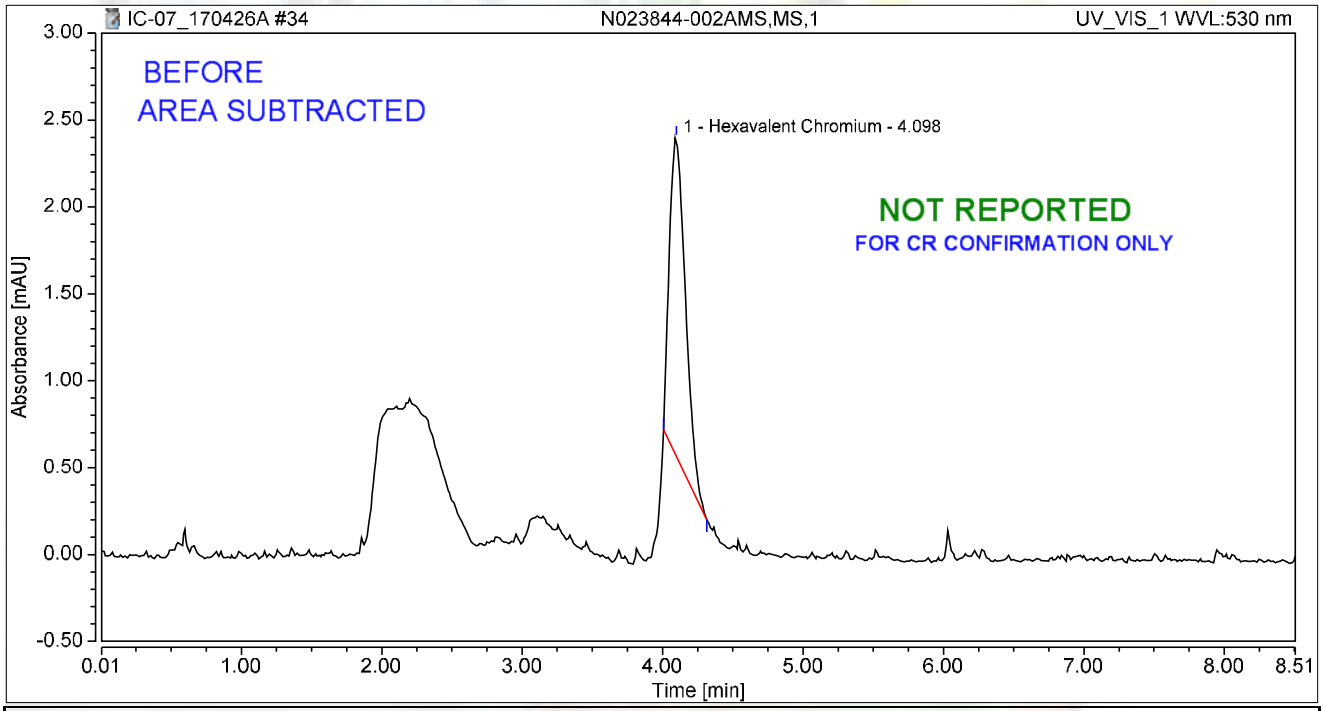
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023844-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.244	1.833	100.00	100.00	0.9984
Total:			**0.244**	**1.833**	**100.00**	**100.00**	

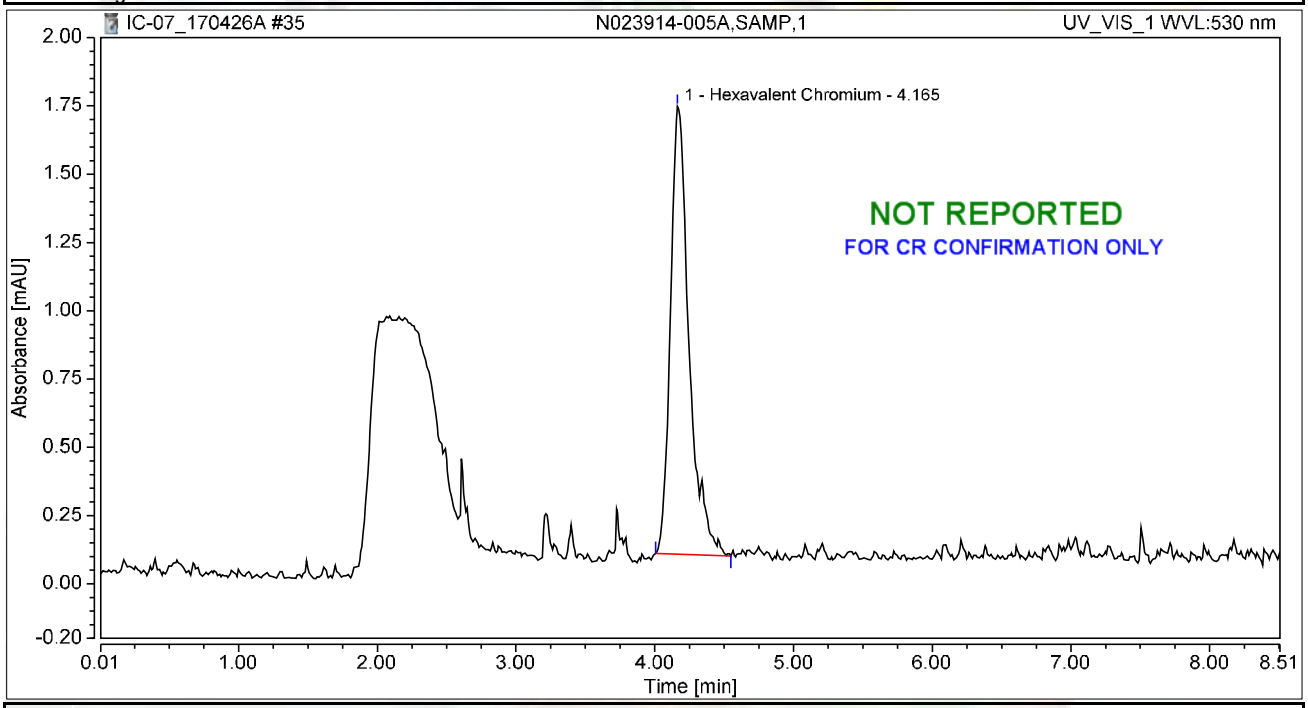
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023914-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

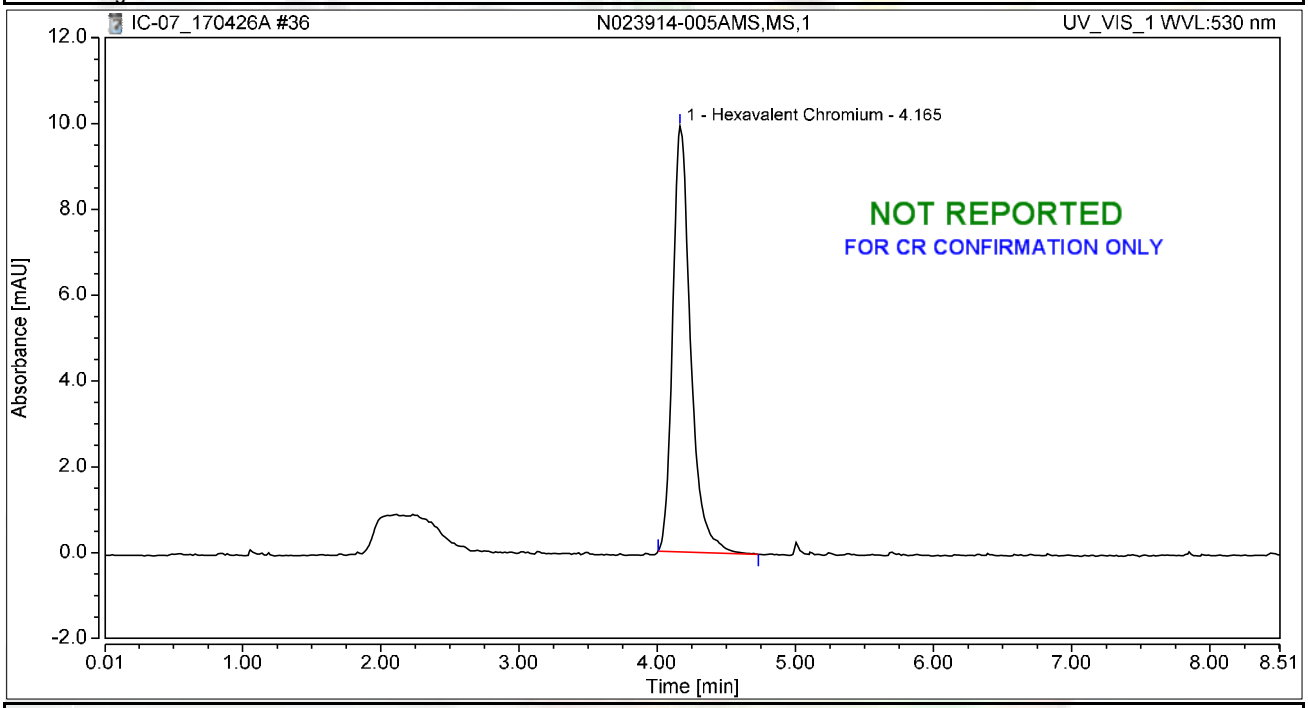
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	0.255	1.640	100.00	100.00	1.0473
Total:			**0.255**	**1.640**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N023914-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 12:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

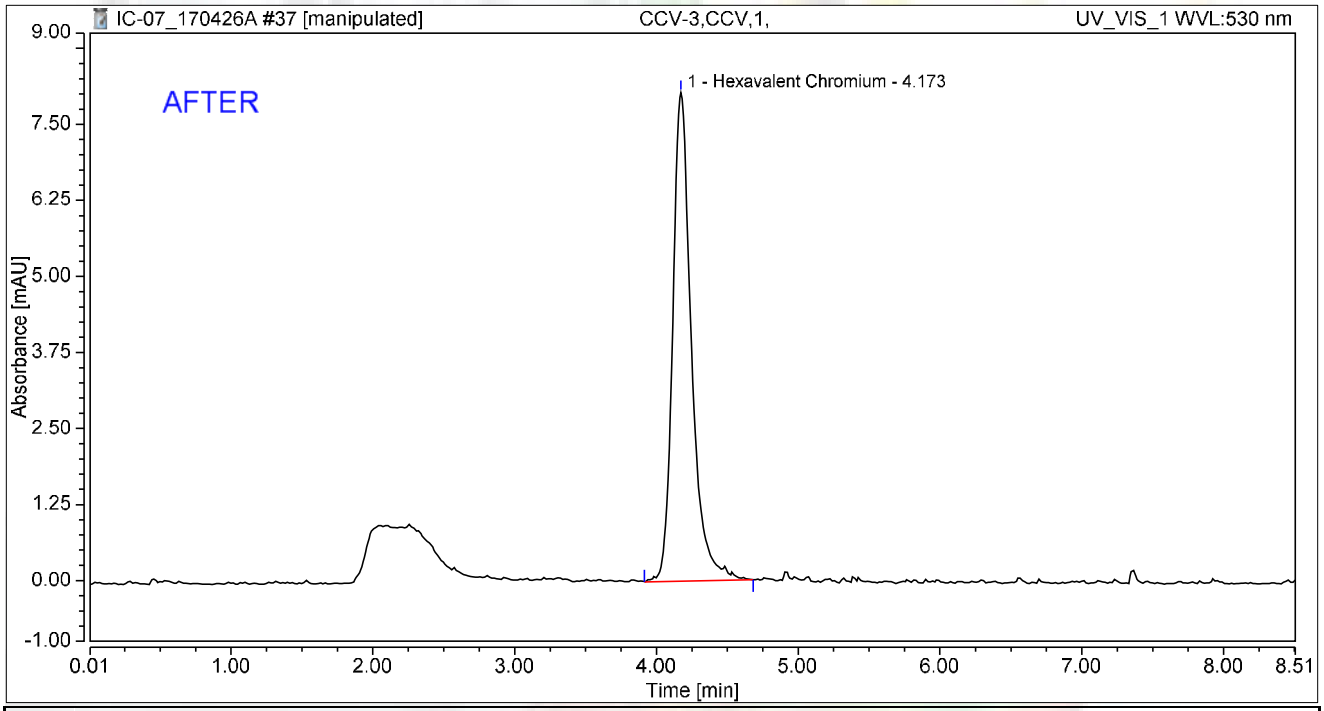
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.165	1.499	9.928	100.00	100.00	6.1463
Total:			**1.499**	**9.928**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.233	8.034	100.00	100.00	5.0573
Total:			**1.233**	**8.034**	**100.00**	**100.00**	

rba 4/30/2017

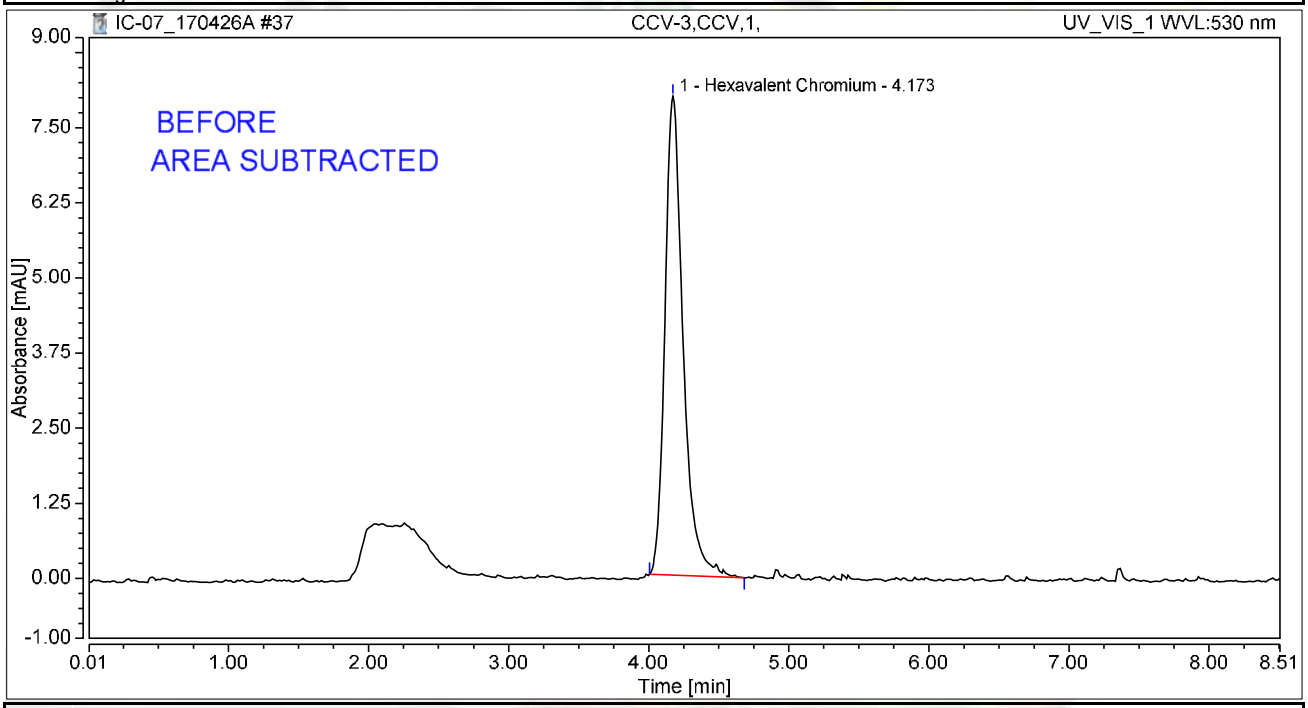
Reviewed by: Nancy 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 13:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.200	7.968	100.00	100.00	4.9206
Total:			**1.200**	**7.968**	**100.00**	**100.00**	

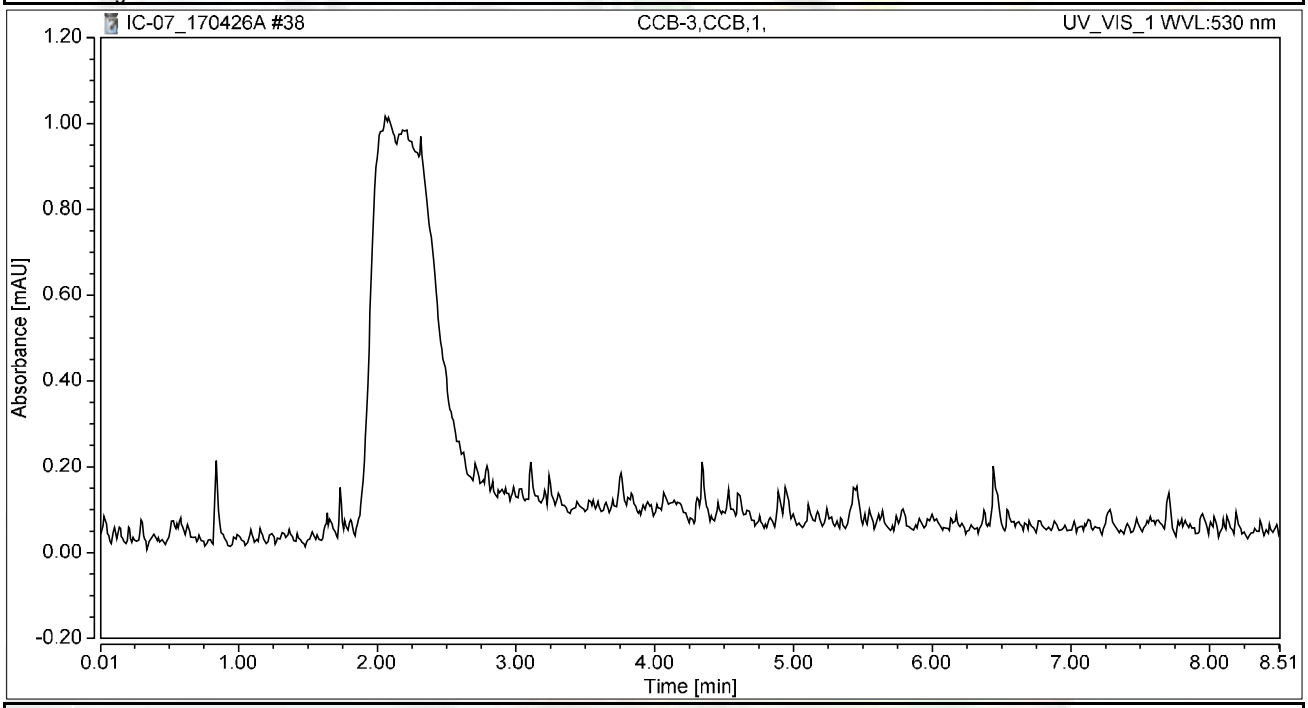
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**26/Apr/17 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

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

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R114893 **Analyst:** LSR

ASSET #: N023998 **Date Analyzed:** 4/26/2017

Method: EPA 2320

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer: Julia Ramit Date: 5/1/2017

2nd Level Reviewer: Nancy 5/9/2017 Date:

SAMPLE CALCULATION

Sample ID: **N023998-001C @ pH 7.55**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (10.90 mL)

= **0.02294 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (9.90) (0.02294 N) (1) * 1000

= 227.1060 mg**/L**

Reporting results in two significant figures,

= **230 mg/L** as CaCO3

Julia Ramit 5/1/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02294 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (9.90 mL) (0.02294) (1) * 1000

= 227.1060 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **227.1060 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **230 mg/L**

Julia Ramit 5/1/2017

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.32	50	0.00	0.050	MBLK
LCS-1	8.08	50	0.00	4.50	LCS
N023998-001C	7.55	50	0.00	9.90	SAMP
N023998-002C	7.56	50	0.00	7.05	SAMP
N023998-001CDUP	7.53	50	0.00	9.80	DUP
N023998-002CMS	7.83	50	0.00	11.60	MS
N023998-002CMSD	7.78	50	0.00	11.60	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**10.90**	ml
N H2SO4	**0.02294**	Normal
Date Analyzed:	**4/26/17**	
Time:	**1:45 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R170315B**	

Silvia Ramit 5/1/2017

Date Analyzed:	4/26/17		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	1:45 PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	10.9	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R170315B							**P > 1/2 T**
									N H2SO4	0.02294	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.32				0.02294	0.00	0.05	0.05	1	0.00	1.15	
LCS-1	50	8.08				0.02294	0.00	4.50	4.50	1	0.00	103.21	
N023998-001C	50	7.55				0.02294	0.00	9.90	9.90	1	0.00	227.06	
N023998-002C	50	7.56				0.02294	0.00	7.05	7.05	1	0.00	161.70	
N023998-001CDU	50	7.53				0.02294	0.00	9.80	9.80	1	0.00	224.77	
N023998-002CMS	50	7.83				0.02294	0.00	11.60	11.60	1	0.00	266.06	
N023998-002CMS	50	7.78				0.02294	0.00	11.60	11.60	1	0.00	266.06	

Julia Ramit 5/1/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	4/26/17
Time:	1:45 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.15	1.15	1.15		P = 0
LCS-1	0.00	0.00	103.21	103.21	103.21		P = 0
N023998-001C	0.00	0.00	227.06	227.06	227.06		P = 0
N023998-002C	0.00	0.00	161.70	161.70	161.70		P = 0
N023998-001CDUP	0.00	0.00	224.77	224.77	224.77		P = 0
N023998-002CMS	0.00	0.00	266.06	266.06	266.06		P = 0
N023998-002CMSD	0.00	0.00	266.06	266.06	266.06		P = 0

Julia Ramit 5/1/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 4/26/17
Time Extracted: 1345
Extracted By: LSK

Date Analyzed: 4/26/17
Time Analyzed: 1345
Analyzed By: LSK

Reagent Lot # / Reagent ID
Sodium Carbonate: SIW-160125B
Hydrochloric Acid: –
Sulfuric Acid: R170315B
Sodium Bicarbonate: CNV-150601A

pH meter CALIBRATION:
SLOPE: 97.4%
pH 4 – 3.99 @ 20.6°C – CNW170125B
7 – 6.96 @ 20.5°C – 170125B
10 – 10.05 @ 20.6°C – 161214A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.26	INST170426A	5 mL	0.05 N	–	–	10.80	50/50	$N_{H_2SO_4} = (265\ g/L)(5\ mL)$	= 0.023148148
	#2	1	10.28	1	1	1	–	–	11.0	1	(53) (V titrant)	= 0.022727272
												Ave: 0.022937711
1)	MBLC	50mL	5.32	–	–	–	0.02294	0	0.05	50/50		
2)	LCS		8.68	INST170426B	1 mL	0.05N		0	4.50			
3)	1023998-00K		7.55	–	–	–		0	9.90			
4)	2C		7.56	–	–	–		0	7.05			
5)	1CDUP		7.53	–	–	–		0	9.80			
6)	2CMS		7.83	INST170426B	1 mL	0.05N		0	11.60			
7)	2CMSD		7.78	1	1	1		0	11.60			
8)												
9)												
10)												
11)												
12)												
13)												
14)												
15)				$P = (V_{pH\ 8.3})(N_{H_2SO_4})(50{,}000)$								
16)						V_{SX}						
17)												
18)				$T = (V_{pH\ 4.5})(N_{H_2SO_4})(50{,}000)$								
19)						V_{SX}						
20)												
	MS											
	MSD											
	LCS											

Julia Ramit 5/1/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R114910
ASSET #: N023998

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 4/26/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer: rba Date: 4/30/2017

2nd Level Reviewer: 5/9/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N023998-001C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 4.953 * 200

= 990.6

Reporting result in two significant values,

Chloride, mg/L = 990

rba 5/5/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 10
Created: 4/25/2017 9:56:29 AM by IC-05
Last Update: 4/25/2017 1:09:21 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 9:57:11 AM
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:12:29 AM
3	Std - 0	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:27:47 AM
4	Std - 1	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:43:05 AM
5	Std - 2	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:58:23 AM
6	Std - 3	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:13:40 AM
7	Std - 4	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:28:59 AM
8	Std - 5	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:44:17 AM
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 12:14:45 PM
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 12:46:33 PM

rba 4/26/2017

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 10
Created: 4/25/2017 9:56:29 AM by IC-05
Last Update: 4/25/2017 1:09:21 PM by IC-05

No.	Name	Comment
1	BLANK,BLANK,1	BLANK
2	BLANK,BLANK,1	BLANK
3	Std - 0	iBLANK
4	Std - 1	STD-LOW
5	Std - 2	STD
6	Std - 3	STD
7	Std - 4	STD
8	Std - 5	STD-HIGH
9	ICV,ICV,1	ICV
10	ICB,ICB,1	ICB

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 27
Created: 4/26/2017 8:54:45 AM by IC-05
Last Update: 4/26/2017 10:21:30 AM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170425	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170425	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170425	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170425	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170425	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170425	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
14	N023998-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170425	Finished
15	N023998-001CDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_170425	Finished
16	N023998-001CMS,MS,200	Unknown	1000.0	Anions Default	Anions_170425	Finished
17	N023998-001CMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_170425	Finished
18	N023998-002C,SAMP,500	Unknown	1000.0	Anions Default	Anions_170425	Finished
19	N023998-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
20	N023998-001CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
21	N023998-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
24	N023998-001CMS,MS,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
25	N023998-001CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
26	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
27	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished



Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 27
Created: 4/26/2017 8:54:45 AM by IC-05
Last Update: 4/26/2017 10:21:30 AM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	4/25/2017 9:57:11 AM	BLANK
2	BLANK,BLANK,1	4/25/2017 10:12:29 AM	BLANK
3	Std - 0	4/25/2017 10:27:47 AM	iBLANK
4	Std - 1	4/25/2017 10:43:05 AM	STD-LOW
5	Std - 2	4/25/2017 10:58:23 AM	STD
6	Std - 3	4/25/2017 11:13:40 AM	STD
7	Std - 4	4/25/2017 11:28:59 AM	STD
8	Std - 5	4/25/2017 11:44:17 AM	STD-HIGH
9	BLANK,BLANK,1	4/26/2017 9:06:01 AM	BLANK
10	CCV-1,CCV,1	4/26/2017 9:27:39 AM	CCV
11	CCB-1,CCB,1	4/26/2017 9:42:57 AM	CCB
12	MB-H2O,MBLK,1	4/26/2017 9:58:15 AM	METHOD BLANK
13	LCS-H2O,LCS,1	4/26/2017 10:13:34 AM	LCS
14	N023998-001C,SAMP,200	4/26/2017 10:28:52 AM	SAMP,0.05>10mL
15	N023998-001CDUP,DUP,200	4/26/2017 10:44:10 AM	DUP,0.05>10mL
16	N023998-001CMS,MS,200	4/26/2017 10:59:28 AM	MS,0.05>10mL
17	N023998-001CMSD,MSD,200	4/26/2017 11:14:46 AM	MSD,0.05>10mL
18	N023998-002C,SAMP,500	4/26/2017 11:30:04 AM	SAMP,0.02>10mL
19	N023998-001C,SAMP,50	4/26/2017 11:45:22 AM	SAMP,0.2>10mL
20	N023998-001CDUP,DUP,50	4/26/2017 12:00:40 PM	DUP,0.2>10mL
21	N023998-002C,SAMP,50	4/26/2017 12:15:58 PM	SAMP,0.2>10mL
22	CCV-2,CCV,1	4/26/2017 12:31:16 PM	CCV
23	CCB-2,CCB,1	4/26/2017 12:46:34 PM	CCB
24	N023998-001CMS,MS,50	4/26/2017 1:01:53 PM	MS,0.2>10mL
25	N023998-001CMSD,MSD,50	4/26/2017 1:17:10 PM	MSD,0.2>10mL
26	CCV-3,CCV,1	4/26/2017 1:32:28 PM	CCV
27	CCB-3,CCB,1	4/26/2017 1:47:47 PM	CCB

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/25/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0741	0.1469	0.2965	0.7606	1.5970	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

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

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/25/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0552	0.2154	0.4386	1.1109	2.3109	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

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

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **ICV**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2630458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.188	0.50	2.000	0	109	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCV**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630460**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.921	0.50	2.000	0	96.0	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCV**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630469**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.930	0.50	2.000	0	96.5	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCV**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.920	0.50	2.000	0	96.0	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **ICV**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2630473**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.985	0.50	4.000	0	99.6	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCV**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630475**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.892	0.50	4.000	0	97.3	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCV**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.889	0.50	4.000	0	97.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCV**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.915	0.50	4.000	0	97.9	90	110				

Qualifiers:

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

Calculations are based on raw values

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

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**114910**
Client ID:	**ICB**	Batch ID:	**R114910**	TestNo:	**EPA 300.0**			Analysis Date:	**4/25/2017**	SeqNo:	**2630459**

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

Sample ID	**CCB-1**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**114910**
Client ID:	**CCB**	Batch ID:	**R114910**	TestNo:	**EPA 300.0**			Analysis Date:	**4/26/2017**	SeqNo:	**2630461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.128	0.50									

Sample ID	**CCB-2**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**114910**
Client ID:	**CCB**	Batch ID:	**R114910**	TestNo:	**EPA 300.0**			Analysis Date:	**4/26/2017**	SeqNo:	**2630470**

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

Sample ID	**CCB-3**	SampType:	**CCB**	TestCode:	**300_W_CLP**	Units:	**mg/L**	Prep Date:		RunNo:	**114910**
Client ID:	**CCB**	Batch ID:	**R114910**	TestNo:	**EPA 300.0**			Analysis Date:	**4/26/2017**	SeqNo:	**2630472**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **ICB**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2630474**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCB**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630476**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCB**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630483**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.180	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114910**
Client ID: **CCB**	Batch ID: **R114910**	TestNo: **EPA 300.0**		Analysis Date: **4/26/2017**	SeqNo: **2630487**

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

Qualifiers:

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

Calculations are based on raw values

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

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 4/26/2017

Sample Name	Retention Time		Evaluation
CCV-1	Chloride	4.007	
CCV-2	Chloride	3.990	
CCV-3	Chloride	3.994	
Average		3.997	
Applied RT Window		3.797 - 4.197	
MB-R114910_CL	Chloride	3.993	PASS
LCS-R114910_CL	Chloride	3.997	PASS
N023998-001C	Chloride	3.997	PASS
N023998-001CDUP	Chloride	3.993	PASS
N023998-001CMS	Chloride	3.997	PASS
N023998-001CMSD	Chloride	3.997	PASS
N023998-002C	Chloride	3.993	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 4/26/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	9.144	
CCV-2	Sulfate	9.114	
CCV-3	Sulfate	9.117	
	Average	9.125	
	Applied RT Window	8.925 - 9.325	
MB-R114910_SO4	Sulfate	N.A.	N.A.
LCS-R114910_SO4	Sulfate	9.124	PASS
N023998-001C	Sulfate	9.113	PASS
N023998-001CDUP	Sulfate	9.114	PASS
N023998-002C	Sulfate	9.114	PASS
N023998-001CMS	Sulfate	9.117	PASS
N023998-001CMSD	Sulfate	9.117	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 9/19/2016 , 9/20/2016
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.048	0.050	0.049	0.047	0.047	0.048	0.048	0.020	0.0011	**0.0034**	0.010	0.10
Chloride	0.217	0.214	0.214	0.214	0.215	0.216	0.214	0.025	0.0011	**0.0036**	0.010	0.50
Nitrite	0.044	0.046	0.045	0.044	0.045	0.044	0.044	0.020	0.0010	**0.0031**	0.010	0.05
Bromide	0.051	0.049	0.051	0.049	0.050	0.049	0.057	0.040	0.0029	**0.0090**	0.020	0.20
Nitrate	0.049	0.048	0.047	0.048	0.061	0.047	0.047	0.020	0.0049	**0.0154**	0.030	0.05
Phosphate	0.063	0.058	0.061	0.058	0.055	0.059	0.060	0.040	0.0025	**0.0080**	0.020	0.10
Sulfate	0.290	0.286	0.281	0.285	0.292	0.286	0.281	0.050	0.0041	**0.0129**	0.025	0.50

MDL/LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 12/5/2016
Analyst: Ria B. Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0034**	0.010	0.025	0.10	0.1029	**103**
Chloride	**0.0036**	0.010	0.120	0.50	0.5745	**115**
Nitrite	**0.0031**	0.010	0.028	0.05	0.0656	**131**
Bromide	**0.0090**	0.020	0.025	0.20	0.1962	**98**
Nitrate	**0.0154**	0.030	0.056	0.05	0.0744	**149**
Phosphate	**0.0080**	0.020	0.023	0.10	0.1004	**100**
Sulfate	**0.0129**	0.025	0.254	0.50	0.688	**138**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115019 **Analyst:** REB

ASSET #: N023998 **Date Analyzed:** 5/3/2017

Method: 4500_NO3

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

Comments:

SECOND LEVEL REVIEW:

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

1st Level Reviewer RB 05/09/17 Date: —

2nd Level Reviewer 5/9/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N023998-002D** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5946*5

= 2.973 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 3.0

RB 05/09/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

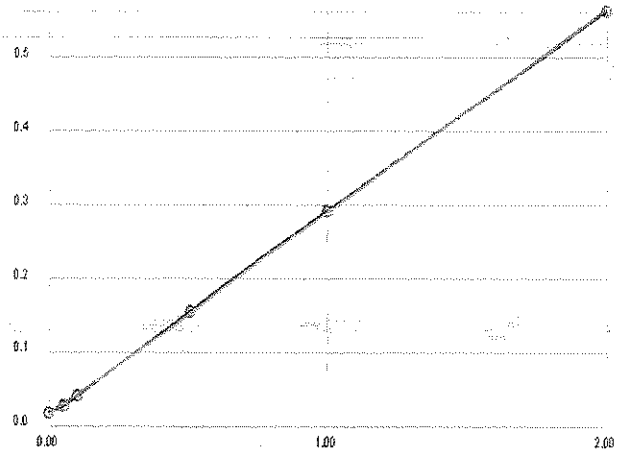
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.275x + 0.0159
Correlation	.999945

Calibrant	Energy	Set	Conc
1	0.0169	0.0000	0.0037
2	0.0274	0.0500	0.0419
3	0.0413	0.1000	0.0924
4	0.1561	0.5000	0.5099
5	0.2931	1.0000	1.0081
6	0.5642	2.0000	1.9940



Notes:

2% CuSO4- R170502D
R1 Buffer- R170502E
R2 Coloring reagent- R170502F

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 05/09/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **ICV**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **CCV**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **CCV**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.491	0.050	0.5000	0	98.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **CCV**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635139**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.5	90	110				

Qualifiers:

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

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023998
Project: PG&E Topock - PMP, RC000753.801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **ICB**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635107**

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

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **CCB**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635118**

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

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **CCB**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635130**

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

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **CCB**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635140**

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

Qualifiers:

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

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-03-2017 12:11
Time end: 05-03-2017 15:06

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	14:25:07	0.0284		0.0237
2	<BLANK>	14:26:00	0.0197		0.0213
3	<CAL1>	14:27:01	0.0037	[0]	0.0169
4	<CAL2>	14:27:57	0.0419	[0.05]	0.0274
5	<CAL3>	14:28:52	0.0924	[0.1]	0.0413
6	<CAL4>	14:29:52	0.5099	[0.5]	0.1561
7	<CAL5>	14:30:47	1.0081	[1]	0.2931
8	<CAL6>	14:31:43	1.9940	[2]	0.5642
9	,BLANK,BLANK,1,	14:32:44	0.0335		0.0251
10	,ICV,ICV,1,	14:33:38	0.5044		0.1546
11	,ICB,ICB,1,	14:34:34	0.0044		0.0171
12	,MB-H2O,MBLK,1,	14:35:35	0.0193		0.0212
13	,LCS-H2O,LCS,1,	14:36:29	0.4935		0.1516
14	,N023998-001D,SAMP,1,	14:37:31	0.0193		0.0212
15	,N023998-001DDUP,DUP,1,	14:38:26	0.0106		0.0188
16	,N023998-001DMS,MS,1,	14:39:22	0.4986		0.1530
17	,N023998-001DMSD,MSD,1,	14:40:22	0.5423		0.1650
18	,N023998-002D,SAMP,5,	14:41:18	0.5946		0.1794
19	,N023999-001C,SAMP,20,	14:42:13	1.1289		0.3263
20	,N023999-002C,SAMP,20,	14:43:13	1.1601		0.3349
21	,BLANK,BLANK,1,	14:44:09	0.0219		0.0219
22	,CCV-1,CCV,1,	14:45:04	0.5059		0.1550
23	,CCB-1,CCB,1,	14:46:06	0.0211		0.0217
24	,N024018-001C,SAMP,1,	14:47:00	1.2783		0.3674
25	,N024018-003C,SAMP,1,	14:48:01	0.0371		0.0261
26	,N024018-004C,SAMP,1,	14:48:57	0.0011		0.0162

RB 05/09/17

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N024018-005C,SAMP,1,	14:49:58	0.0011		0.0162
28	,N024018-006C,SAMP,1,	14:50:40	-0.0054		0.0144
29	,N024018-007C,SAMP,1,	14:51:23	1.3405		0.3845
30	,N024018-008C,SAMP,10,	14:52:11	0.1590		0.0596
31	,N024018-009C,SAMP,1,	14:52:55	1.2154		0.3501
NR 32	,N024018-010C,SAMP,5,	14:53:43	2.0755		0.5866
33	,BLANK,BLANK,1,	14:54:26	0.0106		0.0188
34	,CCV-2,CCV,1,	14:55:15	0.4906		0.1508
35	,CCB-2,CCB,1,	14:55:57	-0.0032		0.0150
36	,N024018-014C,SAMP,20,	14:56:41	1.1703		0.3377
37	,N024018-015C,SAMP,10,	14:57:29	0.9339		0.2727
38	,N024019-001C,SAMP,1,	14:58:12	0.0171		0.0206
39	,N024019-002C,SAMP,1,	14:58:54	0.0528		0.0304
40	,N024019-003C,SAMP,1,	14:59:43	0.0044		0.0171
41	,N024019-007C,SAMP,1,	15:00:25	0.0513		0.0300
42	,N024019-008C,SAMP,5,	15:01:09	0.2528		0.0854
43	,BLANK,BLANK,1,	15:01:58	-0.0120		0.0126
44	,CCV-3,CCV,1,	15:02:40	0.4775		0.1472
45	,CCV-3,CCV,1, not used	15:03:23	0.4797		0.1478
46	,CCB-3,CCB,1,	15:04:11	-0.0036		0.0149

RLB 05/09/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/03/17
Time Analyzed: 12:11 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170502E
Color reagent: R170502F
2% Copper Sulfate: R170502D
Ammonium Hydroxide: CINV-170424A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N023998-001D		7.52						
2)	N023998-002D		8.68						
3)	N023999-001C		8.18						
4)	N023999-002C		8.65						
5)	N024018-001C		7.87						
6)	N024018-003C		7.03						
7)	N024018-004C		6.85						
8)	N024018-005C		7.21						
9)	N024018-006C		8.51						
10)	N024018-007C		7.72						
11)	N024018-008C		7.95						
12)	N024018-009C		8.27						
13)	N024018-010C		8.79						
14)	N024018-014C		8.25						
15)	N024018-015C		7.50						
16)	N024019-001C		8.13						
17)	N024019-002C		7.96						
18)	N024019-003C		8.24						
19)	N024019-007C		8.14						
20)	N024019-008C		8.33						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/09/17

May 09, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N023999

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 25, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Ribucao for

Puri Romualdo
Laboratory Director

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

SAMPLE RECEIVING/GENERAL COMMENTS

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for sample N023999-002 due to associated internal standard not meeting method criteria possibly due to matrix interference. Sample was analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N023999-001B-MS and N023999-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
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NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *09-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N023999
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N023999-001A	MW-66-165-Q217	Groundwater	4/25/2017 2:01:00 PM	4/25/2017	5/9/2017
N023999-001B	MW-66-165-Q217	Groundwater	4/25/2017 2:01:00 PM	4/25/2017	5/9/2017
N023999-001C	MW-66-165-Q217	Groundwater	4/25/2017 2:01:00 PM	4/25/2017	5/9/2017
N023999-002A	MW-66-230-Q217	Groundwater	4/25/2017 2:24:00 PM	4/25/2017	5/9/2017
N023999-002B	MW-66-230-Q217	Groundwater	4/25/2017 2:24:00 PM	4/25/2017	5/9/2017
N023999-002C	MW-66-230-Q217	Groundwater	4/25/2017 2:24:00 PM	4/25/2017	5/9/2017
N023999-003A	MW-701-Q217	Groundwater	4/25/2017 3:30:00 PM	4/25/2017	5/9/2017

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023999
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N023999-001

Client Sample ID: MW-66-165-Q217
Collection Date: 4/25/2017 2:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170426A**	QC Batch: **R114888**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	430	6.6	20		µg/L	100	4/26/2017 11:01 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	460	0.096	5.0		µg/L	5	5/4/2017 11:31 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023999
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N023999-002

Client Sample ID: MW-66-230-Q217
Collection Date: 4/25/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170426A**	QC Batch: **R114888**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	6800	66	200		µg/L	1000	4/26/2017 11:39 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	7100	0.97	50		µg/L	50	5/4/2017 12:32 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-701-Q217
Lab Order:	N023999	**Collection Date:**	4/25/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023999-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170426A**	QC Batch: **R114888**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/26/2017 11:58 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023999
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R114888	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	PBW	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629738		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R114888	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	LCSW	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629739		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.053	0.20	5.000	0	101	90	110					

Sample ID	N023998-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629741		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		0.499	0.20						0.5323	6.44	20		

Sample ID	N023998-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629742		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.527	0.20	1.000	0.5323	99.4	90	110					

Sample ID	N023998-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114888		
Client ID:	ZZZZZZ	Batch ID:	R114888	TestNo:	EPA 218.6			Analysis Date:	4/26/2017	SeqNo:	2629744		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1063.230	20	500.0	557.9	101	90	110					

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023999
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N023998-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114888**
Client ID: **ZZZZZZ** Batch ID: **R114888** TestNo: **EPA 218.6** Analysis Date: **4/26/2017** SeqNo: **2629745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1054.460	20	500.0	557.9	99.3	90	110	1063	0.828	20	

Sample ID **N023999-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114888**
Client ID: **ZZZZZZ** Batch ID: **R114888** TestNo: **EPA 218.6** Analysis Date: **4/26/2017** SeqNo: **2629747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	930.860	20	500.0	434.6	99.2	90	110				

Sample ID **N023999-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114888**
Client ID: **ZZZZZZ** Batch ID: **R114888** TestNo: **EPA 218.6** Analysis Date: **4/26/2017** SeqNo: **2629751**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11819.400	200	5000	6775	101	90	110				

Sample ID **N023999-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114888**
Client ID: **ZZZZZZ** Batch ID: **R114888** TestNo: **EPA 218.6** Analysis Date: **4/26/2017** SeqNo: **2629753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.083	0.20	1.000	0	108	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023999
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-62100**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115047**
Client ID: **PBW**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.042	1.0									

Sample ID **LCS-62100**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115047**
Client ID: **LCSW**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.075	1.0	10.00	0	101	85	115				

Sample ID **N023999-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115047**
Client ID: **ZZZZZZ**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	462.139	5.0	10.00	456.3	58.2	75	125				S

Sample ID **N023999-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115047**
Client ID: **ZZZZZZ**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	452.989	5.0	10.00	456.3	-33.3	75	125	462.1	2.00	20	S

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-165-Q217
Lab Order:	N023999	**Collection Date:**	4/25/2017 2:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023999-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	23	0.44	1.0		mg/L	20	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66-230-Q217
Lab Order:	N023999	**Collection Date:**	4/25/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N023999-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	23	0.44	1.0		mg/L	20	5/3/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023999
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115019	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	PBW	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635108

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

Sample ID	LCS-R115019	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	LCSW	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635109

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.7	85	115				

Sample ID	N023998-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	ZZZZZZ	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635111

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

Sample ID	N023998-001DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	ZZZZZZ	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.7	75	125				

Sample ID	N023998-001DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115019
Client ID:	ZZZZZZ	Batch ID:	R115019	TestNo:	SM4500-NO3			Analysis Date:	5/3/2017	SeqNo:	2635113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.542	0.050	0.5000	0	108	75	125	0.4986	8.40	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023999
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N023999-001

Client Sample ID: MW-66-165-Q217
Collection Date: 4/25/2017 2:01:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.0	0.025	0.10		µg/L	1	5/4/2017 11:25 AM
Manganese	11	0.056	0.50		µg/L	1	5/4/2017 11:25 AM
Molybdenum	6.4	0.039	0.50		µg/L	1	5/4/2017 11:25 AM
Selenium	24	0.028	0.50		µg/L	1	5/4/2017 11:25 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N023999
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N023999-002

Client Sample ID: MW-66-230-Q217
Collection Date: 4/25/2017 2:24:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504C**	QC Batch: **62100**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	5.4	0.12	0.50		µg/L	5	5/4/2017 09:29 PM
Manganese	4.5	0.056	0.50		µg/L	1	5/4/2017 12:27 PM
Molybdenum	83	0.19	2.5		µg/L	5	5/4/2017 09:29 PM
Selenium	18	0.14	2.5		µg/L	5	5/4/2017 09:29 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023999
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62100**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **PBW**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.092	0.50									
Selenium	0.061	0.50									

Sample ID **LCS-62100**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **LCSW**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.424	0.10	10.00	0	94.2	85	115				
Manganese	95.657	0.50	100.0	0	95.7	85	115				
Molybdenum	8.955	0.50	10.00	0	89.5	85	115				
Selenium	10.120	0.50	10.00	0	101	85	115				

Sample ID **N023999-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.693	0.10	10.00	1.019	96.7	75	125				
Manganese	97.388	0.50	100.0	11.02	86.4	75	125				
Molybdenum	18.162	0.50	10.00	6.358	118	75	125				
Selenium	32.321	0.50	10.00	23.67	86.5	75	125				

Sample ID **N023999-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.962	0.10	10.00	1.019	99.4	75	125	10.69	2.48	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N023999
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N023999-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115048
Client ID:	ZZZZZZ	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.880	0.50	100.0	11.02	85.9	75	125	97.39	0.523	20	
Molybdenum	18.156	0.50	10.00	6.358	118	75	125	18.16	0.0350	20	
Selenium	32.238	0.50	10.00	23.67	85.7	75	125	32.32	0.257	20	

Qualifiers:

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

CHAIN OF CUSTODY RECORD

Contact us

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ASSET Laboratories

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

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

Cooler Received/Opened On:	4/25/2017	Workorder:	N023999
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

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

Sample Receipt Checklist

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

Comments:

Checklist Completed By: YR 5/2/2017

Reviewed By: MBC 5/2/2017

ASSET Laboratories

WORK ORDER Summary

25-Apr-17

WorkOrder: N023999

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/25/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N023999-001A	MW-66-165-Q217	4/25/2017 2:01:00 PM	5/9/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023999-001B			5/9/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023999-001C			5/9/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023999-002A	MW-66-230-Q217	4/25/2017 2:24:00 PM	5/9/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023999-002B			5/9/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/9/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/9/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N023999-002C			5/9/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N023999-003A	MW-701-Q217	4/25/2017 3:30:00 PM	5/9/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N023999-004A	FOLDER	5/9/2017	5/9/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/9/2017		Folder	Folder	☐	☐	☐	LAB

May 10, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N024018

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 26, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Ribucas for

Puri Romualdo
Laboratory Director

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

SAMPLE RECEIVING/GENERAL COMMENTS

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N024018-002, N024018-007, N024018-008 and N024018-009 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.2 ug/L) and hexavalent chromium (0 ug/L) for sample N024018-005 (MW-28-090-Q217) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.2 ug/L) and hexavalent chromium (0 ug/L) for sample N024018-005 (MW-28-090-Q217) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 0.98 and 0.89 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Dilution was necessary on some analytes for samples N024018-001, N024018-005, N024018-007, N024018-008, N024018-009, N024018-010 and N024018-015 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

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Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N024018-001B-MS and N024018-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Selenium on QC sample N024018-001B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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ASSET Laboratories

Date: *10-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N024018
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024018-001A	MW-46-175-Q217	Groundwater	4/26/2017 12:05:00 PM	4/26/2017	5/10/2017
N024018-001B	MW-46-175-Q217	Groundwater	4/26/2017 12:05:00 PM	4/26/2017	5/10/2017
N024018-001C	MW-46-175-Q217	Groundwater	4/26/2017 12:05:00 PM	4/26/2017	5/10/2017
N024018-002A	MW-46-205-Q217	Groundwater	4/26/2017 12:08:00 PM	4/26/2017	5/10/2017
N024018-002B	MW-46-205-Q217	Groundwater	4/26/2017 12:08:00 PM	4/26/2017	5/10/2017
N024018-003A	MW-28-025-Q217	Groundwater	4/26/2017 11:00:00 AM	4/26/2017	5/10/2017
N024018-003B	MW-28-025-Q217	Groundwater	4/26/2017 11:00:00 AM	4/26/2017	5/10/2017
N024018-003C	MW-28-025-Q217	Groundwater	4/26/2017 11:00:00 AM	4/26/2017	5/10/2017
N024018-004A	MW-28-025-EB-Q217	Groundwater	4/26/2017 11:05:00 AM	4/26/2017	5/10/2017
N024018-004B	MW-28-025-EB-Q217	Groundwater	4/26/2017 11:05:00 AM	4/26/2017	5/10/2017
N024018-004C	MW-28-025-EB-Q217	Groundwater	4/26/2017 11:05:00 AM	4/26/2017	5/10/2017
N024018-005A	MW-28-090-Q217	Groundwater	4/26/2017 10:10:00 AM	4/26/2017	5/10/2017
N024018-005B	MW-28-090-Q217	Groundwater	4/26/2017 10:10:00 AM	4/26/2017	5/10/2017
N024018-005C	MW-28-090-Q217	Groundwater	4/26/2017 10:10:00 AM	4/26/2017	5/10/2017
N024018-006A	MW-28-090-EB-Q217	Groundwater	4/26/2017 10:15:00 AM	4/26/2017	5/10/2017
N024018-006B	MW-28-090-EB-Q217	Groundwater	4/26/2017 10:15:00 AM	4/26/2017	5/10/2017
N024018-006C	MW-28-090-EB-Q217	Groundwater	4/26/2017 10:15:00 AM	4/26/2017	5/10/2017
N024018-007A	MW-33-150-Q217	Groundwater	4/26/2017 1:17:00 PM	4/26/2017	5/10/2017
N024018-007B	MW-33-150-Q217	Groundwater	4/26/2017 1:17:00 PM	4/26/2017	5/10/2017
N024018-007C	MW-33-150-Q217	Groundwater	4/26/2017 1:17:00 PM	4/26/2017	5/10/2017
N024018-008A	MW-906-Q217	Groundwater	4/26/2017 1:27:00 PM	4/26/2017	5/10/2017
N024018-008B	MW-906-Q217	Groundwater	4/26/2017 1:27:00 PM	4/26/2017	5/10/2017
N024018-008C	MW-906-Q217	Groundwater	4/26/2017 1:27:00 PM	4/26/2017	5/10/2017
N024018-009A	MW-33-090-Q217	Groundwater	4/26/2017 1:21:00 PM	4/26/2017	5/10/2017
N024018-009B	MW-33-090-Q217	Groundwater	4/26/2017 1:21:00 PM	4/26/2017	5/10/2017
N024018-009C	MW-33-090-Q217	Groundwater	4/26/2017 1:21:00 PM	4/26/2017	5/10/2017
N024018-010A	MW-909-Q217	Groundwater	4/26/2017 3:52:00 PM	4/26/2017	5/10/2017
N024018-010B	MW-909-Q217	Groundwater	4/26/2017 3:52:00 PM	4/26/2017	5/10/2017
N024018-010C	MW-909-Q217	Groundwater	4/26/2017 3:52:00 PM	4/26/2017	5/10/2017

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ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N024018
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024018-011A	MW-702-Q217	Groundwater	4/26/2017 5:00:00 PM	4/26/2017	5/10/2017
N024018-012A	MW-703-Q217	Groundwater	4/26/2017 5:00:00 PM	4/26/2017	5/10/2017
N024018-013A	MW-704-Q217	Groundwater	4/26/2017 5:00:00 PM	4/26/2017	5/10/2017
N024018-014A	MW-26-Q217	Groundwater	4/26/2017 4:23:00 PM	4/26/2017	5/10/2017
N024018-014B	MW-26-Q217	Groundwater	4/26/2017 4:23:00 PM	4/26/2017	5/10/2017
N024018-014C	MW-26-Q217	Groundwater	4/26/2017 4:23:00 PM	4/26/2017	5/10/2017
N024018-015A	MW-51-Q217	Groundwater	4/26/2017 3:42:00 PM	4/26/2017	5/10/2017
N024018-015B	MW-51-Q217	Groundwater	4/26/2017 3:42:00 PM	4/26/2017	5/10/2017
N024018-015C	MW-51-Q217	Groundwater	4/26/2017 3:42:00 PM	4/26/2017	5/10/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A** QC Batch: **R114948**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	10	0.33	1.0		µg/L	5	4/28/2017 09:01 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	9.7	0.019	1.0		µg/L	1	5/4/2017 02:52 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-205-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 12:08:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.2	0.33	1.0		µg/L	5	4/28/2017 09:57 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504A**	QC Batch: **62099**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	1.1	0.019	1.0		µg/L	1	5/4/2017 03:19 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-003

Client Sample ID: MW-28-025-Q217
Collection Date: 4/26/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A** QC Batch: **R114948**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2017 10:16 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 03:25 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-004

Client Sample ID: MW-28-025-EB-Q217
Collection Date: 4/26/2017 11:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A** QC Batch: **R114948**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2017 10:35 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 03:58 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-005

Client Sample ID: MW-28-090-Q217
Collection Date: 4/26/2017 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A** QC Batch: **R114948**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2017 10:54 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	1.2	0.019	1.0		µg/L	1	5/4/2017 04:04 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2017 11:13 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62099**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 04:09 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-007

Client Sample ID: MW-33-150-Q217
Collection Date: 4/26/2017 1:17:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A** QC Batch: **R114948**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	6.2	0.33	1.0		µg/L	5	4/28/2017 12:48 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	5.6	0.019	1.0		µg/L	1	5/4/2017 04:15 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 1:27:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.9	0.33	1.0		µg/L	5	4/28/2017 01:07 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62099**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	5.5	0.019	1.0		µg/L	1	5/4/2017 04:21 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.0	0.33	1.0		µg/L	5	4/28/2017 01:59 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62099**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	4.9	0.019	1.0		µg/L	1	5/4/2017 04:26 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 3:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4000	66	200		µg/L	1000	4/28/2017 02:18 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504C**	QC Batch: **62099**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	4200	0.48	25		µg/L	25	5/5/2017 01:02 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-702-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 5:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2017 02:37 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-703-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 5:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2017 02:56 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-704-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 5:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2017 03:14 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-014

Client Sample ID: MW-26-Q217
Collection Date: 4/26/2017 4:23:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2300	33	100		µg/L	500	4/28/2017 03:52 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504C**	QC Batch: **62099**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	2600	0.48	25		µg/L	25	5/5/2017 01:08 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-015

Client Sample ID: MW-51-Q217
Collection Date: 4/26/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A**	QC Batch: **R114948**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	4000	66	200		µg/L	1000	4/28/2017 04:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504C**	QC Batch: **62099**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	4100	0.48	25		µg/L	25	5/5/2017 01:19 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R114948	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948		
Client ID:	PBW	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631934		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R114948	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948		
Client ID:	LCSW	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631935		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.054	0.20	5.000	0	101	90	110						

Sample ID	N024036-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948		
Client ID:	ZZZZZZ	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631937		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	12.693	0.20	5.000	7.613	102	90	110						

Sample ID	N024036-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948		
Client ID:	ZZZZZZ	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631938		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	7.689	0.20						7.613	0.997	20			

Sample ID	N024036-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948		
Client ID:	ZZZZZZ	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631939		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	12.738	0.20	5.000	7.613	102	90	110	12.69	0.348	20			

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024018-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	35.697	1.0	25.00	10.32	102	90	110				

Sample ID **N024018-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.989	1.0	5.000	1.176	96.2	90	110				

Sample ID **N024018-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID **N024018-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID **N024018-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.007	0.20	1.000	0	101	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024018-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0	106	90	110				

Sample ID **N024018-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.998	1.0	5.000	6.154	96.9	90	110				

Sample ID **N024018-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.087	1.0	5.000	5.862	104	90	110				

Sample ID **N024018-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.248	1.0	5.000	5.022	105	90	110				

Sample ID **N024018-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9101.800	200	5000	3978	102	90	110				

Qualifiers:

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

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024018-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Sample ID **N024018-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N024018-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.963	0.20	1.000	0	96.2	90	110				

Sample ID **N024018-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4897.550	100	2500	2266	105	90	110				

Sample ID **N024018-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9170.800	200	5000	3986	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024019-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948
Client ID:	ZZZZZZ	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631979

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62099	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	PBW	Batch ID:	62099	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636428

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.041	1.0									

Sample ID	LCS-62099	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	LCSW	Batch ID:	62099	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636429

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.026	1.0	10.00	0	100	85	115				

Sample ID	N024018-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	ZZZZZZ	Batch ID:	62099	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636433

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.494	1.0	10.00	9.653	88.4	75	125				

Sample ID	N024018-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	ZZZZZZ	Batch ID:	62099	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.365	1.0	10.00	9.653	87.1	75	125	18.49	0.704	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.3	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 11:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-090-EB-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 10:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-150-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 1:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.3	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-906-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 1:27:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.4	0.022	0.050		mg/L	1	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.2	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-909-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 3:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	9.0	0.22	0.50		mg/L	10	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-26-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 4:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	23	0.44	1.0		mg/L	20	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-51-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 3:42:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	9.3	0.22	0.50		mg/L	10	5/3/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R115019**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **PBW**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635108**

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

Sample ID **LCS-R115019**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **LCSW**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.7	85	115				

Sample ID **N023998-001DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635111**

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

Sample ID **N023998-001DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.7	75	125				

Sample ID **N023998-001DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.542	0.050	0.5000	0	108	75	125	0.4986	8.40	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115090	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	PBW	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637406

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

Sample ID	LCS-R115090	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	LCSW	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637407

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.4	85	115				

Sample ID	N024037-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	ZZZZZZ	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637409

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

Sample ID	N024037-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	ZZZZZZ	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	75	125				

Sample ID	N024037-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	ZZZZZZ	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.559	0.050	0.5000	0	112	75	125	0.5014	10.9	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-46-175-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 12:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Molybdenum	180	0.19	2.5		µg/L	5	5/4/2017 02:57 PM
Selenium	ND	0.69	12		µg/L	25	5/4/2017 11:16 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 11:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	0.99	0.025	0.10		µg/L	1	5/4/2017 03:25 PM
Manganese	17	0.056	0.50		µg/L	1	5/4/2017 03:25 PM
Molybdenum	6.2	0.039	0.50		µg/L	1	5/4/2017 03:25 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2017 03:25 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-28-025-EB-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/4/2017 03:58 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 03:58 PM
Molybdenum	ND	0.039	0.50		µg/L	1	5/4/2017 03:58 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2017 03:58 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-005

Client Sample ID: MW-28-090-Q217
Collection Date: 4/26/2017 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/4/2017 04:04 PM
Manganese	270	0.28	2.5		µg/L	5	5/5/2017 12:23 AM
Molybdenum	25	0.039	0.50		µg/L	1	5/4/2017 04:04 PM
Selenium	ND	0.14	2.5		µg/L	5	5/5/2017 12:23 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-006

Client Sample ID: MW-28-090-EB-Q217
Collection Date: 4/26/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/4/2017 04:09 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 04:09 PM
Molybdenum	ND	0.039	0.50		µg/L	1	5/4/2017 04:09 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2017 04:09 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-007

Client Sample ID: MW-33-150-Q217
Collection Date: 4/26/2017 1:17:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.6	0.025	0.10		µg/L	1	5/4/2017 04:15 PM
Manganese	65	0.056	0.50		µg/L	1	5/4/2017 04:15 PM
Molybdenum	47	0.19	2.5		µg/L	5	5/5/2017 12:29 AM
Selenium	ND	0.14	2.5		µg/L	5	5/5/2017 12:29 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-008

Client Sample ID: MW-906-Q217
Collection Date: 4/26/2017 1:27:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	5/4/2017 04:21 PM
Manganese	63	0.056	0.50		µg/L	1	5/4/2017 04:21 PM
Molybdenum	48	0.19	2.5		µg/L	5	5/5/2017 12:34 AM
Selenium	ND	0.14	2.5		µg/L	5	5/5/2017 12:34 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-090-Q217
Lab Order:	N024018	**Collection Date:**	4/26/2017 1:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024018-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	1.2	0.025	0.10		µg/L	1	5/4/2017 04:26 PM
Manganese	3.1	0.056	0.50		µg/L	1	5/4/2017 04:26 PM
Molybdenum	10	0.19	2.5		µg/L	5	5/5/2017 12:51 AM
Selenium	ND	0.14	2.5		µg/L	5	5/5/2017 12:51 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-010

Client Sample ID: MW-909-Q217
Collection Date: 4/26/2017 3:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	3.5	0.025	0.10		µg/L	1	5/4/2017 04:32 PM
Manganese	1.8	0.056	0.50		µg/L	1	5/4/2017 04:32 PM
Molybdenum	48	0.19	2.5		µg/L	5	5/5/2017 12:57 AM
Selenium	13	0.14	2.5		µg/L	5	5/5/2017 12:57 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-014

Client Sample ID: MW-26-Q217
Collection Date: 4/26/2017 4:23:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.9	0.025	0.10		µg/L	1	5/4/2017 04:37 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 04:37 PM
Molybdenum	32	0.039	0.50		µg/L	1	5/4/2017 04:37 PM
Selenium	44	0.028	0.50		µg/L	1	5/4/2017 04:37 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024018
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024018-015

Client Sample ID: MW-51-Q217
Collection Date: 4/26/2017 3:42:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	3.5	0.025	0.10		µg/L	1	5/4/2017 04:43 PM
Manganese	2.1	0.056	0.50		µg/L	1	5/4/2017 04:43 PM
Molybdenum	45	0.19	2.5		µg/L	5	5/5/2017 01:14 AM
Selenium	13	0.14	2.5		µg/L	5	5/5/2017 01:14 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LCS-62099**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **LCSW**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.673	0.10	10.00	0	96.7	85	115				
Manganese	95.280	0.50	100.0	0	95.3	85	115				
Molybdenum	8.809	0.50	10.00	0	88.1	85	115				
Selenium	10.051	0.50	10.00	0	101	85	115				

Sample ID **N024018-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.246	0.50	100.0	16.48	84.8	75	125				

Sample ID **N024018-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	100.537	0.50	100.0	16.48	84.1	75	125	101.2	0.703	20	

Sample ID **MB-62099**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **PBW**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2638098**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024018
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N024018-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2638101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.121	0.50	10.00	2.102	110	75	125				
Molybdenum	176.540	2.5	10.00	177.2	-6.58	75	125				S

Sample ID **N024018-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2638104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.902	0.50	10.00	2.102	98.0	75	125	13.12	9.74	20	
Molybdenum	175.171	2.5	10.00	177.2	-20.3	75	125	176.5	0.778	20	S

Sample ID **N024018-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/5/2017**	SeqNo: **2638107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	6.637	12	10.00	0	66.4	75	125				S

Sample ID **N024018-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/5/2017**	SeqNo: **2638108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.154	12	10.00	0	112	75	125	6.637	0	20	

Qualifiers:

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

Calculations are based on raw values

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

CHAIN OF CUSTODY RECORD

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P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Page 1 of 2

| | | |

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/26/2017	Workorder:	N024018
Rep sample Temp (Deg C):	1.9/3.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments:

Checklist Completed By: YR 5/3/2017

Reviewed By: MBC 5/4/2017

ASSET Laboratories

WORK ORDER Summary

27-Apr-17

WorkOrder: N024018

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/26/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024018-001A	MW-46-175-Q217	4/26/2017 12:05:00 PM	5/10/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-001B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-001C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-002A	MW-46-205-Q217	4/26/2017 12:08:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-002B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-003A	MW-28-025-Q217	4/26/2017 11:00:00 AM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-003B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-003C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-004A	MW-28-025-EB-Q217	4/26/2017 11:05:00 AM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-004B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-004C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-005A	MW-28-090-Q217	4/26/2017 10:10:00 AM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-005B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-17

WorkOrder: N024018

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/26/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024018-005B	MW-28-090-Q217	4/26/2017 10:10:00 AM	5/10/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-005C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-006A	MW-28-090-EB-Q217	4/26/2017 10:15:00 AM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-006B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-006C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-007A	MW-33-150-Q217	4/26/2017 1:17:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-007B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-007C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-008A	MW-906-Q217	4/26/2017 1:27:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-008B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-008C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-009A	MW-33-090-Q217	4/26/2017 1:21:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-009B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-17

WorkOrder: N024018

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/26/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024018-009C	MW-33-090-Q217	4/26/2017 1:21:00 PM	5/10/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-010A	MW-909-Q217	4/26/2017 3:52:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-010B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-010C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-011A	MW-702-Q217	4/26/2017 5:00:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-012A	MW-703-Q217		5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-013A	MW-704-Q217		5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-014A	MW-26-Q217	4/26/2017 4:23:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-014B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-014C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-015A	MW-51-Q217	4/26/2017 3:42:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024018-015B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024018-015C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024018-016A	FOLDER	5/10/2017	5/10/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/10/2017		Folder	Folder	☐	☐	☐	LAB

May 10, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N024019

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 26, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Liburdi for

Puri Romualdo
Laboratory Director

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

SAMPLE RECEIVING/GENERAL COMMENTS

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for sample N024019-008 due to matrix interference. Sample was analyzed at lower dilution however matrix spike recovery and/or retention time criteria were not met indicating possible matrix interference. Sample was reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024019-003, N024019-006 and N024019-008 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Molybdenum on QC samples N024018-001B-MS and N024018-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) is outside recovery criteria for Selenium on QC sample N024018-001B-MS possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *10-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N024019
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024019-001A	MW-29-EB-Q217	Groundwater	4/26/2017 3:12:00 PM	4/26/2017	5/10/2017
N024019-001B	MW-29-EB-Q217	Groundwater	4/26/2017 3:12:00 PM	4/26/2017	5/10/2017
N024019-001C	MW-29-EB-Q217	Groundwater	4/26/2017 3:12:00 PM	4/26/2017	5/10/2017
N024019-002A	MW-29-Q217	Groundwater	4/26/2017 3:05:00 PM	4/26/2017	5/10/2017
N024019-002B	MW-29-Q217	Groundwater	4/26/2017 3:05:00 PM	4/26/2017	5/10/2017
N024019-002C	MW-29-Q217	Groundwater	4/26/2017 3:05:00 PM	4/26/2017	5/10/2017
N024019-003A	MW-33-040-Q217	Groundwater	4/26/2017 2:04:00 PM	4/26/2017	5/10/2017
N024019-003B	MW-33-040-Q217	Groundwater	4/26/2017 2:04:00 PM	4/26/2017	5/10/2017
N024019-003C	MW-33-040-Q217	Groundwater	4/26/2017 2:04:00 PM	4/26/2017	5/10/2017
N024019-004A	MW-47-055-Q217	Groundwater	4/26/2017 4:21:00 PM	4/26/2017	5/10/2017
N024019-004B	MW-47-055-Q217	Groundwater	4/26/2017 4:21:00 PM	4/26/2017	5/10/2017
N024019-005A	MW-908-Q217	Groundwater	4/26/2017 4:31:00 PM	4/26/2017	5/10/2017
N024019-005B	MW-908-Q217	Groundwater	4/26/2017 4:31:00 PM	4/26/2017	5/10/2017
N024019-006A	MW-47-115-Q217	Groundwater	4/26/2017 4:45:00 PM	4/26/2017	5/10/2017
N024019-006B	MW-47-115-Q217	Groundwater	4/26/2017 4:45:00 PM	4/26/2017	5/10/2017
N024019-007A	MW-33-040-EB-Q217	Groundwater	4/26/2017 2:12:00 PM	4/26/2017	5/10/2017
N024019-007B	MW-33-040-EB-Q217	Groundwater	4/26/2017 2:12:00 PM	4/26/2017	5/10/2017
N024019-007C	MW-33-040-EB-Q217	Groundwater	4/26/2017 2:12:00 PM	4/26/2017	5/10/2017
N024019-008A	MW-33-210-Q217	Groundwater	4/26/2017 2:10:00 PM	4/26/2017	5/10/2017
N024019-008B	MW-33-210-Q217	Groundwater	4/26/2017 2:10:00 PM	4/26/2017	5/10/2017
N024019-008C	MW-33-210-Q217	Groundwater	4/26/2017 2:10:00 PM	4/26/2017	5/10/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 3:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170427B** QC Batch: **R114947**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/27/2017 05:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 04:48 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024019
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024019-002

Client Sample ID: MW-29-Q217
Collection Date: 4/26/2017 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170428A** QC Batch: **R114948**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/28/2017 04:30 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 05:05 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 2:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170427B** QC Batch: **R114947**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/27/2017 06:00 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 05:11 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024019
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024019-004

Client Sample ID: MW-47-055-Q217
Collection Date: 4/26/2017 4:21:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170427B** QC Batch: **R114947**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	15	0.33	1.0		µg/L	5	4/27/2017 04:25 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	5/4/2017 05:16 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 4:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170427B** QC Batch: **R114947**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	15	0.33	1.0		µg/L	5	4/27/2017 06:38 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	5/4/2017 05:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-115-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 4:45:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170427B** QC Batch: **R114947**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	23	0.33	1.0		µg/L	5	4/27/2017 06:57 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	22	0.019	1.0		µg/L	1	5/4/2017 05:27 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 2:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170427B** QC Batch: **R114947**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	4/27/2017 07:16 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170504A** QC Batch: **62099**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 05:33 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170427B**	QC Batch: **R114947**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	9.5	0.33	1.0		µg/L	5	4/27/2017 07:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504A**	QC Batch: **62099**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	8.3	0.019	1.0		µg/L	1	5/4/2017 05:39 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R114947**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114947**
Client ID: **LCSW**	Batch ID: **R114947**	TestNo: **EPA 218.6**		Analysis Date: **4/27/2017**	SeqNo: **2631848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.971	0.20	5.000	0	99.4	90	110				

Sample ID **MB-R114947**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114947**
Client ID: **PBW**	Batch ID: **R114947**	TestNo: **EPA 218.6**		Analysis Date: **4/27/2017**	SeqNo: **2631849**

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

Sample ID **N024019-004ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114947**
Client ID: **ZZZZZZ**	Batch ID: **R114947**	TestNo: **EPA 218.6**		Analysis Date: **4/27/2017**	SeqNo: **2631851**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	15.564	1.0						15.19	2.44	20	

Sample ID **N024019-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114947**
Client ID: **ZZZZZZ**	Batch ID: **R114947**	TestNo: **EPA 218.6**		Analysis Date: **4/27/2017**	SeqNo: **2631852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.662	1.0	25.00	15.19	102	90	110				

Sample ID **N024019-004AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114947**
Client ID: **ZZZZZZ**	Batch ID: **R114947**	TestNo: **EPA 218.6**		Analysis Date: **4/27/2017**	SeqNo: **2631853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.503	1.0	25.00	15.19	101	90	110	40.66	0.393	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024019-001AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114947**
Client ID: **ZZZZZZ** Batch ID: **R114947** TestNo: **EPA 218.6** Analysis Date: **4/27/2017** SeqNo: **2631855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.071	0.20	1.000	0	107	90	110				

Sample ID **N024019-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114947**
Client ID: **ZZZZZZ** Batch ID: **R114947** TestNo: **EPA 218.6** Analysis Date: **4/27/2017** SeqNo: **2631859**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.053	0.20	1.000	0	105	90	110				

Sample ID **N024019-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114947**
Client ID: **ZZZZZZ** Batch ID: **R114947** TestNo: **EPA 218.6** Analysis Date: **4/27/2017** SeqNo: **2631861**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	40.554	1.0	25.00	15.02	102	90	110				

Sample ID **N024019-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114947**
Client ID: **ZZZZZZ** Batch ID: **R114947** TestNo: **EPA 218.6** Analysis Date: **4/27/2017** SeqNo: **2631863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	48.640	1.0	25.00	22.52	104	90	110				

Sample ID **N024019-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **114947**
Client ID: **ZZZZZZ** Batch ID: **R114947** TestNo: **EPA 218.6** Analysis Date: **4/27/2017** SeqNo: **2631865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024019-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114947
Client ID:	ZZZZZZ	Batch ID:	R114947	TestNo:	EPA 218.6			Analysis Date:	4/27/2017	SeqNo:	2631869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.453	1.0	5.000	9.508	98.9	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R114948	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948
Client ID:	PBW	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631934

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

Sample ID	LCS-R114948	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948
Client ID:	LCSW	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631935

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.054	0.20	5.000	0	101	90	110				

Sample ID	N024036-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948
Client ID:	ZZZZZZ	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631937

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.693	0.20	5.000	7.613	102	90	110				

Sample ID	N024036-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948
Client ID:	ZZZZZZ	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.689	0.20						7.613	0.997	20	

Sample ID	N024036-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948
Client ID:	ZZZZZZ	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631939

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12.738	0.20	5.000	7.613	102	90	110	12.69	0.348	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024018-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	35.697	1.0	25.00	10.32	102	90	110				

Sample ID **N024018-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631945**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.989	1.0	5.000	1.176	96.2	90	110				

Sample ID **N024018-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631947**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.049	0.20	1.000	0	105	90	110				

Sample ID **N024018-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631949**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID **N024018-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631951**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.007	0.20	1.000	0	101	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024018-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631953**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.064	0.20	1.000	0	106	90	110				

Sample ID **N024018-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631957**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.998	1.0	5.000	6.154	96.9	90	110				

Sample ID **N024018-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.087	1.0	5.000	5.862	104	90	110				

Sample ID **N024018-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.248	1.0	5.000	5.022	105	90	110				

Sample ID **N024018-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9101.800	200	5000	3978	102	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024018-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631967**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.992	0.20	1.000	0	99.2	90	110				

Sample ID **N024018-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N024018-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631971**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.963	0.20	1.000	0	96.2	90	110				

Sample ID **N024018-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631975**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4897.550	100	2500	2266	105	90	110				

Sample ID **N024018-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114948**
Client ID: **ZZZZZZ**	Batch ID: **R114948**	TestNo: **EPA 218.6**		Analysis Date: **4/28/2017**	SeqNo: **2631977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9170.800	200	5000	3986	104	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024019-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114948
Client ID:	ZZZZZZ	Batch ID:	R114948	TestNo:	EPA 218.6			Analysis Date:	4/28/2017	SeqNo:	2631979

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.063	0.20	1.000	0	106	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62099	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	PBW	Batch ID:	62099	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636428

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.041	1.0									

Sample ID	LCS-62099	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	LCSW	Batch ID:	62099	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636429

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.026	1.0	10.00	0	100	85	115				

Sample ID	N024018-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	ZZZZZZ	Batch ID:	62099	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636433

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.494	1.0	10.00	9.653	88.4	75	125				

Sample ID	N024018-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	ZZZZZZ	Batch ID:	62099	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636434

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.365	1.0	10.00	9.653	87.1	75	125	18.49	0.704	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 3:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 3:05:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.053	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 2:04:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 2:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170503F**	QC Batch: **R115019**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.051	0.022	0.050		mg/L	1	5/3/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.6	0.022	0.050		mg/L	1	5/5/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R115019**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **PBW**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635108**

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

Sample ID **LCS-R115019**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **LCSW**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.494	0.050	0.5000	0	98.7	85	115				

Sample ID **N023998-001DDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635111**

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

Sample ID **N023998-001DMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.499	0.050	0.5000	0	99.7	75	125				

Sample ID **N023998-001DMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115019**
Client ID: **ZZZZZZ**	Batch ID: **R115019**	TestNo: **SM4500-NO3**		Analysis Date: **5/3/2017**	SeqNo: **2635113**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.542	0.050	0.5000	0	108	75	125	0.4986	8.40	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R115090**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **PBW**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637406**

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

Sample ID **LCS-R115090**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **LCSW**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.4	85	115				

Sample ID **N024037-001CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **ZZZZZZ**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637409**

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

Sample ID **N024037-001CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **ZZZZZZ**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	75	125				

Sample ID **N024037-001CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **ZZZZZZ**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.559	0.050	0.5000	0	112	75	125	0.5014	10.9	20	

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-29-EB-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 3:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/4/2017 04:48 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 04:48 PM
Molybdenum	ND	0.039	0.50		µg/L	1	5/4/2017 04:48 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2017 04:48 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024019
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024019-002

Client Sample ID: MW-29-Q217
Collection Date: 4/26/2017 3:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	15	0.025	0.10		µg/L	1	5/4/2017 05:05 PM
Manganese	390	0.28	2.5		µg/L	5	5/5/2017 01:25 AM
Molybdenum	33	0.039	0.50		µg/L	1	5/4/2017 05:05 PM
Selenium	2.0	0.028	0.50		µg/L	1	5/4/2017 05:05 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024019
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024019-003

Client Sample ID: MW-33-040-Q217
Collection Date: 4/26/2017 2:04:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	11	0.025	0.10		µg/L	1	5/4/2017 05:11 PM
Manganese	16	0.056	0.50		µg/L	1	5/4/2017 05:11 PM
Molybdenum	120	0.039	0.50		µg/L	1	5/4/2017 05:11 PM
Selenium	ND	0.14	2.5		µg/L	5	5/5/2017 01:30 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-47-055-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 4:21:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	0.96	0.025	0.10		µg/L	1	5/4/2017 05:16 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 05:16 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-908-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 4:31:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	0.96	0.025	0.10		µg/L	1	5/4/2017 05:22 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 05:22 PM

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024019
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024019-006

Client Sample ID: MW-47-115-Q217
Collection Date: 4/26/2017 4:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.8	0.025	0.10		µg/L	1	5/4/2017 05:27 PM
Manganese	1.9	0.056	0.50		µg/L	1	5/4/2017 05:27 PM
Molybdenum	21	0.19	2.5		µg/L	5	5/5/2017 01:42 AM
Selenium	ND	0.14	2.5		µg/L	5	5/5/2017 01:42 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-040-EB-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 2:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62099**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/4/2017 05:33 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 05:33 PM
Molybdenum	ND	0.039	0.50		µg/L	1	5/4/2017 05:33 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2017 05:33 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-33-210-Q217
Lab Order:	N024019	**Collection Date:**	4/26/2017 2:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024019-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504C**	QC Batch: **62099**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	1.2	0.12	0.50		µg/L	5	5/5/2017 01:58 AM
Manganese	14	0.056	0.50		µg/L	1	5/4/2017 05:39 PM
Molybdenum	19	0.19	2.5		µg/L	5	5/5/2017 01:58 AM
Selenium	ND	0.14	2.5		µg/L	5	5/5/2017 01:58 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LCS-62099**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **LCSW**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636509**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.673	0.10	10.00	0	96.7	85	115				
Manganese	95.280	0.50	100.0	0	95.3	85	115				
Molybdenum	8.809	0.50	10.00	0	88.1	85	115				
Selenium	10.051	0.50	10.00	0	101	85	115				

Sample ID **N024018-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.246	0.50	100.0	16.48	84.8	75	125				

Sample ID **N024018-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	100.537	0.50	100.0	16.48	84.1	75	125	101.2	0.703	20	

Sample ID **MB-62099**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **PBW**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2638098**

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

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024019
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N024018-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2638101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	13.121	0.50	10.00	2.102	110	75	125				
Molybdenum	176.540	2.5	10.00	177.2	-6.58	75	125				S

Sample ID **N024018-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2638104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.902	0.50	10.00	2.102	98.0	75	125	13.12	9.74	20	
Molybdenum	175.171	2.5	10.00	177.2	-20.3	75	125	176.5	0.778	20	S

Sample ID **N024018-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/5/2017**	SeqNo: **2638107**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	6.637	12	10.00	0	66.4	75	125				S

Sample ID **N024018-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115102**
Client ID: **ZZZZZZ**	Batch ID: **62099**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/5/2017**	SeqNo: **2638108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	11.154	12	10.00	0	112	75	125	6.637	0	20	

Qualifiers:

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

CHAIN OF CUSTODY RECORD

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

Page 2 of 2

| | | |

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/26/2017	Workorder:	N024019
Rep sample Temp (Deg C):	2.9	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

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

Sample Receipt Checklist

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

Comments:

Checklist Completed By: YR 5/3/2017

Reviewed By: MBC 5/4/2017

ASSET Laboratories

WORK ORDER Summary

27-Apr-17

WorkOrder: N024019

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/26/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024019-001A	MW-29-EB-Q217	4/26/2017 3:12:00 PM	5/10/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024019-001B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024019-001C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024019-002A	MW-29-Q217	4/26/2017 3:05:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024019-002B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024019-002C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024019-003A	MW-33-040-Q217	4/26/2017 2:04:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024019-003B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024019-003C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024019-004A	MW-47-055-Q217	4/26/2017 4:21:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024019-004B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024019-005A	MW-908-Q217	4/26/2017 4:31:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024019-005B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

27-Apr-17

WorkOrder: N024019

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/26/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024019-005B	MW-908-Q217	4/26/2017 4:31:00 PM	5/10/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024019-006A	MW-47-115-Q217	4/26/2017 4:45:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024019-006B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024019-007A	MW-33-040-EB-Q217	4/26/2017 2:12:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024019-007B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024019-007C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024019-008A	MW-33-210-Q217	4/26/2017 2:10:00 PM	5/10/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024019-008B			5/10/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/10/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024019-008C			5/10/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024019-009A	FOLDER	5/10/2017	5/10/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/10/2017		Folder	Folder	☐	☐	☐	LAB

May 11, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N024037

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 27, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Liburdi for

Puri Romualdo
Laboratory Director

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

SAMPLE RECEIVING/GENERAL COMMENTS

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0.67 ug/L) for sample N024037-001 (MW-34-100-Q217) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Because the results for total dissolved chromium (1.8 ug/L) and hexavalent chromium (0.67 ug/L) for sample N024037-001 (MW-34-100-Q217) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.9 and 0.47 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Dilution was necessary on some analytes for samples N024037-001, N024037-004, N024037-009 and N024037-012 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N023999-001B-MS and N023999-001B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
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ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *11-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N024037
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024037-001A	MW-34-100-Q217	Groundwater	4/27/2017 8:55:00 AM	4/27/2017	5/11/2017
N024037-001B	MW-34-100-Q217	Groundwater	4/27/2017 8:55:00 AM	4/27/2017	5/11/2017
N024037-001C	MW-34-100-Q217	Groundwater	4/27/2017 8:55:00 AM	4/27/2017	5/11/2017
N024037-002A	MW-34-080-Q217	Groundwater	4/27/2017 9:12:00 AM	4/27/2017	5/11/2017
N024037-002B	MW-34-080-Q217	Groundwater	4/27/2017 9:12:00 AM	4/27/2017	5/11/2017
N024037-003A	MW-34-080-EB-Q217	Groundwater	4/27/2017 9:17:00 AM	4/27/2017	5/11/2017
N024037-003B	MW-34-080-EB-Q217	Groundwater	4/27/2017 9:17:00 AM	4/27/2017	5/11/2017
N024037-004A	MW-44-115-Q217	Groundwater	4/27/2017 10:06:00 AM	4/27/2017	5/11/2017
N024037-004B	MW-44-115-Q217	Groundwater	4/27/2017 10:06:00 AM	4/27/2017	5/11/2017
N024037-004C	MW-44-115-Q217	Groundwater	4/27/2017 10:06:00 AM	4/27/2017	5/11/2017
N024037-005A	MW-44-070-Q217	Groundwater	4/27/2017 10:10:00 AM	4/27/2017	5/11/2017
N024037-005B	MW-44-070-Q217	Groundwater	4/27/2017 10:10:00 AM	4/27/2017	5/11/2017
N024037-006A	MW-44-070-EB-Q217	Groundwater	4/27/2017 10:20:00 AM	4/27/2017	5/11/2017
N024037-006B	MW-44-070-EB-Q217	Groundwater	4/27/2017 10:20:00 AM	4/27/2017	5/11/2017
N024037-007A	MW-44-125-Q217	Groundwater	4/27/2017 10:57:00 AM	4/27/2017	5/11/2017
N024037-007B	MW-44-125-Q217	Groundwater	4/27/2017 10:57:00 AM	4/27/2017	5/11/2017
N024037-007C	MW-44-125-Q217	Groundwater	4/27/2017 10:57:00 AM	4/27/2017	5/11/2017
N024037-008A	MW-44-125-EB-Q217	Groundwater	4/27/2017 11:05:00 AM	4/27/2017	5/11/2017
N024037-008B	MW-44-125-EB-Q217	Groundwater	4/27/2017 11:05:00 AM	4/27/2017	5/11/2017
N024037-008C	MW-44-125-EB-Q217	Groundwater	4/27/2017 11:05:00 AM	4/27/2017	5/11/2017
N024037-009A	MW-36-100-2Q17	Groundwater	4/27/2017 11:52:00 AM	4/27/2017	5/11/2017
N024037-009B	MW-36-100-2Q17	Groundwater	4/27/2017 11:52:00 AM	4/27/2017	5/11/2017
N024037-009C	MW-36-100-2Q17	Groundwater	4/27/2017 11:52:00 AM	4/27/2017	5/11/2017
N024037-010A	MW-907-Q217	Groundwater	4/27/2017 12:02:00 PM	4/27/2017	5/11/2017
N024037-010B	MW-907-Q217	Groundwater	4/27/2017 12:02:00 PM	4/27/2017	5/11/2017
N024037-010C	MW-907-Q217	Groundwater	4/27/2017 12:02:00 PM	4/27/2017	5/11/2017
N024037-011A	MW-36-090-Q217	Groundwater	4/27/2017 11:53:00 AM	4/27/2017	5/11/2017
N024037-011B	MW-36-090-Q217	Groundwater	4/27/2017 11:53:00 AM	4/27/2017	5/11/2017
N024037-012A	MW-39-100-Q217	Groundwater	4/27/2017 12:58:00 PM	4/27/2017	5/11/2017

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N024037
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024037-012B	MW-39-100-Q217	Groundwater	4/27/2017 12:58:00 PM	4/27/2017	5/11/2017
N024037-012C	MW-39-100-Q217	Groundwater	4/27/2017 12:58:00 PM	4/27/2017	5/11/2017
N024037-013A	MW-74-240-Q217	Groundwater	4/27/2017 8:27:00 AM	4/27/2017	5/11/2017
N024037-013B	MW-74-240-Q217	Groundwater	4/27/2017 8:27:00 AM	4/27/2017	5/11/2017
N024037-013C	MW-74-240-Q217	Groundwater	4/27/2017 8:27:00 AM	4/27/2017	5/11/2017
N024037-014A	MW-20-070-Q217	Groundwater	4/27/2017 11:53:00 AM	4/27/2017	5/11/2017
N024037-014B	MW-20-070-Q217	Groundwater	4/27/2017 11:53:00 AM	4/27/2017	5/11/2017
N024037-014C	MW-20-070-Q217	Groundwater	4/27/2017 11:53:00 AM	4/27/2017	5/11/2017
N024037-015A	MW-20-100-Q217	Groundwater	4/27/2017 11:12:00 AM	4/27/2017	5/11/2017
N024037-015B	MW-20-100-Q217	Groundwater	4/27/2017 11:12:00 AM	4/27/2017	5/11/2017
N024037-015C	MW-20-100-Q217	Groundwater	4/27/2017 11:12:00 AM	4/27/2017	5/11/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.67	0.066	0.20		µg/L	1	5/1/2017 02:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	1.8	0.019	1.0		µg/L	1	5/4/2017 12:38 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 9:12:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170501A** QC Batch: **R114996**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/1/2017 12:50 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170504A** QC Batch: **62100**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 12:43 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-EB-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 9:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/1/2017 01:11 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 12:49 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A** QC Batch: **R114996**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	21	0.33	1.0		µg/L	5	5/1/2017 01:30 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62100**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	19	0.019	1.0		µg/L	1	5/4/2017 12:54 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/1/2017 02:48 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 01:00 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-EB-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/1/2017 03:07 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 01:07 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/1/2017 07:04 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 01:11 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-EB-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/1/2017 04:04 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 01:28 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-2Q17
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170501A** QC Batch: **R114996** PrepDate							Analyst: **RAB**
Hexavalent Chromium	32	0.33	1.0		µg/L	5	5/1/2017 04:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170504A** QC Batch: **62100** PrepDate **5/1/2017**							Analyst: **CEI**
Chromium	32	0.019	1.0		µg/L	1	5/4/2017 01:34 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A** QC Batch: **R114996**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	31	0.33	1.0		µg/L	5	5/1/2017 04:42 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62100**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	33	0.019	1.0		µg/L	1	5/4/2017 01:39 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:53:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/1/2017 05:01 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 01:45 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A** QC Batch: **R114996**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	71	0.66	2.0		µg/L	10	5/1/2017 05:20 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170504A** QC Batch: **62100**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	67	0.019	1.0		µg/L	1	5/4/2017 01:50 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 8:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/1/2017 05:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170504A**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/4/2017 01:56 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024037
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024037-014

Client Sample ID: MW-20-070-Q217
Collection Date: 4/27/2017 11:53:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	13	40		µg/L	200	5/1/2017 06:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504C**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	1900	0.48	25		µg/L	25	5/4/2017 10:20 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024037
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024037-015

Client Sample ID: MW-20-100-Q217
Collection Date: 4/27/2017 11:12:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170501A**	QC Batch: **R114996**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2000	13	40		µg/L	200	5/1/2017 06:35 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504C**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	2100	0.48	25		µg/L	25	5/4/2017 10:36 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R114996**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **PBW**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634092**

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

Sample ID **LCS-R114996**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **LCSW**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634093**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.115	0.20	5.000	0	102	90	110				

Sample ID **N024037-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **ZZZZZZ**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634095**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.928	0.20	1.000	0	92.8	90	110				

Sample ID **N024037-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **ZZZZZZ**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.043	0.20	1.000	0	104	90	110				

Sample ID **N024037-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **ZZZZZZ**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.115	1.0	25.00	20.79	101	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024037-004AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634102

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.519	1.0	25.00	20.79	103	90	110	46.11	0.873	20	

Sample ID	N024037-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634104

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.669	0.20	1.000	0.6712	99.8	90	110				

Sample ID	N024037-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634106

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.980	0.20	1.000	0	98.0	90	110				

Sample ID	N024037-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634108

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.025	0.20	1.000	0	102	90	110				

Sample ID	N024037-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634112

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024037-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **ZZZZZZ**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	57.348	1.0	25.00	31.68	103	90	110				

Sample ID **N024037-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **ZZZZZZ**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634116**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.568	1.0	25.00	31.11	102	90	110				

Sample ID **N024037-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **ZZZZZZ**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.975	0.20	1.000	0	97.5	90	110				

Sample ID **N024037-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **ZZZZZZ**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634120**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	122.560	2.0	50.00	70.55	104	90	110				

Sample ID **N024037-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **114996**
Client ID: **ZZZZZZ**	Batch ID: **R114996**	TestNo: **EPA 218.6**		Analysis Date: **5/1/2017**	SeqNo: **2634124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.1260	102	90	110				

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024037-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634126

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2834.480	40	1000	1825	101	90	110				

Sample ID	N024037-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634128

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2991.980	40	1000	1989	100	90	110				

Sample ID	N024037-004ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634129

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	20.863	1.0						20.79	0.370	20	

Sample ID	N024037-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	114996
Client ID:	ZZZZZZ	Batch ID:	R114996	TestNo:	EPA 218.6			Analysis Date:	5/1/2017	SeqNo:	2634131

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.021	0.20	1.000	0	102	90	110				

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62100	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	PBW	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.042	1.0									

Sample ID	LCS-62100	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	LCSW	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.075	1.0	10.00	0	101	85	115				

Sample ID	N023999-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	ZZZZZZ	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	462.139	5.0	10.00	456.3	58.2	75	125				S

Sample ID	N023999-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	ZZZZZZ	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	452.989	5.0	10.00	456.3	-33.3	75	125	462.1	2.00	20	S

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-100-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-115-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-EB-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-2Q17
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.075	0.022	0.050		mg/L	1	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170509B**	QC Batch: **R115137**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.062	0.022	0.050		mg/L	1	5/9/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-74-240-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 8:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170509B**	QC Batch: **R115137**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.52	0.022	0.050		mg/L	1	5/9/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:53:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	8.8	0.22	0.50		mg/L	10	5/5/2017

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:12:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	8.7	0.22	0.50		mg/L	10	5/5/2017

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R115090**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **PBW**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637406**

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

Sample ID **LCS-R115090**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **LCSW**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.4	85	115				

Sample ID **N024037-001CDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **ZZZZZZ**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637409**

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

Sample ID **N024037-001CMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **ZZZZZZ**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	75	125				

Sample ID **N024037-001CMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115090**
Client ID: **ZZZZZZ**	Batch ID: **R115090**	TestNo: **SM4500-NO3**		Analysis Date: **5/5/2017**	SeqNo: **2637411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.559	0.050	0.5000	0	112	75	125	0.5014	10.9	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R115137**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **PBW**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639143**

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

Sample ID **LCS-R115137**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **LCSW**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.532	0.050	0.5000	0	106	85	115				

Sample ID **N024050-002ADUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **ZZZZZZ**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.475	0.50						3.740	7.35	20	

Sample ID **N024050-002AMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **ZZZZZZ**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.214	0.50	5.000	3.740	89.5	75	125				

Sample ID **N024050-002AMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **ZZZZZZ**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.497	0.50	5.000	3.740	95.1	75	125	8.214	3.39	20	

Qualifiers:

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

Calculations are based on raw values

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024037
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024037-001

Client Sample ID: MW-34-100-Q217
Collection Date: 4/27/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.1	0.025	0.10		µg/L	1	5/4/2017 12:38 PM
Manganese	120	0.056	0.50		µg/L	1	5/4/2017 12:38 PM
Molybdenum	34	0.19	2.5		µg/L	5	5/4/2017 09:35 PM
Selenium	ND	0.14	2.5		µg/L	5	5/4/2017 09:35 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 9:12:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	1.3	0.025	0.10		µg/L	1	5/4/2017 12:43 PM
Manganese	41	0.056	0.50		µg/L	1	5/4/2017 12:43 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-34-080-EB-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 9:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/4/2017 12:49 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 12:49 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024037
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024037-004

Client Sample ID: MW-44-115-Q217
Collection Date: 4/27/2017 10:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	5.8	0.025	0.10		µg/L	1	5/4/2017 12:54 PM
Manganese	5.4	0.056	0.50		µg/L	1	5/4/2017 12:54 PM
Molybdenum	98	0.19	2.5		µg/L	5	5/4/2017 09:46 PM
Selenium	ND	0.14	2.5		µg/L	5	5/4/2017 09:46 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	3.7	0.025	0.10		µg/L	1	5/4/2017 01:00 PM
Manganese	160	0.056	0.50		µg/L	1	5/4/2017 01:00 PM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-070-EB-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/4/2017 01:07 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 01:07 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 10:57:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	3.0	0.025	0.10		µg/L	1	5/4/2017 01:11 PM
Manganese	210	0.28	2.5		µg/L	5	5/4/2017 09:57 PM
Molybdenum	13	0.039	0.50		µg/L	1	5/4/2017 01:11 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2017 01:11 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-44-125-EB-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:05:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/4/2017 01:28 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 01:28 PM
Molybdenum	ND	0.039	0.50		µg/L	1	5/4/2017 01:28 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2017 01:28 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-100-2Q17
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	5.1	0.025	0.10		µg/L	1	5/4/2017 01:34 PM
Manganese	260	0.28	2.5		µg/L	5	5/4/2017 10:03 PM
Molybdenum	22	0.039	0.50		µg/L	1	5/4/2017 01:34 PM
Selenium	ND	0.14	2.5		µg/L	5	5/4/2017 10:03 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-907-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 12:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	5.0	0.025	0.10		µg/L	1	5/4/2017 01:39 PM
Manganese	250	0.28	2.5		µg/L	5	5/4/2017 10:09 PM
Molybdenum	23	0.039	0.50		µg/L	1	5/4/2017 01:39 PM
Selenium	ND	0.028	0.50		µg/L	1	5/4/2017 01:39 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-36-090-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:53:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	5.5	0.025	0.10		µg/L	1	5/4/2017 01:45 PM
Manganese	170	0.056	0.50		µg/L	1	5/4/2017 01:45 PM

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-39-100-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 12:58:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	2.0	0.025	0.10		µg/L	1	5/4/2017 01:50 PM
Manganese	6.9	0.056	0.50		µg/L	1	5/4/2017 01:50 PM
Molybdenum	6.5	0.19	2.5		µg/L	5	5/4/2017 10:14 PM
Selenium	ND	0.14	2.5		µg/L	5	5/4/2017 10:14 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024037
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024037-013

Client Sample ID: MW-74-240-Q217
Collection Date: 4/27/2017 8:27:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	9.7	0.025	0.10		µg/L	1	5/4/2017 01:56 PM
Manganese	8.7	0.056	0.50		µg/L	1	5/4/2017 01:56 PM
Molybdenum	27	0.039	0.50		µg/L	1	5/4/2017 01:56 PM
Selenium	1.2	0.028	0.50		µg/L	1	5/4/2017 01:56 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-070-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:53:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Molybdenum	35	0.039	0.50		µg/L	1	5/4/2017 02:02 PM
Selenium	5.4	0.028	0.50		µg/L	1	5/4/2017 02:02 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-100-Q217
Lab Order:	N024037	**Collection Date:**	4/27/2017 11:12:00 AM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024037-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Molybdenum	4.3	0.039	0.50		µg/L	1	5/4/2017 02:07 PM
Selenium	5.9	0.028	0.50		µg/L	1	5/4/2017 02:07 PM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62100**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **PBW**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.092	0.50									
Selenium	0.061	0.50									

Sample ID **LCS-62100**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **LCSW**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.424	0.10	10.00	0	94.2	85	115				
Manganese	95.657	0.50	100.0	0	95.7	85	115				
Molybdenum	8.955	0.50	10.00	0	89.5	85	115				
Selenium	10.120	0.50	10.00	0	101	85	115				

Sample ID **N023999-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.693	0.10	10.00	1.019	96.7	75	125				
Manganese	97.388	0.50	100.0	11.02	86.4	75	125				
Molybdenum	18.162	0.50	10.00	6.358	118	75	125				
Selenium	32.321	0.50	10.00	23.67	86.5	75	125				

Sample ID **N023999-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.962	0.10	10.00	1.019	99.4	75	125	10.69	2.48	20	

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024037
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N023999-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115048
Client ID:	ZZZZZZ	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.880	0.50	100.0	11.02	85.9	75	125	97.39	0.523	20	
Molybdenum	18.156	0.50	10.00	6.358	118	75	125	18.16	0.0350	20	
Selenium	32.238	0.50	10.00	23.67	85.7	75	125	32.32	0.257	20	

Qualifiers:

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

CHAIN OF CUSTODY RECORD

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

Page 1 of 2

| | | |

ASSET Laboratories

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

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

Cooler Received/Opened On:	4/27/2017	Workorder:	N024037
Rep sample Temp (Deg C):	1.8/2.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

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

Comments:

For:

Checklist Completed By: MBC 5/3/2017

Reviewed By: MBC 5/5/2017

ASSET Laboratories

WORK ORDER Summary

28-Apr-17

WorkOrder: N024037

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/27/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024037-001A	MW-34-100-Q217	4/27/2017 8:55:00 AM	5/11/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-001B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-001C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-002A	MW-34-080-Q217	4/27/2017 9:12:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-002B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-003A	MW-34-080-EB-Q217	4/27/2017 9:17:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-003B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-004A	MW-44-115-Q217	4/27/2017 10:06:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-004B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-004C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-005A	MW-44-070-Q217	4/27/2017 10:10:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-005B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Apr-17

WorkOrder: N024037

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/27/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024037-005B	MW-44-070-Q217	4/27/2017 10:10:00 AM	5/11/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-006A	MW-44-070-EB-Q217	4/27/2017 10:20:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-006B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-007A	MW-44-125-Q217	4/27/2017 10:57:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-007B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-007C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-008A	MW-44-125-EB-Q217	4/27/2017 11:05:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-008B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-008C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-009A	MW-36-100-2Q17	4/27/2017 11:52:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-009B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-009C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-010A	MW-907-Q217	4/27/2017 12:02:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Apr-17

WorkOrder: N024037

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/27/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024037-010B	MW-907-Q217	4/27/2017 12:02:00 PM	5/11/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-010C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-011A	MW-36-090-Q217	4/27/2017 11:53:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-011B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-012A	MW-39-100-Q217	4/27/2017 12:58:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-012B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-012C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-013A	MW-74-240-Q217	4/27/2017 8:27:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-013B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-013C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-014A	MW-20-070-Q217	4/27/2017 11:53:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-014B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Apr-17

WorkOrder: N024037

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/27/2017

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

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024037-014B	MW-20-070-Q217	4/27/2017 11:53:00 AM	5/11/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-014C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-015A	MW-20-100-Q217	4/27/2017 11:12:00 AM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024037-015B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024037-015C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024037-016A	FOLDER	5/11/2017	5/11/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/11/2017		Folder	Folder	☐	☐	☐	LAB

May 15, 2017

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

TEL: (916) 786-3302
FAX:

Workorder No.: N024038

RE: PG&E Topock - GMP, RC000753.801A

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 27, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

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

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

Sincerely,

Nancy Ribucas for

Puri Romualdo
Laboratory Director

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

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N024038

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

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

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

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

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N024038-005, N024038-006, N24038-007, N024038-008, N024038-009, N024038-010 and N024038-014 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024038-001, N024038-002, N024038-006, N024038-007, N024038-008, N024038-009, N024038-010 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N023999-001B-MS N023999-001B-MSD, N024038-004B-MS and N024038-004B-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *15-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801A
Lab Order: N024038
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024038-001A	MW-902-Q217	Groundwater	4/27/2017 1:11:00 PM	4/27/2017	5/15/2017
N024038-001B	MW-902-Q217	Groundwater	4/27/2017 1:11:00 PM	4/27/2017	5/15/2017
N024038-001C	MW-902-Q217	Groundwater	4/27/2017 1:11:00 PM	4/27/2017	5/15/2017
N024038-002A	MW-20-130-Q217	Groundwater	4/27/2017 1:06:00 PM	4/27/2017	5/15/2017
N024038-002B	MW-20-130-Q217	Groundwater	4/27/2017 1:06:00 PM	4/27/2017	5/15/2017
N024038-002C	MW-20-130-Q217	Groundwater	4/27/2017 1:06:00 PM	4/27/2017	5/15/2017
N024038-003A	MW-31-060-Q217	Groundwater	4/27/2017 2:19:00 PM	4/27/2017	5/15/2017
N024038-003B	MW-31-060-Q217	Groundwater	4/27/2017 2:19:00 PM	4/27/2017	5/15/2017
N024038-004A	MW-905-Q217	Groundwater	4/27/2017 2:24:00 PM	4/27/2017	5/15/2017
N024038-004B	MW-905-Q217	Groundwater	4/27/2017 2:24:00 PM	4/27/2017	5/15/2017
N024038-005A	MW-52S-Q217	Groundwater	4/27/2017 2:17:00 PM	4/27/2017	5/15/2017
N024038-005B	MW-52S-Q217	Groundwater	4/27/2017 2:17:00 PM	4/27/2017	5/15/2017
N024038-006A	MW-53D-Q217	Groundwater	4/27/2017 2:24:00 PM	4/27/2017	5/15/2017
N024038-006B	MW-53D-Q217	Groundwater	4/27/2017 2:24:00 PM	4/27/2017	5/15/2017
N024038-007A	MW-910-Q217	Groundwater	4/27/2017 2:34:00 PM	4/27/2017	5/15/2017
N024038-007B	MW-910-Q217	Groundwater	4/27/2017 2:34:00 PM	4/27/2017	5/15/2017
N024038-008A	MW-52M-Q217	Groundwater	4/27/2017 2:44:00 PM	4/27/2017	5/15/2017
N024038-008B	MW-52M-Q217	Groundwater	4/27/2017 2:44:00 PM	4/27/2017	5/15/2017
N024038-009A	MW-52D-Q217	Groundwater	4/27/2017 3:18:00 PM	4/27/2017	5/15/2017
N024038-009B	MW-52D-Q217	Groundwater	4/27/2017 3:18:00 PM	4/27/2017	5/15/2017
N024038-010A	MW-53M-Q217	Groundwater	4/27/2017 3:15:00 PM	4/27/2017	5/15/2017
N024038-010B	MW-53M-Q217	Groundwater	4/27/2017 3:15:00 PM	4/27/2017	5/15/2017
N024038-011A	MW-705-Q217	Groundwater	4/27/2017 4:00:00 PM	4/27/2017	5/15/2017
N024038-012A	MW-706-Q217	Groundwater	4/27/2017 4:00:00 PM	4/27/2017	5/15/2017
N024038-013A	MW-707-Q217	Groundwater	4/27/2017 2:30:00 PM	4/27/2017	5/15/2017
N024038-014A	MW-32-035-Q217	Groundwater	4/27/2017 3:32:00 PM	4/27/2017	5/15/2017
N024038-014B	MW-32-035-Q217	Groundwater	4/27/2017 3:32:00 PM	4/27/2017	5/15/2017
N024038-015A	MW-32-035-EB-Q217	Groundwater	4/27/2017 4:00:00 PM	4/27/2017	5/15/2017
N024038-015B	MW-32-035-EB-Q217	Groundwater	4/27/2017 4:00:00 PM	4/27/2017	5/15/2017

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ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7400	66	200		µg/L	1000	5/2/2017 10:58 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170504C**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	7600	0.97	50		µg/L	50	5/4/2017 10:48 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7300	66	200		µg/L	1000	5/2/2017 11:17 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504C**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	8000	0.97	50		µg/L	50	5/4/2017 10:59 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	390	6.6	20		µg/L	100	5/2/2017 12:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504C**	QC Batch: **62100**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	430	0.096	5.0		µg/L	5	5/4/2017 11:04 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	400	6.6	20		µg/L	100	5/2/2017 12:23 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170508A**	QC Batch: **62101**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	430	0.096	5.0		µg/L	5	5/8/2017 06:26 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/2/2017 01:57 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508A**	QC Batch: **62101**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 06:48 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/2/2017 02:16 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508A**	QC Batch: **62101**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 06:54 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:34:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/2/2017 02:35 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170510B**	QC Batch: **62101**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/10/2017 11:15 AM

Qualifiers:

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

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024038
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024038-008

Client Sample ID: MW-52M-Q217
Collection Date: 4/27/2017 2:44:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A** QC Batch: **R115022**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/2/2017 04:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 07:16 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/2/2017 05:16 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510B**	QC Batch: **62101**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/10/2017 11:43 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 3:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/2/2017 05:35 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170510B**	QC Batch: **62101**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/10/2017 11:49 AM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-705-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2017 06:22 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-706-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2017 06:41 PM

Qualifiers:

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

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-707-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2017 07:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024038
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024038-014

Client Sample ID: MW-32-035-Q217
Collection Date: 4/27/2017 3:32:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/3/2017 05:24 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 07:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-EB-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170502A**	QC Batch: **R115022**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/2/2017 07:38 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170508A**	QC Batch: **62101**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 07:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115022	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115022		
Client ID:	PBW	Batch ID:	R115022	TestNo:	EPA 218.6			Analysis Date:	5/2/2017	SeqNo:	2635217		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R115022	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115022		
Client ID:	LCSW	Batch ID:	R115022	TestNo:	EPA 218.6			Analysis Date:	5/2/2017	SeqNo:	2635218		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.064	0.20	5.000	0	101	90	110						

Sample ID	N024038-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115022		
Client ID:	ZZZZZZ	Batch ID:	R115022	TestNo:	EPA 218.6			Analysis Date:	5/2/2017	SeqNo:	2635223		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	12646.400	200	5000	7371	106	90	110						

Sample ID	N024038-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115022		
Client ID:	ZZZZZZ	Batch ID:	R115022	TestNo:	EPA 218.6			Analysis Date:	5/2/2017	SeqNo:	2635225		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	12553.100	200	5000	7275	106	90	110						

Sample ID	N024051-002ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115022		
Client ID:	ZZZZZZ	Batch ID:	R115022	TestNo:	EPA 218.6			Analysis Date:	5/2/2017	SeqNo:	2635226		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1120.570	20						1126	0.468	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024038-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115022**
Client ID: **ZZZZZZ**	Batch ID: **R115022**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2017**	SeqNo: **2635230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	906.650	20	500.0	393.9	103	90	110				

Sample ID **N024038-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115022**
Client ID: **ZZZZZZ**	Batch ID: **R115022**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2017**	SeqNo: **2635232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	916.230	20	500.0	403.2	103	90	110				

Sample ID **N024038-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115022**
Client ID: **ZZZZZZ**	Batch ID: **R115022**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2017**	SeqNo: **2635236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.973	1.0	5.000	0	99.4	90	110				

Sample ID **N024038-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115022**
Client ID: **ZZZZZZ**	Batch ID: **R115022**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2017**	SeqNo: **2635238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.823	1.0	5.000	0	96.5	90	110				

Sample ID **N024038-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115022**
Client ID: **ZZZZZZ**	Batch ID: **R115022**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2017**	SeqNo: **2635240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12475.800	200	5000	7371	102	90	110	12650	1.36	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024038-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115022**
Client ID: **ZZZZZZ** Batch ID: **R115022** TestNo: **EPA 218.6** Analysis Date: **5/2/2017** SeqNo: **2635244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.978	1.0	5.000	0	99.6	90	110				

Sample ID **N024038-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115022**
Client ID: **ZZZZZZ** Batch ID: **R115022** TestNo: **EPA 218.6** Analysis Date: **5/2/2017** SeqNo: **2635246**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.801	1.0	5.000	0	96.0	90	110				

Sample ID **N024038-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115022**
Client ID: **ZZZZZZ** Batch ID: **R115022** TestNo: **EPA 218.6** Analysis Date: **5/2/2017** SeqNo: **2635248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.906	1.0	5.000	0	98.1	90	110				

Sample ID **N024038-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115022**
Client ID: **ZZZZZZ** Batch ID: **R115022** TestNo: **EPA 218.6** Analysis Date: **5/2/2017** SeqNo: **2635249**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.668	1.0	5.000	0	93.4	90	110				

Sample ID **N024038-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115022**
Client ID: **ZZZZZZ** Batch ID: **R115022** TestNo: **EPA 218.6** Analysis Date: **5/2/2017** SeqNo: **2635253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024038-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115022**
Client ID: **ZZZZZZ**	Batch ID: **R115022**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2017**	SeqNo: **2635255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N024038-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115022**
Client ID: **ZZZZZZ**	Batch ID: **R115022**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2017**	SeqNo: **2635257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Sample ID **N024038-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115022**
Client ID: **ZZZZZZ**	Batch ID: **R115022**	TestNo: **EPA 218.6**		Analysis Date: **5/2/2017**	SeqNo: **2635259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115040	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	PBW	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636207

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R115040	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	LCSW	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636208

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	0.20	5.000	0	101	90	110				

Sample ID	N024053-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636210

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0.07910	100	90	110				

Sample ID	N024053-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636212

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.029	0.20	1.000	0	103	90	110				

Sample ID	N024053-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636214

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.053	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024053-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636216

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID	N024053-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.031	0.20	1.000	0	103	90	110				

Sample ID	N024053-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636222

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.061	1.0	5.000	0	101	90	110				

Sample ID	N024053-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.156	1.0	25.00	38.34	103	90	110				

Sample ID	N024053-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636228

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12069.800	200	5000	7047	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024053-015AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115040**
Client ID: **ZZZZZZ** Batch ID: **R115040** TestNo: **EPA 218.6** Analysis Date: **5/3/2017** SeqNo: **2636229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12242.100	200	5000	7047	104	90	110	12070	1.42	20	

Sample ID **N024053-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115040**
Client ID: **ZZZZZZ** Batch ID: **R115040** TestNo: **EPA 218.6** Analysis Date: **5/3/2017** SeqNo: **2636236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N024053-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115040**
Client ID: **ZZZZZZ** Batch ID: **R115040** TestNo: **EPA 218.6** Analysis Date: **5/3/2017** SeqNo: **2636238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.016	0.20	1.000	0	102	90	110				

Sample ID **N024038-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115040**
Client ID: **ZZZZZZ** Batch ID: **R115040** TestNo: **EPA 218.6** Analysis Date: **5/3/2017** SeqNo: **2636240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.045	1.0	5.000	0	101	90	110				

Sample ID **N024053-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115040**
Client ID: **ZZZZZZ** Batch ID: **R115040** TestNo: **EPA 218.6** Analysis Date: **5/3/2017** SeqNo: **2636244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.051	1.0	5.000	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024053-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636246

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.826	1.0	5.000	0	96.5	90	110				

Sample ID	N024053-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.308	1.0	5.000	1.211	102	90	110				

Sample ID	N024053-009ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.455	1.0						38.34	0.303	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62100	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	PBW	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636391

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.042	1.0									

Sample ID	LCS-62100	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	LCSW	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636392

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.075	1.0	10.00	0	101	85	115				

Sample ID	N023999-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	ZZZZZZ	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636399

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	462.139	5.0	10.00	456.3	58.2	75	125				S

Sample ID	N023999-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115047
Client ID:	ZZZZZZ	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	452.989	5.0	10.00	456.3	-33.3	75	125	462.1	2.00	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-62101**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115141**
Client ID: **PBW**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-62101**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115141**
Client ID: **LCSW**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.424	1.0	10.00	0	94.2	85	115				

Sample ID **N024038-004B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2017**	SeqNo: **2639499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	391.835	5.0	10.00	429.9	-380	75	125				S

Sample ID **N024038-004B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2017**	SeqNo: **2639500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	387.159	5.0	10.00	429.9	-427	75	125	391.8	1.20	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-902-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 1:11:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E** QC Batch: **R115090**			PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	5/5/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170505E**	QC Batch: **R115090**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	11	0.22	0.50		mg/L	10	5/5/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115090	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	PBW	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637406

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115090	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	LCSW	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637407

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.4	85	115				

Sample ID	N024037-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	ZZZZZZ	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637409

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0	0	20	

Sample ID	N024037-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	ZZZZZZ	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637410

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.501	0.050	0.5000	0	100	75	125				

Sample ID	N024037-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115090
Client ID:	ZZZZZZ	Batch ID:	R115090	TestNo:	SM4500-NO3			Analysis Date:	5/5/2017	SeqNo:	2637411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.559	0.050	0.5000	0	112	75	125	0.5014	10.9	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024038
Project: PG&E Topock - GMP, RC000753.801A
Lab ID: N024038-001

Client Sample ID: MW-902-Q217
Collection Date: 4/27/2017 1:11:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	4.5	0.025	0.10		µg/L	1	5/4/2017 02:13 PM
Manganese	1.7	0.056	0.50		µg/L	1	5/4/2017 02:13 PM
Molybdenum	39	0.19	2.5		µg/L	5	5/4/2017 10:42 PM
Selenium	26	0.14	2.5		µg/L	5	5/4/2017 10:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-20-130-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 1:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	4.8	0.025	0.10		µg/L	1	5/4/2017 02:18 PM
Manganese	2.4	0.056	0.50		µg/L	1	5/4/2017 02:18 PM
Molybdenum	43	0.19	2.5		µg/L	5	5/4/2017 10:53 PM
Selenium	25	0.14	2.5		µg/L	5	5/4/2017 10:53 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-31-060-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:19:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170504B**	QC Batch: **62100**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	1.1	0.025	0.10		µg/L	1	5/4/2017 02:35 PM
Manganese	ND	0.056	0.50		µg/L	1	5/4/2017 02:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-905-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	1.1	0.025	0.10		µg/L	1	5/8/2017 06:21 PM
Manganese	1.0	0.056	0.50		µg/L	1	5/8/2017 06:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52S-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:17:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	0.36	0.025	0.10		µg/L	1	5/8/2017 06:48 PM
Manganese	1200	0.56	5.0		µg/L	10	5/10/2017 10:57 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53D-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	3.3	0.12	0.50		µg/L	5	5/10/2017 11:04 AM
Manganese	1100	0.56	5.0		µg/L	10	5/10/2017 11:10 AM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-910-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:34:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	2.9	0.12	0.50		µg/L	5	5/10/2017 11:15 AM
Manganese	1100	0.56	5.0		µg/L	10	5/10/2017 11:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52M-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 2:44:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.12	0.50		µg/L	5	5/10/2017 11:38 AM
Manganese	170	0.056	0.50		µg/L	1	5/8/2017 07:16 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-52D-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	2.0	0.12	0.50		µg/L	5	5/10/2017 11:43 AM
Manganese	290	0.28	2.5		µg/L	5	5/10/2017 11:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-53M-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 3:15:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	0.67	0.12	0.50		µg/L	5	5/10/2017 11:49 AM
Manganese	460	0.28	2.5		µg/L	5	5/10/2017 11:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 3:32:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	26	0.025	0.10		µg/L	1	5/8/2017 07:33 PM
Manganese	730	0.28	2.5		µg/L	5	5/10/2017 11:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-32-035-EB-Q217
Lab Order:	N024038	**Collection Date:**	4/27/2017 4:00:00 PM
Project:	PG&E Topock - GMP, RC000753.801A	**Matrix:**	GROUNDWATER
Lab ID:	N024038-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/8/2017 07:39 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 07:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62100**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **PBW**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.092	0.50									
Selenium	0.061	0.50									

Sample ID **LCS-62100**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **LCSW**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636472**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.424	0.10	10.00	0	94.2	85	115				
Manganese	95.657	0.50	100.0	0	95.7	85	115				
Molybdenum	8.955	0.50	10.00	0	89.5	85	115				
Selenium	10.120	0.50	10.00	0	101	85	115				

Sample ID **N023999-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.693	0.10	10.00	1.019	96.7	75	125				
Manganese	97.388	0.50	100.0	11.02	86.4	75	125				
Molybdenum	18.162	0.50	10.00	6.358	118	75	125				
Selenium	32.321	0.50	10.00	23.67	86.5	75	125				

Sample ID **N023999-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115048**
Client ID: **ZZZZZZ**	Batch ID: **62100**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/4/2017**	SeqNo: **2636480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.962	0.10	10.00	1.019	99.4	75	125	10.69	2.48	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N023999-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115048
Client ID:	ZZZZZZ	Batch ID:	62100	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/4/2017	SeqNo:	2636480

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	96.880	0.50	100.0	11.02	85.9	75	125	97.39	0.523	20	
Molybdenum	18.156	0.50	10.00	6.358	118	75	125	18.16	0.0350	20	
Selenium	32.238	0.50	10.00	23.67	85.7	75	125	32.32	0.257	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62101**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115142**
Client ID: **PBW**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639424**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.132	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62101**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115142**
Client ID: **LCSW**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.538	0.10	10.00	0	95.4	85	115				
Manganese	96.825	0.50	100.0	0	96.8	85	115				
Molybdenum	9.965	0.50	10.00	0	99.7	85	115				
Selenium	8.890	0.50	10.00	0	88.9	85	115				

Sample ID **N024038-004B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115142**
Client ID: **ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.560	0.10	10.00	1.130	94.3	75	125				
Manganese	87.555	0.50	100.0	1.034	86.5	75	125				
Molybdenum	25.745	0.50	10.00	15.01	107	75	125				
Selenium	10.822	0.50	10.00	2.111	87.1	75	125				

Sample ID **N024038-004B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115142**
Client ID: **ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.905	0.10	10.00	1.130	97.8	75	125	10.56	3.21	20	
Manganese	86.709	0.50	100.0	1.034	85.7	75	125	87.56	0.971	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024038
Project: PG&E Topock - GMP, RC000753.801A

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024038-004B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	25.961	0.50	10.00	15.01	110	75	125	25.75	0.835	20	
Selenium	10.539	0.50	10.00	2.111	84.3	75	125	10.82	2.65	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Contact us
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNB; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State: CA
Address: Roseville, CA 95661	Email: [redacted]	Address	Sample Receipt Condition: 1 Chilled Y; 2 Headspace; 3 Container Intact ✓; 4 Seal Present; 5 IR number 2; 6 Method of Cooling: ICE
Phone: 916-786-3302 / Fax	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@arcadis.com / P.O #	Sample Temp: 1.8, 2.3 °C
Submitted By: Alexis McIntyre	Phone: 916-786-3302 / Fax	Phone: 949-727-1400, ext 200 / Fax	Courier: LAB
Title: Geologist 1	Sampled By: Jacob Martling	Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid	Tracking No
Signature: / Date: 4/27/17	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
I hereby authorize ASSET Labs to perform the tests indicated below.	Signature: / Date: 4/27/17		
Project Name: PG&E Topock - GMP			
Project Number: RC000753.801A			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Metals Dissolved (6020FF) As HNO3	Metals Dissolved (6020FF) Mo: HNO3	Metals Dissolved (6020FF) Se HNO3	Metals Dissolved (6020FF) Cr HNO3	Metals Dissolved (6020FF) Mn HNO3	Nitrate/Nitrite (SM4500NO3) Nitrate H2SO4	Calcium Dissolved (EPA 200.7) HNO3	IRON Dissolved (EPA 200.7) HNO3	Sodium Dissolved (EPA 200.7) HNO3	Boron Dissolved (EPA 200.7) HNO3	Magnesium Dissolved (EPA 200.7) HNO3	Chloride E300	Alkalinity (SM2320B) Total as CaCO3	TDS SM2540C	Bromide E300	Sulfate E300	Specific conductance 120.1	pH (SM4500-HB)	Oxygen & Deut Stable Isotopes	Diss Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						250 mL poly	2 X 250 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	125 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly						
1	N024038 - 01	MW-902-Q217	4/27/17	1311		X		X	X	X	X	X	X														m	3	P	BNS	
2	- 02	MW-20-130-Q217	4/27/17	1306		X		X	X	X	X	X	X														m	3	P	BNS	
3	- 03	MW-31-060-Q217	4/27/17	1419		X		X			X	X															E	2	P	BNS	
4	- 04	MW-905-Q217	4/27/17	1424		X		X			X	X															E	2	P	BNS	
5	- 05	MW-52S-Q217	4/27/17	1417			X	X			X	X															E	3	P	BNS	
6	- 06	MW-53D-Q217	4/27/17	1424			X	X			X	X															E	3	P	BNS	
7	- 07	MW-910-Q217	4/27/17	1434			X	X			X	X															E	3	P	BNS	
8	- 08	MW-52M-Q217	4/27/17	1444			X	X			X	X															E	3	P	BNS	
9	- 09	MW-52D-Q217	4/27/17	1518			X	X			X	X															E	3	P	BNS	
1	- 10	MW-53M-Q217	4/27/17	1515			X	X			X	X															E	3	P	BNS	
10	- 11	MW-705-Q217	4/27/17	1600		X																					E	1	P	BNS	
11	- 12	MW-706-Q217	4/27/17	1600		X																					E	1	P	BNS	
12	- 13	MW-707-Q217	4/27/17	1430		X																					E	1	P	BNS	
13	- 14	MW-32-035-Q217	4/27/17	1532			X	X			X	X															E	3	P	BNS	
14	- 15	MW-32-035-EB-Q217	4/27/17	1500		X		X			X	X															E	2	P	BNS	

Relinquished by (Signature and Printed Name): [signature] Date/Time: 4/27/17 1648
Received by (Signature and Printed Name): [signature] Date/Time: 4/27/17 @ 1648
Relinquished by (Signature and Printed Name): [signature] Date/Time: 4/27/17 @1912
Received by (Signature and Printed Name): [signature] Date/Time: 4/27/17 @1912
Relinquished by (Signature and Printed Name): Date/Time:
Received by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for*** Title 22 metals Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms:
All samples will be disposed of 45 days and records will be destroyed in 5 years upon submission of final report.
Regular TAT is 5-7 business days. Surcharges will apply for rush analysis:
Less than 24 Hrs +200% Next Day+100% 2 Workdays+50% 3 Workdays+35 % 4 Workdays+20%
Custom EDD formats will be an additional 5% of the total project price.
Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.

5 Trip Blanks and Equipment Blanks are billable samples.
6 Asset Laboratories is not responsible for samples collected using incorrect methodology.
7 Terms are net 30 days.
8 All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9 For subcontracted analysis, TAT and Surcharges will vary.

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/27/2017	Workorder:	N024038
Rep sample Temp (Deg C):	1.8/2.3	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: MBC 5/3/2017

Reviewed By: MBC 5/5/2017

ASSET Laboratories

WORK ORDER Summary

28-Apr-17

WorkOrder: N024038

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/27/2017

Comments: Run analysis for***: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024038-001A	MW-902-Q217	4/27/2017 1:11:00 PM	5/11/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-001B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-001C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024038-002A	MW-20-130-Q217	4/27/2017 1:06:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-002B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-002C			5/11/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024038-003A	MW-31-060-Q217	4/27/2017 2:19:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-003B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-004A	MW-905-Q217	4/27/2017 2:24:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-004B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-005A	MW-52S-Q217	4/27/2017 2:17:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-005B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Apr-17

WorkOrder: N024038

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/27/2017

Comments: Run analysis for***: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024038-005B	MW-52S-Q217	4/27/2017 2:17:00 PM	5/11/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-006A	MW-53D-Q217	4/27/2017 2:24:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-006B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-007A	MW-910-Q217	4/27/2017 2:34:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-007B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-008A	MW-52M-Q217	4/27/2017 2:44:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-008B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-009A	MW-52D-Q217	4/27/2017 3:18:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-009B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-010A	MW-53M-Q217	4/27/2017 3:15:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-010B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-011A	MW-705-Q217	4/27/2017 4:00:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

28-Apr-17

WorkOrder: N024038

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801A **QC Level:** Level IV **Date Received:** 4/27/2017

Comments: Run analysis for***: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024038-012A	MW-706-Q217	4/27/2017 4:00:00 PM	5/11/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-013A	MW-707-Q217	4/27/2017 2:30:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-014A	MW-32-035-Q217	4/27/2017 3:32:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-014B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-015A	MW-32-035-EB-Q217	4/27/2017 3:00:00 PM	5/11/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024038-015B			5/11/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/11/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024038-016A	FOLDER	5/11/2017	5/11/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/11/2017		Folder	Folder	☐	☐	☐	LAB

May 15, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024053

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 28, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N023998-002B-MS2 and N023998-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N024053-001 (MW-42-055-Q217) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N024053-005, N024053-006, N024053-008 and N024053-010 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N024053-013 and N024053-014 due to precipitation of sample upon the addition of eluent.

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EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024053-005, N024053-006, N024053-009, N024053-010, N024053-013, N024053-014 and N024053-015 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N024053-001 (MW-42-055-Q217) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.3 and 1.4 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N024038-004B-MS, N024038-004B-MSD, N024053-014B-MS and N024053-014BMSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *15-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024053
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024053-001A	MW-42-055-Q217	Groundwater	4/28/2017 8:11:00 AM	4/28/2017	5/15/2017
N024053-001B	MW-42-055-Q217	Groundwater	4/28/2017 8:11:00 AM	4/28/2017	5/15/2017
N024053-002A	MW-42-055-EB-Q217	Groundwater	4/28/2017 8:20:00 AM	4/28/2017	5/15/2017
N024053-002B	MW-42-055-EB-Q217	Groundwater	4/28/2017 8:20:00 AM	4/28/2017	5/15/2017
N024053-003A	MW-42-065-Q217	Groundwater	4/28/2017 8:17:00 AM	4/28/2017	5/15/2017
N024053-003B	MW-42-065-Q217	Groundwater	4/28/2017 8:17:00 AM	4/28/2017	5/15/2017
N024053-004A	MW-42-065-EB-Q217	Groundwater	4/28/2017 8:27:00 AM	4/28/2017	5/15/2017
N024053-004B	MW-42-065-EB-Q217	Groundwater	4/28/2017 8:27:00 AM	4/28/2017	5/15/2017
N024053-005A	MW-27-085-Q217	Groundwater	4/28/2017 8:56:00 AM	4/28/2017	5/15/2017
N024053-005B	MW-27-085-Q217	Groundwater	4/28/2017 8:56:00 AM	4/28/2017	5/15/2017
N024053-005C	MW-27-085-Q217	Groundwater	4/28/2017 8:56:00 AM	4/28/2017	5/15/2017
N024053-006A	MW-904-Q217	Groundwater	4/28/2017 9:06:00 AM	4/28/2017	5/15/2017
N024053-006B	MW-904-Q217	Groundwater	4/28/2017 9:06:00 AM	4/28/2017	5/15/2017
N024053-006C	MW-904-Q217	Groundwater	4/28/2017 9:06:00 AM	4/28/2017	5/15/2017
N024053-007A	MW-27-085-EB-Q217	Groundwater	4/28/2017 9:15:00 AM	4/28/2017	5/15/2017
N024053-007B	MW-27-085-EB-Q217	Groundwater	4/28/2017 9:15:00 AM	4/28/2017	5/15/2017
N024053-007C	MW-27-085-EB-Q217	Groundwater	4/28/2017 9:15:00 AM	4/28/2017	5/15/2017
N024053-008A	MW-22-Q217	Groundwater	4/28/2017 9:00:00 AM	4/28/2017	5/15/2017
N024053-008B	MW-22-Q217	Groundwater	4/28/2017 9:00:00 AM	4/28/2017	5/15/2017
N024053-009A	MW-23-060-Q217	Groundwater	4/28/2017 9:54:00 AM	4/28/2017	5/15/2017
N024053-009B	MW-23-060-Q217	Groundwater	4/28/2017 9:54:00 AM	4/28/2017	5/15/2017
N024053-010A	MW-23-080-2Q17	Groundwater	4/28/2017 9:52:00 AM	4/28/2017	5/15/2017
N024053-010B	MW-23-080-2Q17	Groundwater	4/28/2017 9:52:00 AM	4/28/2017	5/15/2017
N024053-011A	MW-708-Q217	Groundwater	4/28/2017 10:05:00 AM	4/28/2017	5/15/2017
N024053-012A	MW-710-Q217	Groundwater	4/28/2017 10:03:00 AM	4/28/2017	5/15/2017
N024053-013A	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017
N024053-013B	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017
N024053-013C	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017
N024053-013D	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024053
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024053-013E	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017
N024053-014A	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-014B	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-014C	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-014D	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-014E	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-015A	MW-50-200-Q217	Groundwater	4/28/2017 8:28:00 AM	4/28/2017	5/15/2017
N024053-015B	MW-50-200-Q217	Groundwater	4/28/2017 8:28:00 AM	4/28/2017	5/15/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170428A**	QC Batch: **R114969**			PrepDate			Analyst: **LR**
Specific Conductance	7500	0.10	0.10		umhos/cm	1	4/28/2017 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170428A**	QC Batch: **R114969**			PrepDate			Analyst: **LR**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	4/28/2017 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N024053-014EDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **114969**
Client ID:	**ZZZZZZ**	Batch ID: **R114969**	TestNo: **EPA 120.1**		Analysis Date: **4/28/2017**	SeqNo: **2632963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7600.000	0.10						7620	0.263	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170428C**	QC Batch: **R114971**			PrepDate			Analyst: **LR**
pH	6.9	0.10	0.10	H	pH Units	1	4/28/2017 02:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2017 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170428C**	QC Batch: **R114971**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	4/28/2017 02:00 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/28/2017 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024053-013EDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **114971**
Client ID: **ZZZZZZ** Batch ID: **R114971** TestNo: **SM4500-H+B** Analysis Date: **4/28/2017** SeqNo: **2632969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.870	0.10						6.880	0.145	10	H
Temp. at time of pH Analysis	18.400	0.10						18.50	0.542	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170501D**	QC Batch: **62103**				PrepDate	**5/1/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	5/1/2017 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170501D**	QC Batch: **62103**				PrepDate	**5/1/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	5/1/2017 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-62103**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/1/2017**	RunNo: **114976**
Client ID: **LCSW**	Batch ID: **62103**	TestNo: **SM2540C**		Analysis Date: **5/1/2017**	SeqNo: **2634030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	986.000	10	1000	0	98.6	80	120				

Sample ID **MB-62103**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/1/2017**	RunNo: **114976**
Client ID: **PBW**	Batch ID: **62103**	TestNo: **SM2540C**		Analysis Date: **5/1/2017**	SeqNo: **2634031**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N024041-012BDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/1/2017**	RunNo: **114976**
Client ID: **ZZZZZZ**	Batch ID: **62103**	TestNo: **SM2540C**		Analysis Date: **5/1/2017**	SeqNo: **2634036**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	413400.000	2000						401000	3.05	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170504C**	QC Batch: **62096**				PrepDate	**5/1/2017**	Analyst: **CEI**
Calcium	220000	28	500		µg/L	1	5/4/2017 04:28 PM
Iron	ND	1.8	20		µg/L	1	5/4/2017 04:28 PM
Magnesium	30000	4.4	100		µg/L	1	5/4/2017 04:28 PM
Sodium	1500000	1300	25000		µg/L	50	5/10/2017 06:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170504C**	QC Batch: **62096**				PrepDate	**5/1/2017**	Analyst: **CEI**
Calcium	210000	28	500		µg/L	1	5/4/2017 04:34 PM
Iron	ND	1.8	20		µg/L	1	5/4/2017 04:34 PM
Magnesium	29000	4.4	100		µg/L	1	5/4/2017 04:34 PM
Sodium	1400000	1300	25000		µg/L	50	5/10/2017 06:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-62096**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **PBW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	6.975	20									
Magnesium	ND	100									

Sample ID **LCS1-62096**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **LCSW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9495.066	500	10000	0	95.0	85	115				
Iron	105.401	20	100.0	0	105	85	115				
Magnesium	9795.730	100	10000	0	98.0	85	115				

Sample ID **N023998-001B-MS1**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	125011.400	500	10000	116900	80.6	75	125				
Iron	113.273	20	100.0	6.352	107	75	125				
Magnesium	34100.428	100	10000	25140	89.6	75	125				

Sample ID **N023998-001B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124686.234	500	10000	116900	77.4	75	125	125000	0.260	20	
Iron	107.784	20	100.0	6.352	101	75	125	113.3	4.97	20	
Magnesium	33548.649	100	10000	25140	84.1	75	125	34100	1.63	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-62096**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115123**
Client ID: **PBW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-62096**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115123**
Client ID: **LCSW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19378.056	500	20000	0	96.9	85	115				

Sample ID **N023998-002B-MS2**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115123**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1663449.239	25000	20000	1606000	289	75	125				S

Sample ID **N023998-002B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115123**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1684352.033	25000	20000	1606000	394	75	125	1663000	1.25	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:11:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	28	0.025	0.10		µg/L	1	5/8/2017 07:44 PM
Manganese	18	0.056	0.50		µg/L	1	5/8/2017 07:44 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/8/2017 07:50 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 07:50 PM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	5.7	0.025	0.10		µg/L	1	5/8/2017 07:55 PM
Manganese	290	0.28	2.5		µg/L	5	5/10/2017 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/8/2017 08:01 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 08:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-005

Client Sample ID: MW-27-085-Q217
Collection Date: 4/28/2017 8:56:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.3	0.025	0.10		µg/L	1	5/8/2017 08:06 PM
Manganese	84	0.056	0.50		µg/L	1	5/8/2017 08:06 PM
Molybdenum	17	0.19	2.5		µg/L	5	5/10/2017 12:06 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 12:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-006

Client Sample ID: MW-904-Q217
Collection Date: 4/28/2017 9:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.3	0.025	0.10		µg/L	1	5/8/2017 08:23 PM
Manganese	85	0.056	0.50		µg/L	1	5/8/2017 08:23 PM
Molybdenum	17	0.19	2.5		µg/L	5	5/10/2017 12:11 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 12:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/8/2017 08:29 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 08:29 PM
Molybdenum	ND	0.039	0.50		µg/L	1	5/8/2017 08:29 PM
Selenium	ND	0.028	0.50		µg/L	1	5/8/2017 08:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-22-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	13	0.025	0.10		µg/L	1	5/8/2017 08:34 PM
Manganese	1900	1.4	12		µg/L	25	5/10/2017 12:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-009

Client Sample ID: MW-23-060-Q217
Collection Date: 4/28/2017 9:54:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	3.1	0.12	0.50		µg/L	5	5/10/2017 12:28 PM
Manganese	4.0	0.056	0.50		µg/L	1	5/8/2017 08:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-2Q17
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	4.4	0.12	0.50		µg/L	5	5/10/2017 02:43 PM
Manganese	4.9	0.056	0.50		µg/L	1	5/8/2017 08:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**					PrepDate	**5/1/2017**	Analyst: **CEI**
Manganese	14	0.056	0.50		µg/L	1	5/3/2017 01:46 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170508B** QC Batch: **62101**					PrepDate	**5/1/2017**	Analyst: **CEI**
Manganese	13	0.056	0.50		µg/L	1	5/8/2017 08:51 PM
Molybdenum	21	0.19	2.5		µg/L	5	5/10/2017 12:50 PM
Selenium	4.0	0.028	0.50		µg/L	1	5/8/2017 08:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**					PrepDate	**5/1/2017**	Analyst: **CEI**
Manganese	15	0.056	0.50		µg/L	1	5/3/2017 01:57 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170508B** QC Batch: **62121**					PrepDate	**5/3/2017**	Analyst: **CEI**
Manganese	14	0.056	0.50		µg/L	1	5/8/2017 09:08 PM
Molybdenum	22	0.19	2.5		µg/L	5	5/8/2017 09:13 PM
Selenium	4.8	0.14	2.5		µg/L	5	5/8/2017 09:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-62097**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **PBW**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-62097**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **LCSW**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.118	0.50	100.0	0	99.1	85	115				

Sample ID **N023998-001B-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	222.474	2.5	100.0	109.5	113	75	125				

Sample ID **N023998-001B-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	214.811	2.5	100.0	109.5	105	75	125	222.5	3.51	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-62101	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	PBW	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639424

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.132	0.50									
Selenium	ND	0.50									

Sample ID	LCS-62101	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	LCSW	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.538	0.10	10.00	0	95.4	85	115				
Manganese	96.825	0.50	100.0	0	96.8	85	115				
Molybdenum	9.965	0.50	10.00	0	99.7	85	115				
Selenium	8.890	0.50	10.00	0	88.9	85	115				

Sample ID	N024038-004B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639429

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.560	0.10	10.00	1.130	94.3	75	125				
Manganese	87.555	0.50	100.0	1.034	86.5	75	125				
Molybdenum	25.745	0.50	10.00	15.01	107	75	125				
Selenium	10.822	0.50	10.00	2.111	87.1	75	125				

Sample ID	N024038-004B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.905	0.10	10.00	1.130	97.8	75	125	10.56	3.21	20	
Manganese	86.709	0.50	100.0	1.034	85.7	75	125	87.56	0.971	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024038-004B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	25.961	0.50	10.00	15.01	110	75	125	25.75	0.835	20	
Selenium	10.539	0.50	10.00	2.111	84.3	75	125	10.82	2.65	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-62121	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115142
Client ID:	PBW	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639454

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Sample ID	LCS-62121	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115142
Client ID:	LCSW	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.707	0.10	10.00	0	97.1	85	115				
Manganese	96.249	0.50	100.0	0	96.2	85	115				
Molybdenum	10.127	0.50	10.00	0	101	85	115				
Selenium	9.681	0.50	10.00	0	96.8	85	115				

Sample ID	N024053-014B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639461

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.849	0.10	10.00	2.586	92.6	75	125				
Manganese	99.977	0.50	100.0	14.46	85.5	75	125				

Sample ID	N024053-014B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.377	0.10	10.00	2.586	97.9	75	125	11.85	4.35	20	
Manganese	98.793	0.50	100.0	14.46	84.3	75	125	99.98	1.19	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024053-014B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115146
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.107	2.5	10.00	22.38	97.3	75	125				
Selenium	14.659	2.5	10.00	4.753	99.1	75	125				

Sample ID	N024053-014B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115146
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.625	2.5	10.00	22.38	92.5	75	125	32.11	1.51	20	
Selenium	14.122	2.5	10.00	4.753	93.7	75	125	14.66	3.73	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-001

Client Sample ID: MW-42-055-Q217
Collection Date: 4/28/2017 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 10:43 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	1.3	0.019	1.0		µg/L	1	5/8/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 11:03 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 07:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 11:22 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 07:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 11:41 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-005

Client Sample ID: MW-27-085-Q217
Collection Date: 4/28/2017 8:56:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/3/2017 06:04 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/3/2017 06:23 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 12:57 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-008

Client Sample ID: MW-22-Q217
Collection Date: 4/28/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/3/2017 01:35 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:54:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	38	0.33	1.0		µg/L	5	5/3/2017 02:12 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	34	0.019	1.0		µg/L	1	5/8/2017 08:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-2Q17
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.2	0.33	1.0		µg/L	5	5/3/2017 06:42 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-708-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:05:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A**	QC Batch: **R115040**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 04:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-710-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A**	QC Batch: **R115040**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 04:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503B** QC Batch: **R115041**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	520	6.6	20		µg/L	100	5/3/2017 11:07 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	530	0.096	5.0		µg/L	5	5/3/2017 01:52 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170510B** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	530	0.096	5.0		µg/L	5	5/10/2017 12:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503B** QC Batch: **R115041**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	530	6.6	20		µg/L	100	5/4/2017 12:04 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	530	0.096	5.0		µg/L	5	5/3/2017 02:03 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170508A** QC Batch: **62121**				PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	540	0.096	5.0		µg/L	5	5/8/2017 09:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-50-200-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:28:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A**	QC Batch: **R115040**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7000	66	200		µg/L	1000	5/3/2017 02:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510B**	QC Batch: **62121**			PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	7400	0.97	50		µg/L	50	5/10/2017 01:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-62097	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	PBW	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634672

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62097	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	LCSW	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.004	1.0	10.00	0	100	85	115				

Sample ID	N023998-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634679

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.028	1.0	10.00	0.4171	86.1	75	125				

Sample ID	N023998-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634681

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.4171	91.5	75	125	9.028	5.82	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115040	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040	
Client ID:	PBW	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636207	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		ND	0.20									

Sample ID	LCS-R115040	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040	
Client ID:	LCSW	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636208	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		5.065	0.20	5.000	0	101	90	110				

Sample ID	N024053-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040	
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636210	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.081	0.20	1.000	0.07910	100	90	110				

Sample ID	N024053-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040	
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636212	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.029	0.20	1.000	0	103	90	110				

Sample ID	N024053-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040	
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636214	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium		1.053	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024053-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N024053-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.031	0.20	1.000	0	103	90	110				

Sample ID **N024053-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.061	1.0	5.000	0	101	90	110				

Sample ID **N024053-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.156	1.0	25.00	38.34	103	90	110				

Sample ID **N024053-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12069.800	200	5000	7047	100	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024053-015AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12242.100	200	5000	7047	104	90	110	12070	1.42	20	

Sample ID **N024053-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N024053-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.016	0.20	1.000	0	102	90	110				

Sample ID **N024038-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.045	1.0	5.000	0	101	90	110				

Sample ID **N024053-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.051	1.0	5.000	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024053-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636246

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.826	1.0	5.000	0	96.5	90	110				

Sample ID	N024053-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.308	1.0	5.000	1.211	102	90	110				

Sample ID	N024053-009ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.455	1.0						38.34	0.303	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	LCS-R115041	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041		
Client ID:	LCSW	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636147		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	5.119	0.20	5.000	0	102	90	110						

Sample ID	MB-R115041	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041		
Client ID:	PBW	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636148		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	N024053-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041		
Client ID:	ZZZZZZ	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636162		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1030.660	20	500.0	524.7	101	90	110						

Sample ID	N024053-013AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041		
Client ID:	ZZZZZZ	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636165		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1040.040	20	500.0	524.7	103	90	110	1031	0.906	20			

Sample ID	N024053-013ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041		
Client ID:	ZZZZZZ	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636166		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	539.530	20						524.7	2.79	20			

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024053-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041
Client ID:	ZZZZZZ	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/4/2017	SeqNo:	2636168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1044.570	20	500.0	528.1	103	90	110				

Sample ID	N024054-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041
Client ID:	ZZZZZZ	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2641786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.469	1.0	25.00	10.33	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-62101**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115141**
Client ID: **PBW**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-62101**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115141**
Client ID: **LCSW**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.424	1.0	10.00	0	94.2	85	115				

Sample ID **N024038-004B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2017**	SeqNo: **2639499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	391.835	5.0	10.00	429.9	-380	75	125				S

Sample ID **N024038-004B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2017**	SeqNo: **2639500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	387.159	5.0	10.00	429.9	-427	75	125	391.8	1.20	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-62121**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/3/2017**	RunNo: **115141**
Client ID: **PBW**	Batch ID: **62121**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639387**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.025	1.0									

Sample ID **LCS-62121**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/3/2017**	RunNo: **115141**
Client ID: **LCSW**	Batch ID: **62121**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639388**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.786	1.0	10.00	0	97.9	85	115				

Sample ID **N024053-014B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/3/2017**	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **62121**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2017**	SeqNo: **2639525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	528.347	5.0	10.00	536.9	-85.4	75	125				S

Sample ID **N024053-014B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/3/2017**	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **62121**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2017**	SeqNo: **2639550**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	533.278	5.0	10.00	536.9	-36.1	75	125	528.3	0.929	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170501B**	QC Batch: **R114974**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	5/1/2017 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170501B**	QC Batch: **R114974**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	5/1/2017 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R114974**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **LCSW**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101.770	5.0	100.0	0	102	85	115				

Sample ID **MB-R114974**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **PBW**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N024053-013EDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **ZZZZZZ**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	139.381	5.0						137.2	1.60	30	

Sample ID **N024053-014EMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **ZZZZZZ**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.637	5.0	100.0	157.1	99.6	75	125				

Sample ID **N024053-014EMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **ZZZZZZ**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	261.062	5.0	100.0	157.1	104	75	125	256.6	1.71	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Bromide	ND	0.045	0.50		mg/L	5	5/1/2017 06:37 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Chloride	2100	1.8	250		mg/L	500	5/1/2017 02:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Sulfate	530	0.64	25		mg/L	50	5/1/2017 01:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Bromide	ND	0.045	0.50		mg/L	5	5/1/2017 05:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Chloride	2100	1.8	250		mg/L	500	5/1/2017 07:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Sulfate	510	0.64	25		mg/L	50	5/1/2017 02:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R114990_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	PBW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID	LCS-R114990_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	LCSW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.183	0.10	1.250	0	94.6	90	110				

Sample ID	N024053-013EDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633881

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	0.300	0.50						0.2940	0	20	

Sample ID	N024053-013EMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633882

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.043	0.50	6.250	0.2940	92.0	80	120				

Sample ID	N024053-013EMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633883

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	6.125	0.50	6.250	0.2940	93.3	80	120	6.043	1.36	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R114990_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	PBW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633834

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.127	0.50									

Sample ID	LCS-R114990_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	LCSW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633835

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.965	0.50	2.000	0	98.3	90	110				

Sample ID	N024050-005ADUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633851

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.298	10						49.27	0.0649	20	

Sample ID	N024050-001AMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633854

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	257.115	25	100.0	161.3	95.8	80	120				

Sample ID	N024050-004AMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633855

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.932	10	40.00	60.69	98.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N024050-001AMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633858

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	259.265	25	100.0	161.3	97.9	80	120	257.1	0.833	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R114990_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	PBW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R114990_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	LCSW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633891

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.896	0.50	4.000	0	97.4	90	110				

Sample ID	N024050-005ADUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	70.946	10						71.64	0.971	20	

Sample ID	N024050-001AMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	405.655	25	200.0	213.0	96.3	80	120				

Sample ID	N024050-004AMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633911

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	198.922	10	80.00	117.1	102	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N024050-001AMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633912

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	410.745	25	200.0	213.0	98.9	80	120	405.7	1.25	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:56:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170509B**	QC Batch: **R115137**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/9/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170509B**	QC Batch: **R115137**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/9/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170509B**	QC Batch: **R115137**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.4	0.11	0.25		mg/L	5	5/9/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	13	0.44	1.0		mg/L	20	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115137	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	PBW	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115137	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	LCSW	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639144

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.532	0.050	0.5000	0	106	85	115				

Sample ID	N024050-002ADUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	ZZZZZZ	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639146

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.475	0.50						3.740	7.35	20	

Sample ID	N024050-002AMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	ZZZZZZ	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639147

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.214	0.50	5.000	3.740	89.5	75	125				

Sample ID	N024050-002AMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	ZZZZZZ	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639148

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.497	0.50	5.000	3.740	95.1	75	125	8.214	3.39	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115162	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	PBW	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115162	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	LCSW	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0	101	85	115				

Sample ID	N024053-006CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.02380	0	20	

Sample ID	N024053-006CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640334

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0.02380	96.4	75	125				

Sample ID	N024053-006CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.523	0.050	0.5000	0.02380	99.8	75	125	0.5056	3.36	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CHAIN OF CUSTODY RECORD

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
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| | | |

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/28/2017	Workorder:	N024053
Rep sample Temp (Deg C):	2.8/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 5/4/2017

Reviewed By: MBC 5/5/2017

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-001A	MW-42-055-Q217	4/28/2017 8:11:00 AM	5/12/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-001B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-002A	MW-42-055-EB-Q217	4/28/2017 8:20:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-002B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-003A	MW-42-065-Q217	4/28/2017 8:17:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-003B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-004A	MW-42-065-EB-Q217	4/28/2017 8:27:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-004B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-005A	MW-27-085-Q217	4/28/2017 8:56:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-005B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-005C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-006A	MW-904-Q217	4/28/2017 9:06:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-006B	MW-904-Q217	4/28/2017 9:06:00 AM	5/12/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-006C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-007A	MW-27-085-EB-Q217	4/28/2017 9:15:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-007B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-007C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-008A	MW-22-Q217	4/28/2017 9:00:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-008B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-009A	MW-23-060-Q217	4/28/2017 9:54:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-009B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-010A	MW-23-080-2Q17	4/28/2017 9:52:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-010B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-011A	MW-708-Q217	4/28/2017 10:05:00 AM	5/12/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-012A	MW-710-Q217	4/28/2017 10:03:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-013A	MW-913-Q217	4/28/2017 10:45:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-013B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-013C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-013D			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/12/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-013E			5/12/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/12/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N024053-014A	TW-02D-Q217	4/28/2017 10:40:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-014B	TW-02D-Q217	4/28/2017 10:40:00 AM	5/12/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-014C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-014D			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/12/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-014E			5/12/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/12/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N024053-015A	MW-50-200-Q217	4/28/2017 8:28:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-015B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-016A	FOLDER	5/12/2017	5/12/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-016A	FOLDER	5/12/2017	5/12/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - GMP

Project: RC000753.801B

ASSET Laboratories Work Order: N024053

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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May 15, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024053

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 28, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N023998-002B-MS2 and N023998-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 218.6:

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N024053-001 (MW-42-055-Q217) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Dilution was necessary for samples N024053-005, N024053-006, N024053-008 and N024053-010 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 300.0:

Dilution was necessary on samples N024053-013 and N024053-014 due to precipitation of sample upon the addition of eluent.

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024053-005, N024053-006, N024053-009, N024053-010, N024053-013, N024053-014 and N024053-015 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Because the results for total dissolved chromium (1.3 ug/L) and hexavalent chromium (0 ug/L) for sample N024053-001 (MW-42-055-Q217) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved chromium. The results from the redigested samples were 1.3 and 1.4 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N024038-004B-MS, N024038-004B-MSD, N024053-014B-MS and N024053-014BMSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *15-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024053
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024053-001A	MW-42-055-Q217	Groundwater	4/28/2017 8:11:00 AM	4/28/2017	5/15/2017
N024053-001B	MW-42-055-Q217	Groundwater	4/28/2017 8:11:00 AM	4/28/2017	5/15/2017
N024053-002A	MW-42-055-EB-Q217	Groundwater	4/28/2017 8:20:00 AM	4/28/2017	5/15/2017
N024053-002B	MW-42-055-EB-Q217	Groundwater	4/28/2017 8:20:00 AM	4/28/2017	5/15/2017
N024053-003A	MW-42-065-Q217	Groundwater	4/28/2017 8:17:00 AM	4/28/2017	5/15/2017
N024053-003B	MW-42-065-Q217	Groundwater	4/28/2017 8:17:00 AM	4/28/2017	5/15/2017
N024053-004A	MW-42-065-EB-Q217	Groundwater	4/28/2017 8:27:00 AM	4/28/2017	5/15/2017
N024053-004B	MW-42-065-EB-Q217	Groundwater	4/28/2017 8:27:00 AM	4/28/2017	5/15/2017
N024053-005A	MW-27-085-Q217	Groundwater	4/28/2017 8:56:00 AM	4/28/2017	5/15/2017
N024053-005B	MW-27-085-Q217	Groundwater	4/28/2017 8:56:00 AM	4/28/2017	5/15/2017
N024053-005C	MW-27-085-Q217	Groundwater	4/28/2017 8:56:00 AM	4/28/2017	5/15/2017
N024053-006A	MW-904-Q217	Groundwater	4/28/2017 9:06:00 AM	4/28/2017	5/15/2017
N024053-006B	MW-904-Q217	Groundwater	4/28/2017 9:06:00 AM	4/28/2017	5/15/2017
N024053-006C	MW-904-Q217	Groundwater	4/28/2017 9:06:00 AM	4/28/2017	5/15/2017
N024053-007A	MW-27-085-EB-Q217	Groundwater	4/28/2017 9:15:00 AM	4/28/2017	5/15/2017
N024053-007B	MW-27-085-EB-Q217	Groundwater	4/28/2017 9:15:00 AM	4/28/2017	5/15/2017
N024053-007C	MW-27-085-EB-Q217	Groundwater	4/28/2017 9:15:00 AM	4/28/2017	5/15/2017
N024053-008A	MW-22-Q217	Groundwater	4/28/2017 9:00:00 AM	4/28/2017	5/15/2017
N024053-008B	MW-22-Q217	Groundwater	4/28/2017 9:00:00 AM	4/28/2017	5/15/2017
N024053-009A	MW-23-060-Q217	Groundwater	4/28/2017 9:54:00 AM	4/28/2017	5/15/2017
N024053-009B	MW-23-060-Q217	Groundwater	4/28/2017 9:54:00 AM	4/28/2017	5/15/2017
N024053-010A	MW-23-080-2Q17	Groundwater	4/28/2017 9:52:00 AM	4/28/2017	5/15/2017
N024053-010B	MW-23-080-2Q17	Groundwater	4/28/2017 9:52:00 AM	4/28/2017	5/15/2017
N024053-011A	MW-708-Q217	Groundwater	4/28/2017 10:05:00 AM	4/28/2017	5/15/2017
N024053-012A	MW-710-Q217	Groundwater	4/28/2017 10:03:00 AM	4/28/2017	5/15/2017
N024053-013A	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017
N024053-013B	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017
N024053-013C	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017
N024053-013D	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024053
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024053-013E	MW-913-Q217	Groundwater	4/28/2017 10:45:00 AM	4/28/2017	5/15/2017
N024053-014A	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-014B	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-014C	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-014D	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-014E	TW-02D-Q217	Groundwater	4/28/2017 10:40:00 AM	4/28/2017	5/15/2017
N024053-015A	MW-50-200-Q217	Groundwater	4/28/2017 8:28:00 AM	4/28/2017	5/15/2017
N024053-015B	MW-50-200-Q217	Groundwater	4/28/2017 8:28:00 AM	4/28/2017	5/15/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170428A**	QC Batch: **R114969**			PrepDate			Analyst: **LR**
Specific Conductance	7500	0.10	0.10		umhos/cm	1	4/28/2017 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170428A**	QC Batch: **R114969**			PrepDate			Analyst: **LR**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	4/28/2017 01:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N024053-014EDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**114969**
Client ID:	**ZZZZZZ**	Batch ID:	**R114969**	TestNo:	**EPA 120.1**			Analysis Date:	**4/28/2017**	SeqNo:	**2632963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7600.000	0.10						7620	0.263	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170428C**	QC Batch: **R114971**			PrepDate			Analyst: **LR**
pH	6.9	0.10	0.10	H	pH Units	1	4/28/2017 02:00 PM
Temp. at time of pH Analysis	18	0.10	0.10	H	°C	1	4/28/2017 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170428C**	QC Batch: **R114971**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	4/28/2017 02:00 PM
Temp. at time of pH Analysis	19	0.10	0.10	H	°C	1	4/28/2017 02:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024053-013EDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **114971**
Client ID: **ZZZZZZ** Batch ID: **R114971** TestNo: **SM4500-H+B** Analysis Date: **4/28/2017** SeqNo: **2632969**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	6.870	0.10						6.880	0.145	10	H
Temp. at time of pH Analysis	18.400	0.10						18.50	0.542	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170501D**	QC Batch: **62103**			PrepDate	**5/1/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	5/1/2017 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170501D**	QC Batch: **62103**			PrepDate	**5/1/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4300	50	50		mg/L	1	5/1/2017 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID	LCS-62103	SampType:	LCS	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	5/1/2017	RunNo:	114976
Client ID:	LCSW	Batch ID:	62103	TestNo:	SM2540C			Analysis Date:	5/1/2017	SeqNo:	2634030

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	986.000	10	1000	0	98.6	80	120				

Sample ID	MB-62103	SampType:	MBLK	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	5/1/2017	RunNo:	114976
Client ID:	PBW	Batch ID:	62103	TestNo:	SM2540C			Analysis Date:	5/1/2017	SeqNo:	2634031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID	N024041-012BDUP	SampType:	DUP	TestCode:	160.1_2540C	Units:	mg/L	Prep Date:	5/1/2017	RunNo:	114976
Client ID:	ZZZZZZ	Batch ID:	62103	TestNo:	SM2540C			Analysis Date:	5/1/2017	SeqNo:	2634036

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	413400.000	2000						401000	3.05	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_170504C** QC Batch: **62096**					PrepDate	**5/1/2017**	Analyst: **CEI**
Calcium	220000	28	500		µg/L	1	5/4/2017 04:28 PM
Iron	ND	1.8	20		µg/L	1	5/4/2017 04:28 PM
Magnesium	30000	4.4	100		µg/L	1	5/4/2017 04:28 PM
Sodium	1500000	1300	25000		µg/L	50	5/10/2017 06:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170504C**	QC Batch: **62096**				PrepDate	**5/1/2017**	Analyst: **CEI**
Calcium	210000	28	500		µg/L	1	5/4/2017 04:34 PM
Iron	ND	1.8	20		µg/L	1	5/4/2017 04:34 PM
Magnesium	29000	4.4	100		µg/L	1	5/4/2017 04:34 PM
Sodium	1400000	1300	25000		µg/L	50	5/10/2017 06:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-62096** SampType: **MBLK** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/1/2017** RunNo: **115046**
Client ID: **PBW** Batch ID: **62096** TestNo: **EPA 200.7** Analysis Date: **5/4/2017** SeqNo: **2636369**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	6.975	20									
Magnesium	ND	100									

Sample ID **LCS1-62096** SampType: **LCS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/1/2017** RunNo: **115046**
Client ID: **LCSW** Batch ID: **62096** TestNo: **EPA 200.7** Analysis Date: **5/4/2017** SeqNo: **2636370**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9495.066	500	10000	0	95.0	85	115				
Iron	105.401	20	100.0	0	105	85	115				
Magnesium	9795.730	100	10000	0	98.0	85	115				

Sample ID **N023998-001B-MS1** SampType: **MS** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/1/2017** RunNo: **115046**
Client ID: **ZZZZZZ** Batch ID: **62096** TestNo: **EPA 200.7** Analysis Date: **5/4/2017** SeqNo: **2636374**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	125011.400	500	10000	116900	80.6	75	125				
Iron	113.273	20	100.0	6.352	107	75	125				
Magnesium	34100.428	100	10000	25140	89.6	75	125				

Sample ID **N023998-001B-MSD** SampType: **MSD** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: **5/1/2017** RunNo: **115046**
Client ID: **ZZZZZZ** Batch ID: **62096** TestNo: **EPA 200.7** Analysis Date: **5/4/2017** SeqNo: **2636375**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	124686.234	500	10000	116900	77.4	75	125	125000	0.260	20	
Iron	107.784	20	100.0	6.352	101	75	125	113.3	4.97	20	
Magnesium	33548.649	100	10000	25140	84.1	75	125	34100	1.63	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-62096**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115123**
Client ID: **PBW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID **LCS2-62096**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115123**
Client ID: **LCSW**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19378.056	500	20000	0	96.9	85	115				

Sample ID **N023998-002B-MS2**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115123**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1663449.239	25000	20000	1606000	289	75	125				S

Sample ID **N023998-002B-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115123**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1684352.033	25000	20000	1606000	394	75	125	1663000	1.25	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:11:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	28	0.025	0.10		µg/L	1	5/8/2017 07:44 PM
Manganese	18	0.056	0.50		µg/L	1	5/8/2017 07:44 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-055-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:20:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/8/2017 07:50 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 07:50 PM

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	5.7	0.025	0.10		µg/L	1	5/8/2017 07:55 PM
Manganese	290	0.28	2.5		µg/L	5	5/10/2017 12:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/8/2017 08:01 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 08:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:56:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170508B** QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.3	0.025	0.10		µg/L	1	5/8/2017 08:06 PM
Manganese	84	0.056	0.50		µg/L	1	5/8/2017 08:06 PM
Molybdenum	17	0.19	2.5		µg/L	5	5/10/2017 12:06 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 12:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170508B** QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	1.3	0.025	0.10		µg/L	1	5/8/2017 08:23 PM
Manganese	85	0.056	0.50		µg/L	1	5/8/2017 08:23 PM
Molybdenum	17	0.19	2.5		µg/L	5	5/10/2017 12:11 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 12:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-007

Client Sample ID: MW-27-085-EB-Q217
Collection Date: 4/28/2017 9:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	ND	0.025	0.10		µg/L	1	5/8/2017 08:29 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 08:29 PM
Molybdenum	ND	0.039	0.50		µg/L	1	5/8/2017 08:29 PM
Selenium	ND	0.028	0.50		µg/L	1	5/8/2017 08:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-008

Client Sample ID: MW-22-Q217
Collection Date: 4/28/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62101**			PrepDate	**5/1/2017**	Analyst: **CEI**	
Arsenic	13	0.025	0.10		µg/L	1	5/8/2017 08:34 PM
Manganese	1900	1.4	12		µg/L	25	5/10/2017 12:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:54:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	3.1	0.12	0.50		µg/L	5	5/10/2017 12:28 PM
Manganese	4.0	0.056	0.50		µg/L	1	5/8/2017 08:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-2Q17
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62101**				PrepDate	**5/1/2017**	Analyst: **CEI**
Arsenic	4.4	0.12	0.50		µg/L	5	5/10/2017 02:43 PM
Manganese	4.9	0.056	0.50		µg/L	1	5/8/2017 08:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**					PrepDate	**5/1/2017**	Analyst: **CEI**
Manganese	14	0.056	0.50		µg/L	1	5/3/2017 01:46 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170508B** QC Batch: **62101**					PrepDate	**5/1/2017**	Analyst: **CEI**
Manganese	13	0.056	0.50		µg/L	1	5/8/2017 08:51 PM
Molybdenum	21	0.19	2.5		µg/L	5	5/10/2017 12:50 PM
Selenium	4.0	0.028	0.50		µg/L	1	5/8/2017 08:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**					PrepDate	**5/1/2017**	Analyst: **CEI**
Manganese	15	0.056	0.50		µg/L	1	5/3/2017 01:57 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170508B** QC Batch: **62121**					PrepDate	**5/3/2017**	Analyst: **CEI**
Manganese	14	0.056	0.50		µg/L	1	5/8/2017 09:08 PM
Molybdenum	22	0.19	2.5		µg/L	5	5/8/2017 09:13 PM
Selenium	4.8	0.14	2.5		µg/L	5	5/8/2017 09:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-62097**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **PBW**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634747**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-62097**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **LCSW**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	99.118	0.50	100.0	0	99.1	85	115				

Sample ID **N023998-001B-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	222.474	2.5	100.0	109.5	113	75	125				

Sample ID **N023998-001B-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **62097**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	214.811	2.5	100.0	109.5	105	75	125	222.5	3.51	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-62101	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	PBW	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639424

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.132	0.50									
Selenium	ND	0.50									

Sample ID	LCS-62101	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	LCSW	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.538	0.10	10.00	0	95.4	85	115				
Manganese	96.825	0.50	100.0	0	96.8	85	115				
Molybdenum	9.965	0.50	10.00	0	99.7	85	115				
Selenium	8.890	0.50	10.00	0	88.9	85	115				

Sample ID	N024038-004B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639429

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.560	0.10	10.00	1.130	94.3	75	125				
Manganese	87.555	0.50	100.0	1.034	86.5	75	125				
Molybdenum	25.745	0.50	10.00	15.01	107	75	125				
Selenium	10.822	0.50	10.00	2.111	87.1	75	125				

Sample ID	N024038-004B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.905	0.10	10.00	1.130	97.8	75	125	10.56	3.21	20	
Manganese	86.709	0.50	100.0	1.034	85.7	75	125	87.56	0.971	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024038-004B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639430

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	25.961	0.50	10.00	15.01	110	75	125	25.75	0.835	20	
Selenium	10.539	0.50	10.00	2.111	84.3	75	125	10.82	2.65	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-62121	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115142
Client ID:	PBW	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639454

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Sample ID	LCS-62121	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115142
Client ID:	LCSW	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639455

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.707	0.10	10.00	0	97.1	85	115				
Manganese	96.249	0.50	100.0	0	96.2	85	115				
Molybdenum	10.127	0.50	10.00	0	101	85	115				
Selenium	9.681	0.50	10.00	0	96.8	85	115				

Sample ID	N024053-014B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639461

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.849	0.10	10.00	2.586	92.6	75	125				
Manganese	99.977	0.50	100.0	14.46	85.5	75	125				

Sample ID	N024053-014B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639462

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.377	0.10	10.00	2.586	97.9	75	125	11.85	4.35	20	
Manganese	98.793	0.50	100.0	14.46	84.3	75	125	99.98	1.19	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024053-014B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115146
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.107	2.5	10.00	22.38	97.3	75	125				
Selenium	14.659	2.5	10.00	4.753	99.1	75	125				

Sample ID	N024053-014B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115146
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.625	2.5	10.00	22.38	92.5	75	125	32.11	1.51	20	
Selenium	14.122	2.5	10.00	4.753	93.7	75	125	14.66	3.73	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-001

Client Sample ID: MW-42-055-Q217
Collection Date: 4/28/2017 8:11:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 10:43 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	1.3	0.019	1.0		µg/L	1	5/8/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-002

Client Sample ID: MW-42-055-EB-Q217
Collection Date: 4/28/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 11:03 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 07:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:17:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A**	QC Batch: **R115040**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 11:22 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A**	QC Batch: **62101**			PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 07:55 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-42-065-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:27:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 11:41 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:56:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/3/2017 06:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-006

Client Sample ID: MW-904-Q217
Collection Date: 4/28/2017 9:06:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/3/2017 06:23 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 12:57 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-008

Client Sample ID: MW-22-Q217
Collection Date: 4/28/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/3/2017 01:35 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-060-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:54:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	38	0.33	1.0		µg/L	5	5/3/2017 02:12 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	34	0.019	1.0		µg/L	1	5/8/2017 08:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-23-080-2Q17
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:52:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A** QC Batch: **R115040**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.2	0.33	1.0		µg/L	5	5/3/2017 06:42 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 08:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-708-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:05:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A**	QC Batch: **R115040**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 04:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-710-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:03:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A**	QC Batch: **R115040**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/3/2017 04:25 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503B** QC Batch: **R115041**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	520	6.6	20		µg/L	100	5/3/2017 11:07 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	530	0.096	5.0		µg/L	5	5/3/2017 01:52 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170510B** QC Batch: **62101**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	530	0.096	5.0		µg/L	5	5/10/2017 12:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503B** QC Batch: **R115041**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	530	6.6	20		µg/L	100	5/4/2017 12:04 AM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170502B** QC Batch: **62097**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	530	0.096	5.0		µg/L	5	5/3/2017 02:03 AM
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170508A** QC Batch: **62121**				PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	540	0.096	5.0		µg/L	5	5/8/2017 09:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-015

Client Sample ID: MW-50-200-Q217
Collection Date: 4/28/2017 8:28:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503A**	QC Batch: **R115040**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	7000	66	200		µg/L	1000	5/3/2017 02:31 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510B**	QC Batch: **62121**			PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	7400	0.97	50		µg/L	50	5/10/2017 01:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-62097	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	PBW	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634672

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62097	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	LCSW	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634673

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.004	1.0	10.00	0	100	85	115				

Sample ID	N023998-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634679

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.028	1.0	10.00	0.4171	86.1	75	125				

Sample ID	N023998-001B-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/1/2017	RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634681

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.569	1.0	10.00	0.4171	91.5	75	125	9.028	5.82	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115040**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **PBW**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115040**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **LCSW**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.065	0.20	5.000	0	101	90	110				

Sample ID **N024053-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0.07910	100	90	110				

Sample ID **N024053-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.029	0.20	1.000	0	103	90	110				

Sample ID **N024053-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636214**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.053	0.20	1.000	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024053-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N024053-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.031	0.20	1.000	0	103	90	110				

Sample ID **N024053-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.061	1.0	5.000	0	101	90	110				

Sample ID **N024053-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.156	1.0	25.00	38.34	103	90	110				

Sample ID **N024053-015AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12069.800	200	5000	7047	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024053-015AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	12242.100	200	5000	7047	104	90	110	12070	1.42	20	

Sample ID **N024053-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Sample ID **N024053-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.016	0.20	1.000	0	102	90	110				

Sample ID **N024038-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.045	1.0	5.000	0	101	90	110				

Sample ID **N024053-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.051	1.0	5.000	0	101	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024053-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636246

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.826	1.0	5.000	0	96.5	90	110				

Sample ID	N024053-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.308	1.0	5.000	1.211	102	90	110				

Sample ID	N024053-009ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115040
Client ID:	ZZZZZZ	Batch ID:	R115040	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2636249

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	38.455	1.0						38.34	0.303	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R115041**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **LCSW**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.119	0.20	5.000	0	102	90	110				

Sample ID **MB-R115041**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **PBW**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N024053-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1030.660	20	500.0	524.7	101	90	110				

Sample ID **N024053-013AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1040.040	20	500.0	524.7	103	90	110	1031	0.906	20	

Sample ID **N024053-013ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	539.530	20						524.7	2.79	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024053-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041
Client ID:	ZZZZZZ	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/4/2017	SeqNo:	2636168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1044.570	20	500.0	528.1	103	90	110				

Sample ID	N024054-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115041
Client ID:	ZZZZZZ	Batch ID:	R115041	TestNo:	EPA 218.6			Analysis Date:	5/3/2017	SeqNo:	2641786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.469	1.0	25.00	10.33	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-62101**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115141**
Client ID: **PBW**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639357**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **LCS-62101**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115141**
Client ID: **LCSW**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639358**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.424	1.0	10.00	0	94.2	85	115				

Sample ID **N024038-004B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2017**	SeqNo: **2639499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	391.835	5.0	10.00	429.9	-380	75	125				S

Sample ID **N024038-004B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/10/2017**	SeqNo: **2639500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	387.159	5.0	10.00	429.9	-427	75	125	391.8	1.20	20	S

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62121	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115141
Client ID:	PBW	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639387

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.025	1.0									

Sample ID	LCS-62121	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115141
Client ID:	LCSW	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.786	1.0	10.00	0	97.9	85	115				

Sample ID	N024053-014B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115144
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	528.347	5.0	10.00	536.9	-85.4	75	125				S

Sample ID	N024053-014B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115144
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639550

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	533.278	5.0	10.00	536.9	-36.1	75	125	528.3	0.929	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-913-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170501B**	QC Batch: **R114974**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	140	1.2	5.0		mg/L	1	5/1/2017 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-02D-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170501B**	QC Batch: **R114974**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	5/1/2017 10:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R114974**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **LCSW**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632976**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101.770	5.0	100.0	0	102	85	115				

Sample ID **MB-R114974**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **PBW**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632977**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N024053-013EDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **ZZZZZZ**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	139.381	5.0						137.2	1.60	30	

Sample ID **N024053-014EMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **ZZZZZZ**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632981**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.637	5.0	100.0	157.1	99.6	75	125				

Sample ID **N024053-014EMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **114974**
Client ID: **ZZZZZZ**	Batch ID: **R114974**	TestNo: **SM 2320 B**		Analysis Date: **5/1/2017**	SeqNo: **2632982**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	261.062	5.0	100.0	157.1	104	75	125	256.6	1.71	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Bromide	ND	0.045	0.50		mg/L	5	5/1/2017 06:37 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Chloride	2100	1.8	250		mg/L	500	5/1/2017 02:01 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Sulfate	530	0.64	25		mg/L	50	5/1/2017 01:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Bromide	ND	0.045	0.50		mg/L	5	5/1/2017 05:51 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Chloride	2100	1.8	250		mg/L	500	5/1/2017 07:53 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170501A** QC Batch: **R114990**				PrepDate			Analyst: **RAB**
Sulfate	510	0.64	25		mg/L	50	5/1/2017 02:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	MB-R114990_BR	SampType:	MBLK	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:				RunNo:	114990	
Client ID:	PBW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017			SeqNo:	2633871	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide		ND	0.10											

Sample ID	LCS-R114990_BR	SampType:	LCS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:				RunNo:	114990	
Client ID:	LCSW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017			SeqNo:	2633872	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide		1.183	0.10	1.250	0	94.6	90	110						

Sample ID	N024053-013EDUP	SampType:	DUP	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:				RunNo:	114990	
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017			SeqNo:	2633881	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide		0.300	0.50						0.2940	0	20			

Sample ID	N024053-013EMS	SampType:	MS	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:				RunNo:	114990	
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017			SeqNo:	2633882	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide		6.043	0.50	6.250	0.2940	92.0	80	120						

Sample ID	N024053-013EMSD	SampType:	MSD	TestCode:	300_W_BRP	Units:	mg/L	Prep Date:				RunNo:	114990	
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017			SeqNo:	2633883	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Bromide		6.125	0.50	6.250	0.2940	93.3	80	120	6.043	1.36	20			

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R114990_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	PBW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633834

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.127	0.50									

Sample ID	LCS-R114990_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	LCSW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633835

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.965	0.50	2.000	0	98.3	90	110				

Sample ID	N024050-005ADUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633851

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	49.298	10						49.27	0.0649	20	

Sample ID	N024050-001AMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633854

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	257.115	25	100.0	161.3	95.8	80	120				

Sample ID	N024050-004AMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633855

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	99.932	10	40.00	60.69	98.1	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	N024050-001AMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633858

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	259.265	25	100.0	161.3	97.9	80	120	257.1	0.833	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R114990_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	PBW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R114990_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	LCSW	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633891

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.896	0.50	4.000	0	97.4	90	110				

Sample ID	N024050-005ADUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633907

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	70.946	10						71.64	0.971	20	

Sample ID	N024050-001AMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633910

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	405.655	25	200.0	213.0	96.3	80	120				

Sample ID	N024050-004AMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633911

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	198.922	10	80.00	117.1	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	N024050-001AMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	114990
Client ID:	ZZZZZZ	Batch ID:	R114990	TestNo:	EPA 300.0			Analysis Date:	5/1/2017	SeqNo:	2633912

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	410.745	25	200.0	213.0	98.9	80	120	405.7	1.25	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 8:56:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170509B**	QC Batch: **R115137**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/9/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-904-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:06:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-27-085-EB-Q217
Lab Order:	N024053	**Collection Date:**	4/28/2017 9:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024053-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_170509B**	QC Batch: **R115137**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/9/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-013

Client Sample ID: MW-913-Q217
Collection Date: 4/28/2017 10:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170509B**	QC Batch: **R115137**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	2.4	0.11	0.25		mg/L	5	5/9/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024053
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024053-014

Client Sample ID: TW-02D-Q217
Collection Date: 4/28/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	13	0.44	1.0		mg/L	20	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115137	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	PBW	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639143

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115137	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	LCSW	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639144

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.532	0.050	0.5000	0	106	85	115				

Sample ID	N024050-002ADUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	ZZZZZZ	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639146

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.475	0.50						3.740	7.35	20	

Sample ID	N024050-002AMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	ZZZZZZ	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639147

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.214	0.50	5.000	3.740	89.5	75	125				

Sample ID	N024050-002AMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115137
Client ID:	ZZZZZZ	Batch ID:	R115137	TestNo:	SM4500-NO3			Analysis Date:	5/9/2017	SeqNo:	2639148

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	8.497	0.50	5.000	3.740	95.1	75	125	8.214	3.39	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115162	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	PBW	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115162	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	LCSW	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0	101	85	115				

Sample ID	N024053-006CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.02380	0	20	

Sample ID	N024053-006CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640334

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0.02380	96.4	75	125				

Sample ID	N024053-006CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.523	0.050	0.5000	0.02380	99.8	75	125	0.5056	3.36	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

CHAIN OF CUSTODY RECORD

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes		EDD Requirement		QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:		Excel EDD		RTNE	Y N
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com daniel.moore@arcadis.com	Address:		Geotracker		RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P.O.#	Labspec		CalTrans	2. Headspace
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax:	Others ✓		LEVEL III	3. Container Intact
Title: Geologist 1	Phone: 916-786-3302 Fax:			Specify: RWQCB		LEVEL IV	4. Seal Present
Signature: Date: 4/28/17	Sampled By: Jacob Mathew			Global ID:		Regulatory	5. IR number
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for					Specify State: CA	6. Method of Cooling: ICE
Project Name: PG&E Topock - GMP	Signature: Date: 4/28/17						Sample Temp: 8.8°C / 3.1°C
Project Number: RC000753.801B							Courier: LAB
							Tracking No.:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Metals Dissolved (6020FF) As, HNO3	Metals Dissolved (6020FF) Mo; HNO3	Metals Dissolved (6020FF) Se; HNO3	Metals Dissolved (6020FF) Cr; HNO3	Metals Dissolved (6020FF) Mn; HNO3	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4	Calcium, Dissolved (EPA 200.7); HN03	IRON, Dissolved (EPA 200.7), HN03	Sodium, Dissolved (EPA 200.7) HN03	Manganese, Chromium, Dissolved (EPA 200.8); HN03	Magnesium, Dissolved (EPA 200.7), HN03	Chloride, E300	Alkalinity, (SM2320B); Total as CaC03	TDS, SM2540C	Bromide, E300	Sulfate, E300	Specific conductance 120.1	pH (SM4500-HB)	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						250 mL poly	2 X 250 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	125 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly					
1	N024053 - 01	MW-42-055-Q217	4/28/17	0811			X	X			X	X															E	3	P	BNS	
2	- 02	MW-42-055-EB-Q217	4/28/17	0820		X		X			X	X															E	2	P	BNS	
3	- 03	MW-42-065-Q217	4/28/17	0817			X	X			X	X															E	3	P	BNS	
4	- 04	MW-42-065-EB-Q217	4/28/17	0827		X		X			X	X															E	2	P	BNS	
5	- 05	MW-27-085-Q217	4/28/17	0856			X	X	X	X	X	X	X														E	4	P	BNS	
6	- 06	MW-904-Q217	4/28/17	0906			X	X	X	X	X	X	X														E	4	P	BNS	
7	- 07	MW-27-085-EB-Q217	4/28/17	0915		X		X	X	X	X	X	X														E	3	P	BNS	
8	- 08	MW-22-Q217	4/28/17	0900		X		X			X	X															E	2	P	BNS	
9	- 09	MW-23-060-Q217	4/28/17	954		X		X			X	X															E	2	P	BNS	
1	- 10	MW-23-080-2Q17	4/28/17	0952		X		X			X	X															E	2	P	BNS	
10	- 11	MW-708-Q217	4/28/17	1005		X																					E	1	P	BNS	
11	- 12	MW-710-Q217	4/28/17	1003		X																					E	1	P	BNS	
12	- 13	MW-913-Q217	4/28/17	1045		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		E	5	P	BNS	
13	- 14	TW-02D-Q217	4/28/17	1040		X			X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		E	5	P	BNS	
14	- 15	MW-50-200-Q217	4/28/17	0828		X					X																E	2	P	BNS	

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
Jacob Mathew	4/28/17 1118	FEDEX Driver	4/28/17 11:15
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
FEDEX Driver	4/28/17 13:23	Yoandra Rodriguez	4/28/17 13:23
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Run analysis for***: Title 22 metals,Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		
Others/Specify:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price

5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/28/2017	Workorder:	N024053
Rep sample Temp (Deg C):	2.8/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 5/4/2017

Reviewed By: MBC 5/5/2017

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-001A	MW-42-055-Q217	4/28/2017 8:11:00 AM	5/12/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-001B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-002A	MW-42-055-EB-Q217	4/28/2017 8:20:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-002B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-003A	MW-42-065-Q217	4/28/2017 8:17:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-003B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-004A	MW-42-065-EB-Q217	4/28/2017 8:27:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-004B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-005A	MW-27-085-Q217	4/28/2017 8:56:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-005B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-005C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-006A	MW-904-Q217	4/28/2017 9:06:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-006B	MW-904-Q217	4/28/2017 9:06:00 AM	5/12/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-006C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-007A	MW-27-085-EB-Q217	4/28/2017 9:15:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-007B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-007C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-008A	MW-22-Q217	4/28/2017 9:00:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-008B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-009A	MW-23-060-Q217	4/28/2017 9:54:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-009B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-010A	MW-23-080-2Q17	4/28/2017 9:52:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-010B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-011A	MW-708-Q217	4/28/2017 10:05:00 AM	5/12/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-012A	MW-710-Q217	4/28/2017 10:03:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-013A	MW-913-Q217	4/28/2017 10:45:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-013B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-013C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-013D			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/12/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-013E			5/12/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/12/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N024053-014A	TW-02D-Q217	4/28/2017 10:40:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-014B	TW-02D-Q217	4/28/2017 10:40:00 AM	5/12/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-014C			5/12/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024053-014D			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/12/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/12/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-014E			5/12/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/12/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/12/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/12/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/12/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/12/2017		SM 1030F1	Cation-Anion Balance Calculation	☐	☐	☐	WW
N024053-015A	MW-50-200-Q217	4/28/2017 8:28:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024053-015B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024053-016A	FOLDER	5/12/2017	5/12/2017		EDD	RWQCB	☐	☐	☐	LAB

WORK ORDER Summary

30-Apr-17

WorkOrder: N024053

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024053-016A	FOLDER	5/12/2017	5/12/2017		Folder	Folder	☐	☐	☐	LAB

List of Analyst

ASSET Laboratories Work Order: **N024053**

NAME	TEST METHOD
Claire Ignacio	EPA 200.7, EPA 200.8, EPA 6020
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540C, SM 2320B
Ryan Balilu	SM 4500-NO3F

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R114969 **Analyst:** LSR

ASSET #: N024053 **Date Analyzed:** 4/28/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/2/2017

2nd Level Reviewer: Mary 5/15/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 4/28/17 1345

Analyst: LSR

Standard	Std ID	Reading	Comments
9.76 uS/cm	CINV - 170303A	9.93 uS/cm @21.0°C	% Rec: (90-110%)
1413	161214B	1419 @20.9°C	
10,003	170329A	9980 @20.9°C	
99938	161220J	100200 @20.9°C	

	Sample ID	Matrix	Reading	Comments
1	NO24036-001A	H_2O	670 @20.0°C	
2	NO24053-013E		7540 @19.6°C	
3	14E		7620 @19.6°C	
4	14E Dup		7600 @19.5°C	
5				
6				
7				
8				
9	1413 uS/cm	CINV - 170125F	1455 uS/cm @20.5°C	
10	10000	170125E	10300 @20.6°C	
Dup	99899	161104A	101900 @20.6°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Julia Ramit 5/2/2017

Date: _____

Analyst: _____

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R114971 **Instrument ID:** pH meter

ASSET #: N024053 **Analyst:** LSR

Date Analyzed: 4/28/2017

Method: EPA 150.1

pH Meter Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/2/2017

2nd Level Reviewer: 5/15/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 4/28/17 1120

Analyst: KR

Standard	Std ID	pH	Comments
Buffer 7	CMW-170125C	7.00 @ 21.5°C	SLOPE: 98.2%
Buffer 4	〃 170125B	4.04 @ 21.5°C	
Buffer 10	〃 161214A	10.05 @ 21.2°C	

	Sample ID	Matrix	pH	Comments
1	NO24036-001A	H2O	8.22 @ 16.9°C	
2	〃 1A DUP	〃	8.26 @ 16.8°C	
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CMW-170125D	9.00 @ 19.6°C	Accept: +/-0.1 pH units from expected value

Date: 4/28/17 1400

Analyst: KR

Standard	Std ID	pH	Comments
Buffer 7	CMW-170125C	7.00 @ 21.5°C	SLOPE: 98.2%
Buffer 4	〃 170125B	4.04 @ 21.5°C	
Buffer 10	〃 161214A	10.05 @ 21.2°C	

	Sample ID	Matrix	pH	Comments
1	NO24053-013E	H2O	6.88 @ 18.5°C	
2	〃 13E DUP	〃	6.87 @ 18.4°C	
3	〃 14E	〃	7.28 @ 18.7°C	
4				
5				
6				
7				
8				
9			Julia Ramit	5/2/2017
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CMW-170125D	6.99 @ 20.9°C	Accept: +/-0.1 pH units from expected value

Logbook #11

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62103 **Analyst:** LSR

ASSET #: N024053 **Date Analyzed:** 5/1/2017

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/4/2017

2nd Level Reviewer: 5/15/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N024053-013E,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.7162-61.6296)*1000000}{20}$$

= 4330 mg/L

Reporting result in two significant figures,

TDS = 4300 mg/L

Julia Ramit 5/4/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/1/2017 12:57:21 P**
Prep End Date: **5/2/2017 10:55:00 A**
Reviewed/ Date: 5/15/2017
Initials/ Date: Lilia Ramit 5/4/2017
Prep Batch **62103** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL**
Location: **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62103	Water		100	☐	0	0	100	1.000		
MB-62103	Water		100	☐	0	0	100	1.000		
N024017-004A	Wastewater		0.5	☐	0	0	100	200.000		
N024036-001A	Water		100	☐	0	0	100	1.000		
N024041-011B	Wastewater		20	☐	0	0	100	5.000		
N024041-012B	Wastewater		0.5	☐	0	0	100	200.000		
N024041-012B-DU	Wastewater		0.5	☐	0	0	100	200.000		
N024041-013B	Wastewater		0.5	☐	0	0	100	200.000		
N024041-014B	Wastewater		10	☐	0	0	100	10.000		
N024041-015B	Wastewater		100	☐	0	0	100	1.000		
N024053-013E	Groundwater		20	☐	0	0	100	5.000		
N024053-014E	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8943	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170501A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/1/2017 12:57:21 P**
Prep End Date:

Reviewed/ Date: _____

Initials/ Date: Lilia Ramit 5/4/2017

Prep Batch **62103** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62103	Water	160.1 170501A	100	☐	0	0	100	1.000		
MB-62103	Water		100	☐	0	0	100	1.000		
N024017-004A	Wastewater	204,000	100 /05	☐	0	0	100	1.000		
N024036-001A	Water	696	100	☐	0	0	100	1.000		
N024041-011B	Wastewater	8890	100/20	☐	0	0	100	1.000		
N024041-012B	Wastewater	189000	100 /05	☐	0	0	100	1.000		
N024041-012B-DU	Wastewater	1	100 /05	☐	0	0	100	1.000		
N024041-013B	Wastewater	181300	100 /05	☐	0	0	100	1.000		
N024041-014B	Wastewater	149200	100 /10	☐	0	0	100	1.000		
N024041-015B	Wastewater	915	100	☐	0	0	100	1.000		
N024053-013E	Groundwater	7730	100 /20	☐	0	0	100	1.000		
N024053-014E	Groundwater	7720	100 /20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8943

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/1/17 1257 D	MB 62903	100	54.6930 54.6926	54.6928 54.6929	
3L	LCS 62903	100	64.0214 64.0212	64.1202 64.1198	
	NO24017-004A	0.5	60.6283 60.6279	60.7857 60.7854	
G	NO24036-001A	100	53.7499 53.7495	53.7927 53.7923	
AC	NO24044-011B	20	62.4697 62.4694	62.5976 62.5975	
B	12B	0.5	59.1666 59.1663	59.3669 59.3668	
AB	12B DUP	0.5	59.8615 59.8611	60.0681 60.0678	
AD	13B	na 10 0.5	59.5928 59.5925	59.7896 59.7894	
mm	14B	10	60.7083 60.7079	60.8101 60.8098	
13	15B	100	62.3702 62.3701	62.4250 62.4246	

Julia Ramit 5/4/2017

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/1/17 MH	NO 24053-013E	20	61.6297 61.6296	61.7164 61.7162	
DO	14E	20	60.8134 60.8131	60.8997 60.8997	
Julia Ramit	5/4/2017				

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TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
5/2/2017									
MB-62103	100	54.6926	54.6929	3	1	3			MBLK
LCS-62103	100	64.0212	64.1198	986	1	986			LCS
N024017-004A	0.5	60.6279	60.7854	1575	200	315000	204000	1.544	SAMP
N024036-001A	100	53.7495	53.7923	428	1	428	696	0.615	SAMP
N024041-011B	20	62.4694	62.5975	1281	5	6405	8890	0.720	SAMP
N024041-012B	0.5	59.1663	59.3668	2005	200	401000	189000	2.122	SAMP
N024041-012BDUP	0.5	59.8611	60.0678	2067	200	413400	189000	2.187	DUP
N024041-013B	0.5	59.5925	59.7894	1969	200	393800	181300	2.172	SAMP
N024041-014B	10	60.7079	60.8098	1019	10	10190	14920	0.683	SAMP
N024041-015B	100	62.3701	62.4246	545	1	545	915	0.596	SAMP
N024053-013E	20	61.6296	61.7162	866	5	4330	7720	0.561	SAMP
N024053-014E	20	60.8131	60.8997	866	5	4330	7730	0.560	SAMP

Julia Ramit 5/4/2017

EPA 200.7
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62096
ASSET #: N024053

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/4/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)		X				
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)		X				
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Fe in LLICV and LLCCV1 failed, bias high. However Fe is ND.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/11/2017 Date: —

2nd Level Reviewer 5/11/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62096
ASSET #: N024053

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/10/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N023998-002B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/11/2017 Date: —

2nd Level Reviewer 5/11/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA ~~6010B~~ 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N024053-013D** , the concentration ir ug/L is calculated as follows:

Calcium , ug/L = 219.17 * 1 * (25/25) * 1000

Calcium , ug/L = 219170

Reporting results in two significant figures,

Calcium , ug/L = 220000

% RSD SUMMARY

RSD SUMMARY: 170504C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	6.6	15	PASS
Standard1	ICAL	1	Ca	0.2	6.36	15	PASS
Standard2	ICAL	1	Ca	1	1.058	15	PASS
Standard3	ICAL	1	Ca	2	1.97	15	PASS
Standard4	ICAL	1	Ca	5	1.22	15	PASS
Standard5	ICAL	1	Ca	7.5	0.63	15	PASS
Standard6	ICAL	1	Ca	10	0.46	15	PASS
Standard7	ICAL	1	Ca	20	0.13	15	PASS
ICV	ICV	1	Ca	9.87	0.67	15	PASS
ICB	ICB	1	Ca	-0.022	75.57	15	<PQL
LLICV	CCV1	1	Ca	0.21	15.91	20	PASS
ICSA1	ICSA	1	Ca	500.18	0.13	15	PASS
ICSAB1	ICSAB	1	Ca	540.94	0.13	15	PASS
LLICV	CCV1	1	Ca	0.38	33.39	20	<PQL
MB-62096	MBLK	1	Ca	0.019	122.92	15	<PQL
LCS1-62096	LCS	1	Ca	9.5	0.27	15	PASS
N023998-001B	SAMP	1	Ca	116.95	0.12	15	PASS
N023998-001B	SAMP	5	Ca	24.37	0.55	15	PASS
N023998-001B-PS	PS	1	Ca	126.87	0.39	15	PASS
N023998-001B-MS1	MS	1	Ca	125.01	0.57	15	PASS
N023998-001B-MSD1	MSD	1	Ca	124.69	0.46	15	PASS
N023998-002B	SAMP	1	Ca	224.07	0.48	15	PASS
N024053-013D	SAMP	1	Ca	219.17	0.46	15	PASS
N024053-014D	SAMP	1	Ca	213.02	1.41	15	PASS
CCV1	CCV	1	Ca	9.76	0.63	15	PASS
CCB1	CCB	1	Ca	0.0024	326.58	15	<PQL
LLCCV1	CCV2	1	Ca	0.23	7.4	20	PASS
LLCCV1	CCV2	1	Ca	0.44	14.81	20	PASS
LLCCV1	CCV2	1	Ca	0.3	8.12	20	PASS
ICSA2	ICSA	1	Ca	495.59	0.056	15	PASS
ICSAB2	ICSAB	1	Ca	536.99	0.049	15	PASS
CalBlk	IBLK	1	Fe	0	7.69	15	PASS
Standard1	ICAL	1	Fe	0.02	1.38	15	PASS
Standard2	ICAL	1	Fe	0.05	0.17	15	PASS
Standard3	ICAL	1	Fe	2	0.32	15	PASS
Standard4	ICAL	1	Fe	5	1.00011	15	PASS
Standard5	ICAL	1	Fe	7.5	0.31	15	PASS
Standard6	ICAL	1	Fe	10	0.28	15	PASS
Standard7	ICAL	1	Fe	20	0.29	15	PASS
ICV	ICV	1	Fe	10.12	0.071	15	PASS
ICB	ICB	1	Fe	0.00063	229.97	15	<PQL
LLICV	CCV1	1	Fe	0.026	1.94	20	PASS

RSD SUMMARY: 170504C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSA1	ICSA	1	Fe	171.99	0.43	15	PASS
ICSAB1	ICSAB	1	Fe	182.72	0.22	15	PASS
LLICV	CCV1	1	Fe	0.099	33.7	20	NR!
MB-62096	MBLK	1	Fe	0.007	23.93	15	<PQL
LCS1-62096	LCS	1	Fe	0.11	0.4	15	PASS
N023998-001B	SAMP	1	Fe	0.0064	12.74	15	PASS
N023998-001B	SAMP	5	Fe	-0.00011	555.6	15	<PQL
N023998-001B-PS	PS	1	Fe	0.11	0.72	15	PASS
N023998-001B-MS1	MS	1	Fe	0.11	0.35	15	PASS
N023998-001B-MSD1	MSD	1	Fe	0.11	1.24	15	PASS
N023998-002B	SAMP	1	Fe	0.003	14.47	15	PASS
N024053-013D	SAMP	1	Fe	0.0072	2.011	15	PASS
N024053-014D	SAMP	1	Fe	0.0025	27.71	15	<PQL
CCV1	CCV	1	Fe	10.011	0.32	15	PASS
CCB1	CCB	1	Fe	0.0046	50.32	15	<PQL
LLCCV1	CCV2	1	Fe	0.032	0.47	20	PASS
LLCCV1	CCV2	1	Fe	0.14	18.93	20	PASS
LLCCV1	CCV2	1	Fe	0.048	1.3	20	PASS
ICSA2	ICSA	1	Fe	169.54	0.39	15	PASS
ICSAB2	ICSAB	1	Fe	181.26	0.29	15	PASS
CalBlk	IBLK	1	Mg	0	4.36	15	PASS
Standard1	ICAL	1	Mg	0.1	0.42	15	PASS
Standard2	ICAL	1	Mg	1	0.38	15	PASS
Standard3	ICAL	1	Mg	2	0.33	15	PASS
Standard4	ICAL	1	Mg	5	0.9	15	PASS
Standard5	ICAL	1	Mg	7.5	0.31	15	PASS
Standard6	ICAL	1	Mg	10	0.36	15	PASS
Standard7	ICAL	1	Mg	20	0.36	15	PASS
ICV	ICV	1	Mg	10.12	0.25	15	PASS
ICB	ICB	1	Mg	-0.003	27.66	15	<PQL
LLICV	CCV1	1	Mg	0.11	0.51	20	PASS
ICSA1	ICSA	1	Mg	474.47	0.44	15	PASS
ICSAB1	ICSAB	1	Mg	508.31	0.14	15	PASS
LLICV	CCV1	1	Mg	0.3	41.73	20	NR!
MB-62096	MBLK	1	Mg	0.0023	34.87	15	<PQL
LCS1-62096	LCS	1	Mg	9.8	0.19	15	PASS
N023998-001B	SAMP	1	Mg	25.14	0.1	15	PASS
N023998-001B	SAMP	5	Mg	5.48	0.77	15	PASS
N023998-001B-PS	PS	1	Mg	34.41	0.15	15	PASS
N023998-001B-MS1	MS	1	Mg	34.1	0.32	15	PASS
N023998-001B-MSD1	MSD	1	Mg	33.55	0.18	15	PASS
N023998-002B	SAMP	1	Mg	30.16	0.38	15	PASS

RSD SUMMARY: 170504C

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N024053-013D	SAMP	1	Mg	29.91	0.31	15	PASS
N024053-014D	SAMP	1	Mg	28.77	0.4	15	PASS
CCV1	CCV	1	Mg	9.76	0.31	15	PASS
CCB1	CCB	1	Mg	0.0002	701.8	15	<PQL
LLCCV1	CCV2	1	Mg	0.13	1.62	20	PASS
LLCCV1	CCV2	1	Mg	0.38	19.8	20	PASS
LLCCV1	CCV2	1	Mg	0.16	0.73	20	PASS
ICSA2	ICSA	1	Mg	462.18	0.4	15	PASS
ICSAB2	ICSAB	1	Mg	500.95	0.32	15	PASS

RSD SUMMARY: 170510A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	25.87	15	<PQL
Standard1	ICAL	1	Na	0.1	7.3	15	PASS
Standard2	ICAL	1	Na	1	0.6	15	PASS
Standard3	ICAL	1	Na	5	3.82	15	PASS
Standard4	ICAL	1	Na	10	0.28	15	PASS
Standard5	ICAL	1	Na	20	0.26	15	PASS
Standard6	ICAL	1	Na	40	0.32	15	PASS
ICV	ICV	1	Na	10.029	0.23	15	PASS
ICB	ICB	1	Na	-0.032	21.94	15	<PQL
ICSA1	ICSA	1	Na	-0.025	26.15	15	<PQL
ICSAB1	ICSAB	1	Na	9.96	0.11	15	PASS
MB-62096	MBLK	1	Na	-0.03	26.23	15	<PQL
LCS2-62096	LCS	1	Na	19.38	0.36	15	PASS
N023998-001B	SAMP	10	Na	72.97	0.092	15	PASS
N023998-002B	SAMP	10	Na	153.2	0.93	15	PASS
N024053-013D	SAMP	10	Na	150.52	0.54	15	PASS
N024053-014D	SAMP	10	Na	144.04	0.15	15	PASS
N023998-001B	SAMP	50	Na	14.096	0.17	15	PASS
N024053-013D	SAMP	50	Na	30.2	0.026	15	PASS
N024053-014D	SAMP	50	Na	28.99	0.21	15	PASS
N023998-002B	SAMP	50	Na	32.11	0.5	15	PASS
CCV1	CCV	1	Na	10.094	0.24	15	PASS
CCB1	CCB	1	Na	-0.014	55.22	15	<PQL
N023998-002B	SAMP	250	Na	31.07	0.19	15	PASS
N023998-002B-PS	PS	50	Na	31.19	0.19	15	PASS
N023998-002B-MS2	MS	50	Na	33.27	0.29	15	PASS
N023998-002B-MSD2	MSD	50	Na	33.69	0.13	15	PASS
N023998-002B	SAMP	250	Na	6.21	0.15	15	PASS
CCV2	CCV	1	Na	11.065	10.2	15	PASS
CCV2	CCV	1	Na	10.37	0.16	15	PASS
CCB2	CCB	1	Na	-0.027	22.85	15	<PQL
CCV3	CCV	1	Na	10.56	1.43	15	PASS
CCV3	CCV	1	Na	10.41	4.1	15	PASS
CCB3	CCB	1	Na	-0.028	10.66	15	PASS
ICSA2	ICSA	1	Na	-0.035	26.9	15	<PQL
ICSAB2	ICSAB	1	Na	10.29	0.11	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170504C

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170306F,0.5<50mL
Standard2	MWST-170306F,1<50mL
Standard3	MWST-170306F,5<50mL
Standard4	MWST-170306F,12.5<50mL
Standard5	MWST-170306F,15<40mL
Standard6	MWST-170306F,25<50mL
Standard7	MWST-170306F
ICV	MWST-170430G
CCV	MWST-170306F,25<50mL
ICSA/ICSAB	MWST-170228D/ MWST-170430H
Int. Std. (Y)	MSST-170404Q/R
PS Spike	MWST-170107C/-161201E/-170430A/-161215A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/04/2017	02:20:04 PM
2	Standard1	ICAL	1	05/04/2017	02:24:54 PM
3	Standard2	ICAL	1	05/04/2017	02:29:43 PM
4	Standard3	ICAL	1	05/04/2017	02:34:33 PM
5	Standard4	ICAL	1	05/04/2017	02:39:25 PM
6	Standard5	ICAL	1	05/04/2017	02:45:18 PM
7	Standard6	ICAL	1	05/04/2017	02:51:10 PM
8	Standard7	ICAL	1	05/04/2017	02:56:35 PM
9	ICV	ICV	1	05/04/2017	03:02:01 PM
1	ICB	ICB	1	05/04/2017	03:07:27 PM
2	LLICV	CCV1	1	05/04/2017	03:12:17 PM
4	ICSA1	ICSA	1	05/04/2017	03:17:06 PM
5	ICSAB1	ICSAB	1	05/04/2017	03:23:09 PM
2	LLICV	CCV1	1	05/04/2017	03:31:12 PM
38	MB-62096	MBLK	1	05/04/2017	03:44:02 PM
39	LCS1-62096	LCS	1	05/04/2017	03:48:52 PM
40	N023998-001B	SAMP	1	05/04/2017	03:54:43 PM
41	N023998-001B	SAMP	5	05/04/2017	04:00:33 PM
42	N023998-001B-PS	PS	1	05/04/2017	04:05:23 PM
43	N023998-001B-MS1	MS	1	05/04/2017	04:11:15 PM
44	N023998-001B-MSD1	MSD	1	05/04/2017	04:17:08 PM
45	N023998-002B	SAMP	1	05/04/2017	04:22:59 PM
46	N024053-013D	SAMP	1	05/04/2017	04:28:51 PM
47	N024053-014D	SAMP	1	05/04/2017	04:34:43 PM
7	CCV1	CCV	1	05/04/2017	04:40:35 PM
1	CCB1	CCB	1	05/04/2017	04:46:00 PM
2	LLCCV1	CCV2	1	05/04/2017	04:50:48 PM
2	LLCCV1	CCV2	1	05/04/2017	05:05:13 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
2	LLCCV1	CCV2	1	05/04/2017	05:23:08 PM
4	ICSA2	ICSA	1	05/04/2017	05:28:34 PM
5	ICSAB2	ICSAB	1	05/04/2017	05:34:36 PM

INJECTION LOG: 170510A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170428A,0.025<50mL
Standard2	MWST-170428A,0.25<50mL
Standard3	MWST-170428A,1.25<50mL
Standard4	MWST-170428A,2.5<50mL
Standard5	MWST-170428A,5<50mL
Standard6	MWST-170428A,10<50mL
ICV	MWST-170228B
CCV	MWST-170428A,2.5<50mL
ICSA/ICSAB	MWST-170228D/-170428B
Int. Std. (Sc):	MSST-170404Q/R
PS Spike	MSST-130329D/-130329E/-170116A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/10/2017	04:53:19 AM
26	Standard1	ICAL	1	05/10/2017	04:56:37 AM
27	Standard2	ICAL	1	05/10/2017	04:59:56 AM
28	Standard3	ICAL	1	05/10/2017	05:04:02 AM
29	Standard4	ICAL	1	05/10/2017	05:07:50 AM
30	Standard5	ICAL	1	05/10/2017	05:11:39 AM
31	Standard6	ICAL	1	05/10/2017	05:15:28 AM
32	ICV	ICV	1	05/10/2017	05:19:19 AM
1	ICB	ICB	1	05/10/2017	05:23:08 AM
33	ICSA1	ICSA	1	05/10/2017	05:26:26 AM
34	ICSAB1	ICSAB	1	05/10/2017	05:29:43 AM
38	MB-62096	MBLK	1	05/10/2017	05:33:34 AM
39	LCS2-62096	LCS	1	05/10/2017	05:36:51 AM
40	N023998-001B	SAMP	10	05/10/2017	05:40:41 AM
41	N023998-002B	SAMP	10	05/10/2017	05:43:59 AM
42	N024053-013D	SAMP	10	05/10/2017	05:48:47 AM
43	N024053-014D	SAMP	10	05/10/2017	05:53:36 AM
44	N023998-001B	SAMP	50	05/10/2017	06:00:55 AM
45	N024053-013D	SAMP	50	05/10/2017	06:04:14 AM
46	N024053-014D	SAMP	50	05/10/2017	06:07:08 AM
47	N023998-002B	SAMP	50	05/10/2017	06:10:28 AM
29	CCV1	CCV	1	05/10/2017	06:13:48 AM
1	CCB1	CCB	1	05/10/2017	06:17:37 AM
48	N023998-002B	SAMP	250	05/10/2017	06:20:53 AM
49	N023998-002B-PS	PS	50	05/10/2017	06:24:12 AM
50	N023998-002B-MS2	MS	50	05/10/2017	06:29:30 AM
51	N023998-002B-MSD2	MSD	50	05/10/2017	06:33:10 AM
52	N023998-002B	SAMP	250	05/10/2017	06:36:29 AM
53	MB-62060	MBLK	1	05/10/2017	06:39:47 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	LCS-62060	LCS	1	05/10/2017	06:43:07 AM
55	N024014-001B	SAMP	1	05/10/2017	06:46:58 AM
56	N024014-001B	SAMP	5	05/10/2017	06:50:48 AM
57	N024014-001B-PS	PS	1	05/10/2017	06:54:37 AM
29	CCV2	CCV	1	05/10/2017	06:58:28 AM
29	CCV2	CCV	1	05/10/2017	07:01:21 AM
1	CCB2	CCB	1	05/10/2017	07:05:11 AM
58	N024014-001BMS	MS	1	05/10/2017	07:08:26 AM
59	N024014-001BMSD	MSD	1	05/10/2017	07:12:18 AM
60	N024014-001B	SAMP	25	05/10/2017	07:16:08 AM
61	N024014-001B-PS	PS	5	05/10/2017	07:19:27 AM
62	N024014-001BMS	MS	5	05/10/2017	07:23:16 AM
63	N024014-001BMSD	MSD	5	05/10/2017	07:27:04 AM
64	N024114-014A	SAMP	1	05/10/2017	07:30:55 AM
65	N024114-015A	SAMP	1	05/10/2017	07:34:34 AM
29	CCV3	CCV	1	05/10/2017	07:37:55 AM
29	CCV3	CCV	1	05/10/2017	07:43:07 AM
1	CCB3	CCB	1	05/10/2017	07:46:56 AM
33	ICSA2	ICSA	1	05/10/2017	07:50:11 AM
34	ICSAB2	ICSAB	1	05/10/2017	07:53:31 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/1/2017 8:45:30 A**
Prep End Date: **5/1/2017 2:00:00 P**

Reviewed/ Date: 5/11/2017

Initials/ Date: for 5/11/2017

Prep Batch **62096** Prep Code: **200.7_PR** Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-41**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-62096	Aqueous		25	☐	0	0	25	1.000		
LCS2-62096	Aqueous	<2	25	☐	0	0	25	1.000		
MB-62096	Aqueous		25	☐	0	0	25	1.000		
N023998-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-013D	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-014D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8914	HYDROCHLORIC ACID
8921	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium	LCS,MS,MSD	0.05
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-170430B	ICP Solution B	LCS,MS,MSD	0.5
MWST-170430J	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170504C

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	05/04/2017	02:20:04 PM	Mg	279.079	85	0.00	mg/L	
Standard1	05/04/2017	02:24:54 PM	Mg	279.079	1819	0.1000	mg/L	
Standard2	05/04/2017	02:29:43 PM	Mg	279.079	15428	1.000	mg/L	
Standard3	05/04/2017	02:34:33 PM	Mg	279.079	31819	2.000	mg/L	
Standard4	05/04/2017	02:39:25 PM	Mg	279.079	78870	5.000	mg/L	
Standard5	05/04/2017	02:45:18 PM	Mg	279.079	118144	7.500	mg/L	
Standard6	05/04/2017	02:51:10 PM	Mg	279.079	150960	10.000	mg/L	
Standard7	05/04/2017	02:56:35 PM	Mg	279.079	298532	20.000	mg/L	0.9998
Calcium								
CalBlk	05/04/2017	02:20:04 PM	Ca	227.546	-142	0.00	mg/L	
Standard1	05/04/2017	02:24:54 PM	Ca	227.546	90	0.2000	mg/L	
Standard2	05/04/2017	02:29:43 PM	Ca	227.546	371	1.000	mg/L	
Standard3	05/04/2017	02:34:33 PM	Ca	227.546	767	2.000	mg/L	
Standard4	05/04/2017	02:39:25 PM	Ca	227.546	1950	5.000	mg/L	
Standard5	05/04/2017	02:45:18 PM	Ca	227.546	2931	7.500	mg/L	
Standard6	05/04/2017	02:51:10 PM	Ca	227.546	3836	10.000	mg/L	
Standard7	05/04/2017	02:56:35 PM	Ca	227.546	7779	20.000	mg/L	1.0000
Iron								
CalBlk	05/04/2017	02:20:04 PM	Fe	273.953	101	0.00	mg/L	
Standard1	05/04/2017	02:24:54 PM	Fe	273.953	817	0.0200	mg/L	
Standard2	05/04/2017	02:29:43 PM	Fe	273.953	2369	0.050	mg/L	
Standard3	05/04/2017	02:34:33 PM	Fe	273.953	65281	2.000	mg/L	
Standard4	05/04/2017	02:39:25 PM	Fe	273.953	163812	5.000	mg/L	
Standard5	05/04/2017	02:45:18 PM	Fe	273.953	246898	7.500	mg/L	
Standard6	05/04/2017	02:51:10 PM	Fe	273.953	315221	10.000	mg/L	
Standard7	05/04/2017	02:56:35 PM	Fe	273.953	621133	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 170510A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	05/10/2017	04:53:19 AM	Na	589.594	14	0.00	mg/L	
Standard1	05/10/2017	04:56:37 AM	Na	589.594	222	0.1000	mg/L	
Standard2	05/10/2017	04:59:56 AM	Na	589.594	2085	1.000	mg/L	
Standard3	05/10/2017	05:04:02 AM	Na	589.594	11007	5.000	mg/L	
Standard4	05/10/2017	05:07:50 AM	Na	589.594	21286	10.000	mg/L	
Standard5	05/10/2017	05:11:39 AM	Na	589.594	42431	20.000	mg/L	
Standard6	05/10/2017	05:15:28 AM	Na	589.594	84696	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICV**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636363**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9871.799	500	10000	0	98.7	90	110				
Iron	10121.306	20	10000	0	101	90	110				
Magnesium	10120.565	100	10000	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	214.830	500	200.0	0	107	80	120				
Iron	25.834	20	20.00	0	129	80	120				S
Magnesium	114.339	100	100.0	0	114	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **CCV**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9762.474	500	10000	0	97.6	90	110				
Iron	10011.358	20	10000	0	100	90	110				
Magnesium	9759.020	100	10000	0	97.6	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	232.158	500	200.0	0	116	70	130				
Iron	32.275	20	20.00	0	161	70	130				S
Magnesium	125.136	100	100.0	0	125	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

Fe on LLICV and LLCCV1 is biased high however, samples are non-detect for this analyte.

5/11/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICV**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10029.032	500	10000	0	100	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCV**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10093.851	500	10000	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCV**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10374.468	500	10000	0	104	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCV**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10407.612	500	10000	0	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636364**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-21.631313	500									
Iron	0.627	20									
Magnesium	-3.043748	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **CCB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.374	500									
Iron	4.575	20									
Magnesium	0.198	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-32.264848	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638590**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-14.309436	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-26.876838	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **CCB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-28.283373	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSA**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636366**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	508567.923	50	500000	0	102	80	120				
Calcium	500179.868	500	500000	0	100	80	120				
Iron	171988.374	20	200000	0	86.0	80	120				
Magnesium	474474.267	100	500000	0	94.9	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSAB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549099.057	50	500000	0	110	80	120				
Calcium	540938.362	500	500000	0	108	80	120				
Iron	182720.265	20	200000	0	91.4	80	120				
Magnesium	508310.824	100	500000	0	102	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSA**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505209.714	50	500000	0	101	80	120				
Calcium	495585.821	500	500000	0	99.1	80	120				
Iron	169543.202	20	200000	0	84.8	80	120				
Magnesium	462184.820	100	500000	0	92.4	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSAB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	545517.976	50	500000	0	109	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ICSAB**	Batch ID: **R115046**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636385**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	536989.372	500	500000	0	107	80	120				
Iron	181256.680	20	200000	0	90.6	80	120				
Magnesium	500946.458	100	500000	0	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICSA**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-24.538285	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICSAB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9963.835	500	10000	0	99.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICSA**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-34.847386	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ICSAB**	Batch ID: **R115123**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10293.052	500	10000	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170504C

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.003	100.3	65-125	PASS
Standard2	ICAL	1	1.013	101.27	65-125	PASS
Standard3	ICAL	1	1.0023	100.23	65-125	PASS
Standard4	ICAL	1	0.99	98.65	65-125	PASS
Standard5	ICAL	1	0.99	98.66	65-125	PASS
Standard6	ICAL	1	0.97	96.75	65-125	PASS
Standard7	ICAL	1	0.96	95.6	65-125	PASS
ICV	ICV	1	0.97	97.077	65-125	PASS
ICB	ICB	1	1.0045	100.45	65-125	PASS
LLICV	CCV1	1	1.0083	100.83	65-125	PASS
ICSA1	ICSA	1	0.91	90.77	65-125	PASS
ICSAB1	ICSAB	1	0.85	85.43	65-125	PASS
LLICV	CCV1	1	1.0074	100.74	65-125	PASS
MB-62096	MBLK	1	1.049	104.91	65-125	PASS
LCS1-62096	LCS	1	0.96	96.36	65-125	PASS
N023998-001B	SAMP	1	0.96	96.4	65-125	PASS
N023998-001B	SAMP	5	1.007	100.7	65-125	PASS
N023998-001B-PS	PS	1	0.97	96.86	65-125	PASS
N023998-001B-MS1	MS	1	0.96	95.66	65-125	PASS
N023998-001B-MSD1	MSD	1	0.96	96.49	65-125	PASS
N023998-002B	SAMP	1	0.91	90.93	65-125	PASS
N024053-013D	SAMP	1	0.9	89.81	65-125	PASS
N024053-014D	SAMP	1	0.89	88.97	65-125	PASS
CCV1	CCV	1	0.98	98	65-125	PASS
CCB1	CCB	1	0.98	98.14	65-125	PASS
LLCCV1	CCV2	1	1.0064	100.64	65-125	PASS
LLCCV1	CCV2	1	1.009	100.9	65-125	PASS
LLCCV1	CCV2	1	0.99	99.35	65-125	PASS
ICSA2	ICSA	1	0.89	89.017	65-125	PASS
ICSAB2	ICSAB	1	0.84	83.97	65-125	PASS

INTERNAL STANDARD: 170510A

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.97	97.2	65-125	PASS
Standard2	ICAL	1	0.97	97.46	65-125	PASS
Standard3	ICAL	1	0.97	96.86	65-125	PASS
Standard4	ICAL	1	0.97	97.02	65-125	PASS
Standard5	ICAL	1	0.97	96.81	65-125	PASS
Standard6	ICAL	1	0.97	97.37	65-125	PASS
ICV	ICV	1	0.97	97.5	65-125	PASS
ICB	ICB	1	0.99	98.7	65-125	PASS
ICSA1	ICSA	1	0.98	98.37	65-125	PASS
ICSAB1	ICSAB	1	0.97	97.17	65-125	PASS
MB-62096	MBLK	1	0.98	97.96	65-125	PASS
LCS2-62096	LCS	1	1.085	108.49	65-125	PASS
N023998-001B	SAMP	10	0.97	97.04	65-125	PASS
N023998-002B	SAMP	10	0.95	95.11	65-125	PASS
N024053-013D	SAMP	10	0.95	94.74	65-125	PASS
N024053-014D	SAMP	10	0.95	95.1	65-125	PASS
N023998-001B	SAMP	50	0.98	98.24	65-125	PASS
N024053-013D	SAMP	50	0.98	97.99	65-125	PASS
N024053-014D	SAMP	50	0.98	98.44	65-125	PASS
N023998-002B	SAMP	50	0.97	97.42	65-125	PASS
CCV1	CCV	1	0.97	97.41	65-125	PASS
CCB1	CCB	1	0.98	98.11	65-125	PASS
N023998-002B	SAMP	250	0.97	97.17	65-125	PASS
N023998-002B-PS	PS	50	0.97	96.85	65-125	PASS
N023998-002B-MS2	MS	50	0.98	97.67	65-125	PASS
N023998-002B-MSD2	MSD	50	0.97	97.34	65-125	PASS
N023998-002B	SAMP	250	0.97	97.35	65-125	PASS
CCV2	CCV	1	0.64	63.82	65-125	NR!
CCV2	CCV	1	0.97	97.39	65-125	PASS
CCB2	CCB	1	0.98	98.24	65-125	PASS
CCV3	CCV	1	0.45	44.53	65-125	NR!
CCV3	CCV	1	0.99	98.79	65-125	PASS
CCB3	CCB	1	1	99.88	65-125	PASS
ICSA2	ICSA	1	1	99.52	65-125	PASS
ICSAB2	ICSAB	1	0.99	99.005	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N024053
Test Method: EPA 200.7
Analysis Date: 5/4/2017

Matrix: Groundwater
Batch No.: 62096

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023998-001B DT 5X	Calcium	ug/L	121862.2	PASS	116949.5	4.20%	10
N023998-001B DT 5X	Iron	ug/L	0	NA	6.351824	100.00%	10
N023998-001B DT 5X	Magnesium	ug/L	27392.26	PASS	25142.39	8.95%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N024053
Test Method: EPA 200.7
Analysis Date: 5/10/2017

Matrix: Groundwater
Batch No.: 62096

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023998-002B DT 250X	Sodium	ug/L	1552884	PASS	1605552	3.28%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N023998-001B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115046**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/4/2017**	SeqNo: **2636373**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	126865.337	500	10000	116900	99.2	80	120				
Iron	106.749	20	100.0	6.352	100	80	120				
Magnesium	34410.937	100	10000	25140	92.7	80	120				

Sample ID **N023998-002B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115123**
Client ID: **ZZZZZZ**	Batch ID: **62096**	TestNo: **EPA 200.7**		Analysis Date: **5/10/2017**	SeqNo: **2638592**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1559368.971	25000	20000	1606000	-231	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

EPA 200.8
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62097
ASSET #: N024053

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/2/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 5/12/2017 Date: _____

2nd Level Reviewer _____ 5/12/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA ~~6020~~ 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N024053-013D** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 105.681 * 5 * (25/25)

Chromium , ug/L = 528.405

Reporting results in two significant figures,

Chromium , ug/L = 530

% RSD SUMMARY

PERCENT RSD SUMMARY: 170502B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.096	6.2	15	PASS	0.11	4.16	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	3.28	15	PASS	0.52	5.62	15	PASS
Std3-5/50 ppb	ICAL	1	4.96	2.48	15	PASS	4.95	1.11	15	PASS
Std4-10/100 ppb	ICAL	1	10.076	2.37	15	PASS	10.11	1.074	15	PASS
Std5-20/200 ppb	ICAL	1	20.27	1.75	15	PASS	20.039	1.33	15	PASS
Std6-40/400 ppb	ICAL	1	40.51	0.92	15	PASS	40.43	0.98	15	PASS
Std7-100/1000 ppb	ICAL	1	99.91	1.0055	15	PASS	100.15	0.75	15	PASS
Std8-200/2000 ppb	ICAL	1	199.91	0.41	15	PASS	199.83	0.63	15	PASS
ICV	ICV	1	10.13	1.15	15	PASS	101.36	1.55	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.0062	157.0073	15	<PQL
LLICV	CCV1	1	1	4.42	20	PASS	0.56	7.64	20	PASS
ICSA1	ICSA	1	0.056	26.2	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.46	1.88	15	PASS	18.79	3.39	15	PASS
CCV1	CCV	1	20.59	1.81	15	PASS	20.47	2.48	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0073	150.44	15	<PQL
MB-62097	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-62097	LCS	1	10.0043	1.62	15	PASS	99.12	0.86	15	PASS
N023998-001B	SAMP	1	0.42	1.58	15	PASS	102.64	1.14	15	PASS
N023998-001B	SAMP	5	0.079	17.82	15	<PQL	21.91	2.48	15	PASS
N023998-001B	SAMP	25	0.0055	26.92	15	<PQL	4.56	1.62	15	PASS
N023998-001B-PS	PS	1	9.64	0.85	15	PASS	192.8	0.6	15	PASS
N023998-001B-PS	PS	5	2.098	3.63	15	PASS	41.97	1.83	15	PASS
N023998-001B-MS	MS	1	9.028	4.076	15	PASS	180.34	4.99	15	PASS
N023998-001B-MS	MS	5	2.12	1.57	15	PASS	44.49	3.78	15	PASS
N023998-001B-MSD	MSD	1	9.57	6.64	15	PASS	187.41	6.2	15	PASS
CCV2	CCV	1	20.18	2.033	15	PASS	21.26	4.61	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0092	74.82	15	<PQL
N023998-001B-MSD	MSD	5	2.25	6.32	15	PASS	42.96	1.83	15	PASS
N023998-002B	SAMP	1	517.29	0.69	15	PASS	11.6	1.32	15	PASS
N023998-002B	SAMP	5	113.72	1.32	15	PASS	2.61	2.65	15	PASS
N024008-003C	SAMP	1	<0.000	N/A	15	<PQL	10.2	2.99	15	PASS
N024008-003C	SAMP	5	<0.000	N/A	15	<PQL	2.24	4.78	15	PASS
N024053-013D	SAMP	1	496.22	0.61	15	PASS	14.089	1.67	15	PASS
N024053-013D	SAMP	5	105.68	0.96	15	PASS	3.071	2.8	15	PASS
N024053-014D	SAMP	1	493.88	0.75	15	PASS	15.42	1.27	15	PASS
N024053-014D	SAMP	5	105.11	0.58	15	PASS	3.22	1.61	15	PASS
CCV3	CCV	1	20.49	1.0076	15	PASS	20.42	0.71	15	PASS
CCB3	CCB	1	0.012	60.29	15	<PQL	0.0049	136.18	15	<PQL
LLCCV1	CCV2	1	1.071	3.27	20	PASS	0.54	5.22	20	PASS
ICSA2	ICSA	1	0.076	2.76	15	PASS	<0.000	N/A	15	<PQL

PERCENT RSD SUMMARY: 170502B

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSAB2	ICSAB	1	20.25	0.69	15	PASS	19.27	0.6	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170502B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0502001.D	RINSE	RINSE	1	05/02/17 9:38 PM
B0502002.D	Cal Blank	IBLK	1	05/02/17 9:46 PM
B0502003.D	Std1-0.1/1 ppb	ICAL	1	05/02/17 9:52 PM
B0502004.D	Std2-0.5/5 ppb	ICAL	1	05/02/17 9:58 PM
B0502005.D	Std3-5/50 ppb	ICAL	1	05/02/17 10:03 PM
B0502006.D	Std4-10/100 ppb	ICAL	1	05/02/17 10:09 PM
B0502007.D	Std5-20/200 ppb	ICAL	1	05/02/17 10:14 PM
B0502008.D	Std6-40/400 ppb	ICAL	1	05/02/17 10:20 PM
B0502009.D	Std7-100/1000 ppb	ICAL	1	05/02/17 10:26 PM
B0502010.D	Std8-200/2000 ppb	ICAL	1	05/02/17 10:31 PM
B0502011.D	ICV	ICV	1	05/02/17 10:37 PM
B0502012.D	ICB	ICB	1	05/02/17 10:42 PM
B0502013.D	LLICV	CCV1	1	05/02/17 10:48 PM
B0502014.D	ICSA1	ICSA	1	05/02/17 10:53 PM
B0502015.D	ICSAB1	ICSAB	1	05/02/17 10:59 PM
B0502016.D	N023934-009B	SAMP	1	05/02/17 11:04 PM
B0502017.D	N023934-009A	SAMP	1	05/02/17 11:10 PM
B0502018.D	N023950-009B	SAMP	1	05/02/17 11:16 PM
B0502019.D	N023950-009A	SAMP	1	05/02/17 11:21 PM
B0502020.D	N023950-012B	SAMP	1	05/02/17 11:27 PM
B0502021.D	N023950-012A	SAMP	1	05/02/17 11:32 PM
B0502022.D	N023950-013B	SAMP	1	05/02/17 11:38 PM
B0502023.D	N023950-013A	SAMP	1	05/02/17 11:43 PM
B0502024.D	N023950-016B	SAMP	1	05/02/17 11:49 PM
B0502025.D	N023950-016A	SAMP	1	05/02/17 11:55 PM
B0502026.D	CCV1	CCV	1	05/03/17 12:00 AM
B0502027.D	CCB1	CCB	1	05/03/17 12:06 AM
B0502028.D	MB-62097	MBLK	1	05/03/17 12:11 AM
B0502029.D	LCS-62097	LCS	1	05/03/17 12:17 AM
B0502030.D	N023998-001B	SAMP	1	05/03/17 12:22 AM
B0502031.D	N023998-001B	SAMP	5	05/03/17 12:28 AM
B0502032.D	N023998-001B	SAMP	25	05/03/17 12:34 AM
B0502033.D	N023998-001B-PS	PS	1	05/03/17 12:39 AM
B0502034.D	N023998-001B-PS	PS	5	05/03/17 12:45 AM
B0502035.D	N023998-001B-MS	MS	1	05/03/17 12:50 AM
B0502036.D	N023998-001B-MS	MS	5	05/03/17 12:56 AM
B0502037.D	N023998-001B-MSD	MSD	1	05/03/17 1:02 AM
B0502038.D	CCV2	CCV	1	05/03/17 1:07 AM
B0502039.D	CCB2	CCB	1	05/03/17 1:13 AM
B0502040.D	N023998-001B-MSD	MSD	5	05/03/17 1:18 AM
B0502041.D	N023998-002B	SAMP	1	05/03/17 1:24 AM
B0502042.D	N023998-002B	SAMP	5	05/03/17 1:29 AM

INJECTION LOG: 170502B

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
B0502043.D	N024008-003C	SAMP	1	05/03/17 1:35 AM
B0502044.D	N024008-003C	SAMP	5	05/03/17 1:41 AM
B0502045.D	N024053-013D	SAMP	1	05/03/17 1:46 AM
B0502046.D	N024053-013D	SAMP	5	05/03/17 1:52 AM
B0502047.D	N024053-014D	SAMP	1	05/03/17 1:57 AM
B0502048.D	N024053-014D	SAMP	5	05/03/17 2:03 AM
B0502049.D	MB-62098	MBLK	1	05/03/17 2:08 AM
B0502050.D	CCV3	CCV	1	05/03/17 2:14 AM
B0502051.D	CCB3	CCB	1	05/03/17 2:20 AM
B0502052.D	LLCCV1	CCV2	1	05/03/17 2:25 AM
B0502053.D	ICSA2	ICSA	1	05/03/17 2:31 AM
B0502054.D	ICSAB2	ICSAB	1	05/03/17 2:36 AM
B0502055.D	LCS-62098	LCS	1	05/03/17 2:42 AM
B0502056.D	N023952-001B	SAMP	1	05/03/17 2:48 AM
B0502057.D	N023952-001B	SAMP	5	05/03/17 2:53 AM
B0502058.D	N023952-001B-PS	PS	1	05/03/17 2:59 AM
B0502059.D	N023952-001B-MS	MS	1	05/03/17 3:04 AM
B0502060.D	N023952-001B-MSD	MSD	1	05/03/17 3:10 AM
B0502061.D	N023952-003B	SAMP	1	05/03/17 3:16 AM
B0502062.D	N023952-004B	SAMP	1	05/03/17 3:21 AM
B0502063.D	N023952-005B	SAMP	1	05/03/17 3:28 AM
B0502064.D	N023952-006B	SAMP	1	05/03/17 3:34 AM
B0502065.D	CCV4	CCV	1	05/03/17 3:38 AM
B0502066.D	CCB4	CCB	1	05/03/17 3:44 AM
B0502067.D	N023952-007B	SAMP	1	05/03/17 3:49 AM
B0502068.D	N023952-008B	SAMP	1	05/03/17 3:56 AM
B0502069.D	N023952-009B	SAMP	1	05/03/17 4:01 AM
B0502070.D	N023952-010B	SAMP	1	05/03/17 4:07 AM
B0502071.D	N024040-001B	SAMP	1	05/03/17 4:12 AM
B0502072.D	N024040-002B	SAMP	1	05/03/17 4:18 AM
B0502073.D	N024051-001B	SAMP	1	05/03/17 4:24 AM
B0502074.D	N024051-003B	SAMP	1	05/03/17 4:29 AM
B0502075.D	N024052-001B	SAMP	1	05/03/17 4:35 AM
B0502076.D	CCV5	CCV	1	05/03/17 4:40 AM
B0502077.D	CCB5	CCB	1	05/03/17 4:46 AM
B0502078.D	N024052-002B	SAMP	1	05/03/17 4:51 AM
B0502079.D	N024054-001B	SAMP	1	05/03/17 4:57 AM
B0502080.D	N024054-003B	SAMP	1	05/03/17 5:03 AM
B0502081.D	CCV6	CCV	1	05/03/17 5:08 AM
B0502082.D	CCB6	CCB	1	05/03/17 5:14 AM
B0502083.D	LLCCV2	CCV2	1	05/03/17 5:19 AM
B0502084.D	ICSA3	ICSA	1	05/03/17 5:25 AM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/1/2017 8:51:23 A**
Prep End Date: **5/1/2017 1:00:00 P**
Prep Batch **62097** Prep Code: **200.8_PR**

Reviewed/ Date: 5/12/2017
Initials/ Date: 5/12/2017
Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62097	Aqueous		25	☐	0	0	25	1.000		
MB-62097	Aqueous		25	☐	0	0	25	1.000		
N023998-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N023998-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024008-003C	Wastewater	<2	25	☐	0	0	25	1.000		
N024053-013D	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-014D	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 2 May 2017 12:39:00 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	118464.00	0.00	
24 Mg	464340.00	0.00	
25 Mg	61225.10	0.00	
26 Mg	70601.30	0.00	
59 Co	552633.00	0.00	
115 In	882688.00	0.00	
206 Pb	252416.00	0.00	
207 Pb	219318.00	0.00	
208 Pb	539584.00	0.00	

RSD (%)

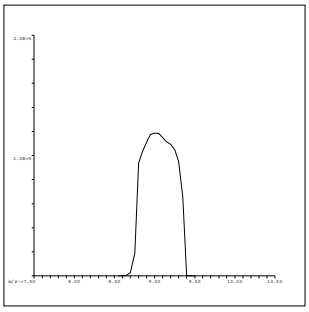
Element	Actual	Required	Flag
9 Be	1.29	5.00	
24 Mg	1.28	5.00	
25 Mg	1.99	5.00	
26 Mg	1.14	5.00	
59 Co	0.41	5.00	
115 In	0.71	5.00	
206 Pb	1.09	5.00	
207 Pb	1.12	5.00	
208 Pb	1.21	5.00	

Ion Ratio

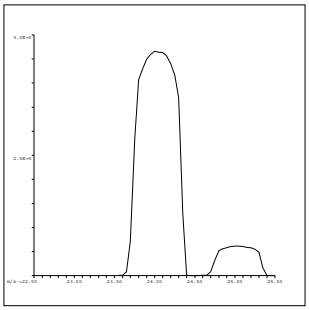
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

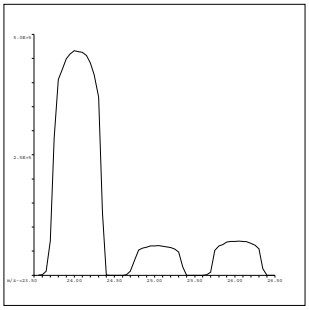
Element	Actual	Required	Flag



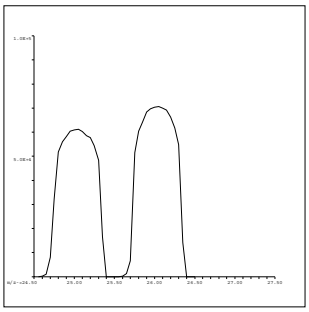
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



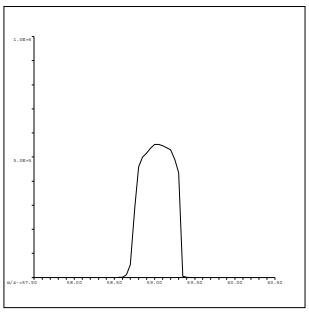
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



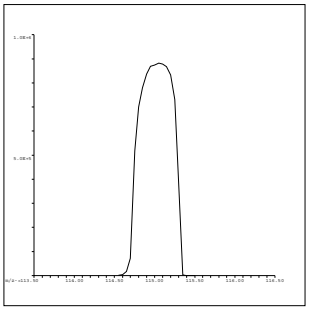
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



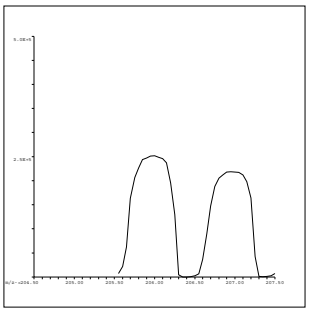
26 Mg
Mass Calib.
Actual: 26.05
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



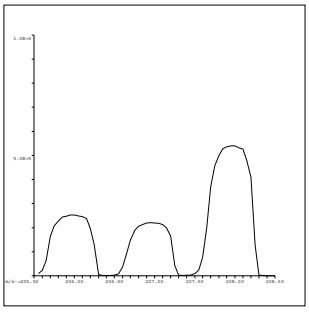
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



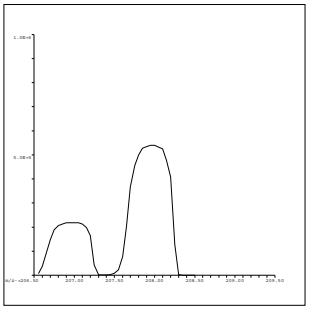
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 206.95
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 207.95
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170502B

Instrument ID: ICPMS-02

Analyte	Data File	B0502002.D	B0502004.D	B0502005.D	B0502006.D	B0502007.D	B0502008.D	B0502009.D	B0502010.D	
	Acq. Date-Time	05/02/2017 09:46 PM	05/02/2017 09:58 PM	05/02/2017 10:03 PM	05/02/2017 10:09 PM	05/02/2017 10:14 PM	05/02/2017 10:20 PM	05/02/2017 10:26 PM	05/02/2017 10:31 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	53935.8	51102.6	51323.3	52499.2	51842.9	53728.7	52408.9	51901.8	
55 Mn [2]	CPS	32	1115.6	10454.4	21808.8	42651.4	89171.5	215381.5	425586.4	1.0000
52 Cr [2]	CPS	115.5	2289.1	22027.2	45663.3	90615.7	187568.6	451069	893752.9	1.0000

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634730**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	101.358	0.50	100.0	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634732**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.563	0.50	0.5000	0	113	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634745**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.473	0.50	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.259	0.50	20.00	0	106	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.416	0.50	20.00	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634771**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.540	0.50	0.5000	0	108	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.133	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ZZZZZZ**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.996	1.0	1.000	0	99.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634670**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.594	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.183	1.0	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCV**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.492	1.0	20.00	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	**LLCCV1**	SampType:	**CCV2**	TestCode:	**200.8DIS_Cr**	Units:	**µg/L**	Prep Date:		RunNo:	**115009**
Client ID:	**ZZZZZZ**	Batch ID:	**R115009**	TestNo:	**EPA 200.8**			Analysis Date:	**5/3/2017**	SeqNo:	**2634696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.071	1.0	1.000	0	107	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634731**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634746**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634770**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634671**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **CCB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSA**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634733**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSAB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634734**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.788	0.50	20.00	0	93.9	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSA**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634772**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSAB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634773**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.272	0.50	20.00	0	96.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSA**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.056	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSAB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/2/2017**	SeqNo: **2634659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.457	1.0	20.00	0	97.3	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSA**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.076	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115009**
Client ID: **ICSAB**	Batch ID: **R115009**	TestNo: **EPA 200.8**		Analysis Date: **5/3/2017**	SeqNo: **2634698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.254	1.0	20.00	0	101	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170502B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	53935.8	53935.8	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	53077.5	53935.8	98.41	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	51102.6	53935.8	94.75	PASS	70-125
Std3-5/50 ppb	ICAL	1	51323.3	53935.8	95.16	PASS	70-125
Std4-10/100 ppb	ICAL	1	52499.2	53935.8	97.34	PASS	70-125
Std5-20/200 ppb	ICAL	1	51842.9	53935.8	96.12	PASS	70-125
Std6-40/400 ppb	ICAL	1	53728.7	53935.8	99.62	PASS	70-125
Std7-100/1000 ppb	ICAL	1	52408.9	53935.8	97.17	PASS	70-125
Std8-200/2000 ppb	ICAL	1	51901.8	53935.8	96.23	PASS	70-125
ICV	ICV	1	51760.1	53935.8	95.97	PASS	70-125
ICB	ICB	1	53382.8	53935.8	98.97	PASS	70-125
LLICV	CCV1	1	50174.2	53935.8	93.026	PASS	70-125
ICSA1	ICSA	1	55017.2	53935.8	102.01	PASS	70-125
ICSAB1	ICSAB	1	59430	53935.8	110.19	PASS	70-125
CCV1	CCV	1	46030.1	53935.8	85.34	PASS	70-125
CCB1	CCB	1	43680.6	53935.8	80.99	PASS	70-125
MB-62097	MBLK	1	40299.7	53935.8	74.72	PASS	70-125
LCS-62097	LCS	1	50120.5	53935.8	92.93	PASS	70-125
N023998-001B	SAMP	1	44205.3	53935.8	81.96	PASS	70-125
N023998-001B	SAMP	5	47496.4	53935.8	88.061	PASS	70-125
N023998-001B	SAMP	25	50846.4	53935.8	94.27	PASS	70-125
N023998-001B-PS	PS	1	52567.3	53935.8	97.46	PASS	70-125
N023998-001B-PS	PS	5	49314.8	53935.8	91.43	PASS	70-125
N023998-001B-MS	MS	1	47423.8	53935.8	87.93	PASS	70-125
N023998-001B-MS	MS	5	47235.1	53935.8	87.58	PASS	70-125
N023998-001B-MSD	MSD	1	48665.9	53935.8	90.23	PASS	70-125
CCV2	CCV	1	51615.7	53935.8	95.7	PASS	70-125
CCB2	CCB	1	50522.4	53935.8	93.67	PASS	70-125
N023998-001B-MSD	MSD	5	47801.6	53935.8	88.63	PASS	70-125
N023998-002B	SAMP	1	51023.6	53935.8	94.6	PASS	70-125
N023998-002B	SAMP	5	56464.3	53935.8	104.69	PASS	70-125
N024008-003C	SAMP	1	50128.6	53935.8	92.94	PASS	70-125
N024008-003C	SAMP	5	48290.9	53935.8	89.53	PASS	70-125
N024053-013D	SAMP	1	50064	53935.8	92.82	PASS	70-125
N024053-013D	SAMP	5	56250.1	53935.8	104.29	PASS	70-125
N024053-014D	SAMP	1	53546.1	53935.8	99.28	PASS	70-125
N024053-014D	SAMP	5	58403.2	53935.8	108.28	PASS	70-125
CCV3	CCV	1	57517.7	53935.8	106.64	PASS	70-125
CCB3	CCB	1	52013.2	53935.8	96.44	PASS	70-125
LLCCV1	CCV2	1	49344	53935.8	91.49	PASS	70-125
ICSA2	ICSA	1	50693.6	53935.8	93.99	PASS	70-125

INTERNAL STANDARD: 170502B

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
ICSAB2	ICSAB	1	55323.9	53935.8	102.57	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024053
Test Method: EPA 6020
Analysis Date: 5/2/2017

Matrix: Groundwater
Batch No.: 62097

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N023998-001B DT 5X	Chromium	ug/L	0.394258	NA	0.41709	5.47%	10
N023998-001B DT 25X	Manganese	ug/L	113.9062	PASS	109.5403	3.99%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N023998-001B-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **115009**
Client ID: **ZZZZZZ** Batch ID: **62097** TestNo: **EPA 200.8** Analysis Date: **5/3/2017** SeqNo: **2634753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	209.834	2.5	100.0	109.5	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	N023998-001B-PS	SampType:	PS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	115009
Client ID:	ZZZZZZ	Batch ID:	62097	TestNo:	EPA 200.8			Analysis Date:	5/3/2017	SeqNo:	2634677

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.644	1.0	10.00	0.4171	92.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115040
ASSET #: N024053

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/3/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X				
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?		X				
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?	X					
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

Dilution were necessary for N024053-005A/006A/008A/010A due to matrix interference.
N024053-001A(218.6) = 0.079ppb ; N024053-001B(6020) = 1.3ppb MS protocol performed. Recovery within criteria.
~~**N024053-015A(218.6) = 7000ppb ; N024053-015B(6020) = 1500ppb**~~ 7400 n/a

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/7/2017

2nd Level Reviewer: 5/15/2017 Date: ——

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115041
ASSET #: N024053

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/3/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

~~Dilution were necessary for N024053-013A and -014A due to matrix interference~~.

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/7/2017

2nd Level Reviewer: 5/15/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N024053-009A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 7.6676 * 5$$

$$Cr^{+6}, \mu g/L = 38.34$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 38}$$

rba 5/7/2017

ANALYSIS RUN LOG

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005A	SAMP	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-1,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-1,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-2,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-2,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-3,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-3,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,10
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-4,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-4,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	~~N023912-005AMS,MS~~	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL N023912-005A,SAMP,1
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-5,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-5,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 9:15 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 9:26 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/03/17 9:35 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/03/17 9:45 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/03/17 9:54 AM	Reported
17	MB-R115040	MBLK	1	Hexavalent Chromium	05/03/17 10:04 AM	Reported
18	LCS-R115040	LCS	1	Hexavalent Chromium	05/03/17 10:13 AM	Reported
19	N024053-001A	SAMP	1	Hexavalent Chromium	05/03/17 10:43 AM	Reported
20	N024053-001AMS	MS	1	Hexavalent Chromium	05/03/17 10:54 AM	Reported
21	N024053-002A	SAMP	1	Hexavalent Chromium	05/03/17 11:03 AM	Reported
22	N024053-002AMS	MS	1	Hexavalent Chromium	05/03/17 11:13 AM	Reported
23	N024053-003A	SAMP	1	Hexavalent Chromium	05/03/17 11:22 AM	Reported
24	N024053-003AMS	MS	1	Hexavalent Chromium	05/03/17 11:32 AM	Reported
25	N024053-004A	SAMP	1	Hexavalent Chromium	05/03/17 11:41 AM	Reported
26	N024053-004AMS	MS	1	Hexavalent Chromium	05/03/17 11:51 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/03/17 12:00 PM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/03/17 12:09 PM	Reported
29	N024053-005A	SAMP	1	Hexavalent Chromium	05/03/17 12:19 PM	Not Reported
30	N024053-005AMS	MS	1	Hexavalent Chromium	05/03/17 12:28 PM	Not Reported
31	N024053-006A	SAMP	1	Hexavalent Chromium	05/03/17 12:38 PM	Not Reported
32	N024053-006AMS	MS	1	Hexavalent Chromium	05/03/17 12:47 PM	Not Reported
33	N024053-007A	SAMP	1	Hexavalent Chromium	05/03/17 12:57 PM	Reported
34	N024053-007AMS	MS	1	Hexavalent Chromium	05/03/17 1:06 PM	Reported
35	N024053-008A	SAMP	1	Hexavalent Chromium	05/03/17 1:16 PM	Not Reported
36	N024053-008AMS	MS	1	Hexavalent Chromium	05/03/17 1:25 PM	Not Reported
37	N024053-008A	SAMP	5	Hexavalent Chromium	05/03/17 1:35 PM	Reported
38	N024053-008AMS	MS	5	Hexavalent Chromium	05/03/17 1:44 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/03/17 1:54 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/03/17 2:03 PM	Reported
41	N024053-009A	SAMP	5	Hexavalent Chromium	05/03/17 2:12 PM	Reported
42	N024053-009AMS	MS	5	Hexavalent Chromium	05/03/17 2:22 PM	Not Reported

INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024053-015A	SAMP	1000	Hexavalent Chromium	05/03/17 2:31 PM	Reported
44	N024053-015AMS	MS	1000	Hexavalent Chromium	05/03/17 2:41 PM	Reported
45	N024053-015AMSD	MSD	1000	Hexavalent Chromium	05/03/17 2:50 PM	Reported
46	N024071-001A	SAMP	1	Hexavalent Chromium	05/03/17 3:00 PM	Reported
47	N024071-002A	SAMP	1	Hexavalent Chromium	05/03/17 3:09 PM	Reported
48	N024071-003A	SAMP	1	Hexavalent Chromium	05/03/17 3:19 PM	Reported
49	N024053-010A	SAMP	1	Hexavalent Chromium	05/03/17 3:28 PM	Not Reported
50	N024053-010AMS	MS	1	Hexavalent Chromium	05/03/17 3:38 PM	Not Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/03/17 3:47 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/03/17 3:57 PM	Reported
53	N024053-011A	SAMP	1	Hexavalent Chromium	05/03/17 4:06 PM	Reported
54	N024053-011AMS	MS	1	Hexavalent Chromium	05/03/17 4:15 PM	Reported
55	N024053-012A	SAMP	1	Hexavalent Chromium	05/03/17 4:25 PM	Reported
56	N024053-012AMS	MS	1	Hexavalent Chromium	05/03/17 4:34 PM	Reported
57	N024053-013A	SAMP	1	Hexavalent Chromium	05/03/17 4:44 PM	Not Reported
58	N024053-013AMS	MS	1	Hexavalent Chromium	05/03/17 4:53 PM	Not Reported
59	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 5:07 PM	Not Reported
60	N024038-014A	SAMP	5	Hexavalent Chromium	05/03/17 5:24 PM	Reported
61	N024038-014AMS	MS	5	Hexavalent Chromium	05/03/17 5:36 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	05/03/17 5:45 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	05/03/17 5:55 PM	Reported
64	N024053-005A	SAMP	5	Hexavalent Chromium	05/03/17 6:04 PM	Reported
65	N024053-005AMS	MS	5	Hexavalent Chromium	05/03/17 6:14 PM	Reported
66	N024053-006A	SAMP	5	Hexavalent Chromium	05/03/17 6:23 PM	Reported
67	N024053-006AMS	MS	5	Hexavalent Chromium	05/03/17 6:33 PM	Reported
68	N024053-010A	SAMP	5	Hexavalent Chromium	05/03/17 6:42 PM	Reported
69	N024053-010AMS	MS	5	Hexavalent Chromium	05/03/17 6:52 PM	Reported
70	N024053-009ADUP	DUP	5	Hexavalent Chromium	05/03/17 7:01 PM	Reported
71	LCS-R115041	LCS	1	Hexavalent Chromium	05/03/17 7:10 PM	Reported
72	MB-R115041	MBLK	1	Hexavalent Chromium	05/03/17 7:20 PM	Reported
73	N024054-001A	SAMP	5	Hexavalent Chromium	05/03/17 7:29 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	05/03/17 7:39 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	05/03/17 7:48 PM	Reported
76	N024054-001AMS	MS	5	Hexavalent Chromium	05/03/17 7:58 PM	Not Reported
77	N024054-001AMSD	MSD	5	Hexavalent Chromium	05/03/17 8:07 PM	Not Reported
78	N024054-002A	SAMP	1	Hexavalent Chromium	05/03/17 8:17 PM	Not Reported
79	N024054-002AMS	MS	1	Hexavalent Chromium	05/03/17 8:26 PM	Not Reported
80	N024054-003A	SAMP	10	Hexavalent Chromium	05/03/17 8:36 PM	Not Reported
81	N024054-003AMS	MS	10	Hexavalent Chromium	05/03/17 8:45 PM	Not Reported
82	N024054-001ADUP	DUP	5	Hexavalent Chromium	05/03/17 8:55 PM	Not Reported
83	N024085-001A	SAMP	2000	Hexavalent Chromium	05/03/17 9:04 PM	Reported
84	N024085-002A	SAMP	2000	Hexavalent Chromium	05/03/17 9:13 PM	Reported

INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N024085-003A	SAMP	2000	Hexavalent Chromium	05/03/17 9:23 PM	Reported
86	CCV-7	CCV	1	Hexavalent Chromium	05/03/17 9:32 PM	Reported
87	CCB-7	CCB	1	Hexavalent Chromium	05/03/17 9:42 PM	Reported
88	N024085-004A	SAMP	1000	Hexavalent Chromium	05/03/17 9:52 PM	Reported
89	N024085-005A	SAMP	200	Hexavalent Chromium	05/03/17 10:01 PM	Reported
90	N024085-006A	SAMP	200	Hexavalent Chromium	05/03/17 10:10 PM	Reported
91	N024085-007A	SAMP	200	Hexavalent Chromium	05/03/17 10:20 PM	Reported
92	N023952-003A	SAMP	1	Hexavalent Chromium	05/03/17 10:29 PM	Not Reported
93	N023952-003AMS	MS	1	Hexavalent Chromium	05/03/17 10:39 PM	Not Reported
94	N023952-004A	SAMP	5	Hexavalent Chromium	05/03/17 10:48 PM	Not Reported
95	N023952-004AMS	MS	5	Hexavalent Chromium	05/03/17 10:58 PM	Not Reported
96	N024053-013A	SAMP	100	Hexavalent Chromium	05/03/17 11:07 PM	Reported
97	N024053-013AMS	MS	100	Hexavalent Chromium	05/03/17 11:16 PM	Reported
98	CCV-8	CCV1	1	Hexavalent Chromium	05/03/17 11:26 PM	Reported
99	CCB-8	CCB	1	Hexavalent Chromium	05/03/17 11:35 PM	Reported
100	N024053-013AMSD	MSD	100	Hexavalent Chromium	05/03/17 11:45 PM	Reported
101	N024053-013ADUP	DUP	100	Hexavalent Chromium	05/03/17 11:54 PM	Reported
102	N024053-014A	SAMP	100	Hexavalent Chromium	05/04/17 12:04 AM	Reported
103	N024053-014AMS	MS	100	Hexavalent Chromium	05/04/17 12:13 AM	Reported
104	CCV-9	CCV	1	Hexavalent Chromium	05/04/17 12:23 AM	Reported
105	CCB-9	CCB	1	Hexavalent Chromium	05/04/17 12:32 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170503A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**04/May/17 14:22:22**
No. of Injections:	**108**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/03/2017 09:15	Finished	
13	BLANK	2	1000	Unknown		05/03/2017 09:26	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/03/2017 09:35	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/03/2017 09:45	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/03/2017 09:54	Finished	CCB R170419B
17	MB-H2O,MBLK,1	6	1000	Unknown		05/03/2017 10:04	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/03/2017 10:13	Finished	LCS, IWST-170330B
19	N024053-001A,SAMP	9	1000	Unknown		05/03/2017 10:43	Finished	SAMP, 10mL
20	N024053-001AMS,MS	10	1000	Unknown		05/03/2017 10:54	Finished	MS (1ppb), IWST-170330B,2>1
21	N024053-002A,SAMP	11	1000	Unknown		05/03/2017 11:03	Finished	SAMP, 10mL
22	N024053-002AMS,MS	12	1000	Unknown		05/03/2017 11:13	Finished	MS (1ppb), IWST-170330B,2>1
23	N024053-003A,SAMP	13	1000	Unknown		05/03/2017 11:22	Finished	SAMP, 10mL
24	N024053-003AMS,MS	14	1000	Unknown		05/03/2017 11:32	Finished	MS (1ppb), IWST-170330B,2>1
25	N024053-004A,SAMP	15	1000	Unknown		05/03/2017 11:41	Finished	SAMP, 10mL
26	N024053-004AMS,MS	16	1000	Unknown		05/03/2017 11:51	Finished	MS (1ppb), IWST-170330B,2>1
27	CCV-2,CCV1,1,	17	1000	Unknown		05/03/2017 12:00	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	18	1000	Unknown		05/03/2017 12:09	Finished	CCB R170419B
29	N024053-005A,SAMP	19	1000	Unknown		05/03/2017 12:19	Finished	SAMP, 10mL
30	N024053-005AMS,MS	20	1000	Unknown		05/03/2017 12:28	Finished	MS (1ppb), IWST-170330B,2>1
31	N024053-006A,SAMP	21	1000	Unknown		05/03/2017 12:38	Finished	SAMP, 10mL
32	N024053-006AMS,MS	22	1000	Unknown		05/03/2017 12:47	Finished	MS (1ppb), IWST-170330B,2>1
33	N024053-007A,SAMP	23	1000	Unknown		05/03/2017 12:57	Finished	SAMP, 10mL
34	N024053-007AMS,MS	24	1000	Unknown		05/03/2017 13:06	Finished	MS (1ppb), IWST-170330B,2>1
35	N024053-008A,SAMP	25	1000	Unknown		05/03/2017 13:16	Finished	SAMP, 10mL
36	N024053-008AMS,MS	26	1000	Unknown		05/03/2017 13:25	Finished	MS (1ppb), IWST-170330B,2>1
37	N024053-008A,SAMP	27	1000	Unknown		05/03/2017 13:35	Finished	SAMP,2>10mL
38	N024053-008AMS,MS	28	1000	Unknown		05/03/2017 13:44	Finished	MS (1ppb), IWST-170330B,2>1
39	CCV-3,CCV,1,	29	1000	Unknown		05/03/2017 13:54	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	30	1000	Unknown		05/03/2017 14:03	Finished	CCB R170419B
41	N024053-009A,SAMP	31	1000	Unknown		05/03/2017 14:12	Finished	SAMP,2>10mL
42	N024053-009AMS,MS	32	1000	Unknown		05/03/2017 14:22	Finished	MS (5ppb), IWST-170330B,2>1
43	N024053-015A,SAMP	33	1000	Unknown		05/03/2017 14:31	Finished	SAMP,0.01>10mL
44	N024053-015AMS,MS	34	1000	Unknown		05/03/2017 14:41	Finished	MS (5ppb), IWST-170330B,0.0
45	N024053-015AMSD,M	35	1000	Unknown		05/03/2017 14:50	Finished	MSD (5ppb), IWST-170330B,0.
46	N024071-001A,SAMP	36	1000	Unknown		05/03/2017 15:00	Finished	SAMP, 10mL
47	N024071-002A,SAMP	37	1000	Unknown		05/03/2017 15:09	Finished	SAMP, 10mL
48	N024071-003A,SAMP	38	1000	Unknown		05/03/2017 15:19	Finished	SAMP, 10mL
49	N024053-010A,SAMP	39	1000	Unknown		05/03/2017 15:28	Finished	SAMP,10mL
50	N024053-010AMS,MS	40	1000	Unknown		05/03/2017 15:38	Finished	MS (1ppb), IWST-170330B,10
51	CCV-4,CCV1,1,	41	1000	Unknown		05/03/2017 15:47	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	42	1000	Unknown		05/03/2017 15:57	Finished	CCB R170419B
53	N024053-011A,SAMP	43	1000	Unknown		05/03/2017 16:06	Finished	SAMP,10mL
54	N024053-011AMS,MS	44	1000	Unknown		05/03/2017 16:15	Finished	MS (1ppb), IWST-170330B,10
55	N024053-012A,SAMP	45	1000	Unknown		05/03/2017 16:25	Finished	SAMP,10mL
56	N024053-012AMS,MS	46	1000	Unknown		05/03/2017 16:34	Finished	MS (1ppb), IWST-170330B,10
57	N024053-013A,SAMP	47	1000	Unknown		05/03/2017 16:44	Finished	SAMP,10mL
58	N024053-013AMS,MS	48	1000	Unknown		05/03/2017 16:53	Finished	MS (1ppb), IWST-170330B,10
59	BLANK	49	1000	Unknown		05/03/2017 17:07	Finished	
60	N024038-014A,SAMP	1	1000	Unknown		05/03/2017 17:24	Finished	SAMP,2>10mL

61	N024038-014AMS,MS	2	1000	Unknown		05/03/2017 17:36	Finished	MS (1ppb), IWST-170330B,2>1
62	CCV-5,CCV,1,	3	1000	Unknown		05/03/2017 17:45	Finished	CCV @5ppb, IWST-170330B
63	CCB-5,CCB,1,	4	1000	Unknown		05/03/2017 17:55	Finished	CCB R170414A
64	N024053-005A,SAMP	5	1000	Unknown		05/03/2017 18:04	Finished	SAMP,2>10mL
65	N024053-005AMS,MS	6	1000	Unknown		05/03/2017 18:14	Finished	MS (1ppb), IWST-170330B,2>1
66	N024053-006A,SAMP	7	1000	Unknown		05/03/2017 18:23	Finished	SAMP,2>10mL
67	N024053-006AMS,MS	8	1000	Unknown		05/03/2017 18:33	Finished	MS (1ppb), IWST-170330B,2>1
68	N024053-010A,SAMP	9	1000	Unknown		05/03/2017 18:42	Finished	SAMP,2>10mL
69	N024053-010AMS,MS	10	1000	Unknown		05/03/2017 18:52	Finished	MS (1ppb), IWST-170330B,2>1
70	N024053-009ADUP,D	11	1000	Unknown		05/03/2017 19:01	Finished	DUP,2>10mL
71	LCS-2,LCS,1	12	1000	Unknown		05/03/2017 19:10	Finished	LCS, IWST-170330B
72	MB-2,MBLK,1	13	1000	Unknown		05/03/2017 19:20	Finished	MB R170419B
73	N024054-001A,SAMP	14	1000	Unknown		05/03/2017 19:29	Finished	SAMP,10mL
74	CCV-6,CCV1,1,	15	1000	Unknown		05/03/2017 19:39	Finished	CCV @10ppb, IWST-170330B
75	CCB-6,CCB,1,	16	1000	Unknown		05/03/2017 19:48	Finished	CCB R170414A
76	N024054-001AMS,MS	17	1000	Unknown		05/03/2017 19:58	Finished	MS (5ppb), IWST-170330B,10
77	N024054-001AMSD,M	18	1000	Unknown		05/03/2017 20:07	Finished	MSD (5ppb), IWST-170330B,10
78	N024054-002A,SAMP	19	1000	Unknown		05/03/2017 20:17	Finished	SAMP,10mL
79	N024054-002AMS,MS	20	1000	Unknown		05/03/2017 20:26	Finished	MS (1ppb), IWST-170330B,10
80	N024054-003A,SAMP	21	1000	Unknown		05/03/2017 20:36	Finished	SAMP,1>10mL
81	N024054-003AMS,MS	22	1000	Unknown		05/03/2017 20:45	Finished	MS (5ppb), IWST-170330B,1>1
82	N024054-001ADUP,D	23	1000	Unknown		05/03/2017 20:55	Finished	DUP,10mL
83	N024085-001A,SAMP	24	1000	Unknown		05/03/2017 21:04	Finished	SAMP,0.005>10mL
84	N024085-002A,SAMP	25	1000	Unknown		05/03/2017 21:13	Finished	SAMP,0.005>10mL
85	N024085-003A,SAMP	26	1000	Unknown		05/03/2017 21:23	Finished	SAMP,0.005>10mL
86	CCV-7,CCV,1,	27	1000	Unknown		05/03/2017 21:32	Finished	CCV @5ppb, IWST-170330B
87	CCB-7,CCB,1,	28	1000	Unknown		05/03/2017 21:42	Finished	CCB R170419B
88	N024085-004A,SAMP	29	1000	Unknown		05/03/2017 21:52	Finished	SAMP,0.01>10mL
89	N024085-005A,SAMP	30	1000	Unknown		05/03/2017 22:01	Finished	SAMP,0.05>10mL
90	N024085-006A,SAMP	31	1000	Unknown		05/03/2017 22:10	Finished	SAMP,0.05>10mL
91	N024085-007A,SAMP	32	1000	Unknown		05/03/2017 22:20	Finished	SAMP,0.05>10mL
92	N023952-003A,SAMP	33	1000	Unknown		05/03/2017 22:29	Finished	SAMP,10mL
93	N023952-003AMS,MS	34	1000	Unknown		05/03/2017 22:39	Finished	MS (5ppb), IWST-170330B,10
94	N023952-004A,SAMP	35	1000	Unknown		05/03/2017 22:48	Finished	SAMP,2>10mL
95	N023952-004AMS,MS	36	1000	Unknown		05/03/2017 22:58	Finished	MS (5ppb), IWST-170330B,2>1
96	N024053-013A,SAMP	37	1000	Unknown		05/03/2017 23:07	Finished	SAMP,0.1>10mL
97	N024053-013AMS,MS	38	1000	Unknown		05/03/2017 23:16	Finished	MS (5ppb), IWST-170330B,0.1
98	CCV-8,CCV1,1,	39	1000	Unknown		05/03/2017 23:26	Finished	CCV @10ppb, IWST-170330B
99	CCB-8,CCB,1,	40	1000	Unknown		05/03/2017 23:35	Finished	CCB R170419B
100	N024053-013AMSD,M	41	1000	Unknown		05/03/2017 23:45	Finished	MS (5ppb), IWST-170330B,0.1
101	N024053-013ADUP,D	42	1000	Unknown		05/03/2017 23:54	Finished	MS (5ppb), IWST-170330B,0.1
102	N024053-014A,SAMP	43	1000	Unknown		05/04/2017 00:04	Finished	MS (5ppb), IWST-170330B,0.1
103	N024053-014AMS,MS	44	1000	Unknown		05/04/2017 00:13	Finished	MS (5ppb), IWST-170330B,0.1
104	CCV-9,CCV,1,	45	1000	Unknown		05/04/2017 00:23	Finished	CCV @5ppb, IWST-170330B
105	CCB-9,CCB,1,	46	1000	Unknown		05/04/2017 00:32	Finished	CCB R170414A
106	SHUTDOWN	47	1000	Unknown		05/04/2017 00:42	Finished	
107	Eluent: R170502A	48	1000	Unknown		n.a.	Finished	Eluent
108	PCR: R170502B	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 4/28/17
Time Prepared: 1000
Prepared By: LSR

CONT

Reagent ID:
Sulfuric Acid: ~~8787~~ lot 8993
Diphenylcarbazide: CINV-161228C
NH4OH + NH4SO4 eluent: M170502A
NH4OH + NH4SO4 buffer: M170419B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024038-010A	9.64	–	~250 ml	~250 ml	–	1 of 2
2)	10A	9.68	–			–	2 of 2
3)	11A	9.61	–			–	
4)	12A	9.61	–			–	
5)	13A	9.63	–			–	
6)	14A	8.88	9.42			+5 drops 6N NaOH	1 of 2
7)	14A	8.90	9.32			↓	2 of 2
8)	15A	9.64	–			–	
9)	N024040-001A	9.28	9.33			+1 drop 6N NaOH	
10)	2A	9.42	–			–	
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 5/1/17
Time Prepared: 1523H
Prepared By: NBA

Slope: 980
pH 4: 4.01 @ 24.4°C
7: 6.96 @ 24.4°C
10: 10.02 @ 24.4°C

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-161228C
NH4OH + NH4SO4 eluent: M170428B / M170502A
NH4OH + NH4SO4 buffer: M170419B / M170414A

6N NaOH: M170308A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024051-001A	9.09	9.42	~250 ml	~250 ml	+5 drops 6N NaOH	M170414A
2)	2A	9.19	9.52			"	
3)	3A	8.98	9.34			"	
4)	N024052-1A	8.89	9.34			"	
5)	2A	8.90	9.39			+6 "	
6)	N024053-1A	9.38	–				1/2 M170419B
7)	1A	9.42	–				2/2
8)	2A	9.43	–				
9)	3A	9.32	–				1/2
10)	3A	9.30	–				2/2
11)	4A	9.42	–				
12)	5A	9.10	9.44			+5 "	1/2
13)	5A	9.12	9.48			+5 "	2/2
14)	6A	9.04	9.35			+5 "	1/2
15)	6A	9.06	9.40			+5 "	2/2
	7A	9.43	–				

Logbook No. 12

nba 5/7/2017

Sample Preparation

Date Prepared: 5/1/17
Time Prepared: 1523 H
Prepared By: RDA

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-161228C
NH4OH + NH4SO4 eluent: M170502A
NH4OH + NH4SO4 buffer: M170419B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M024053 - 8A	8.05	9.40	~250 mL	~250 mL	+12 drops 6N NaOH M170419B	
2)	9A	9.33	-				
3)	10A	9.43	-				
4)	11A	9.55	-				
5)	12A	9.41	-				
6)	13A	9.16	9.57			+5 "	
7)	14A	9.12	9.48			+5 "	
8)	15A	9.42	-				
9)	M024054 - 1A	9.36	-				
10)	2A	9.49	-				
11)	7A	9.20	-				
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 5/2/17
Time Prepared: 1514
Prepared By: RDA

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-161228C
NH4OH + NH4SO4 eluent: M170504A
NH4OH + NH4SO4 buffer: M170419B

6N NaOH: M170308A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M024064-1A	9.22	9.79	~250 mL	~250 mL	+3 drops 6N NaOH M170419B	
2)	2A	9.43	-				
3)	3A	9.38	-				
4)	4A	9.42	-				
5)	5A	9.25	-				
6)	6A	9.45	-				
7)	7A	9.34	-				
8)	8A	9.60	-				
9)	9A	9.34	-				
10)	10A	9.35	-				
11)	11A	9.41	-				
12)	12A	9.12	9.73			+ 3 drops 6N NaOH	
13)	13A	9.33	-				
14)	14A	9.31	-				
15)	15A	9.43	-				
	M024071 - 1A	7.67	9.45			+3 mL M170419B	
	2A	7.76	9.34				
	3A	7.11	9.44				

Logbook No. 12

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/25/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0537	0.2438	1.2243	2.4380	3.6639	4.8727	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST-170330A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ICV**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2636201**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.087	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2636202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCV**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.989	0.20	5.000	0	99.8	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636205**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.198	0.20	0.2000	0	99.0	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.945	0.20	10.00	0	99.4	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCV**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.969	0.20	5.000	0	99.4	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.977	0.20	10.00	0	99.8	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCV**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636241**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.050	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ZZZZZZ**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.979	0.20	10.00	0	99.8	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ICV**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2636141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.087	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2636142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.198	0.20	0.2000	0	99.0	80	120				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **CCV**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.050	0.20	5.000	0	101	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.979	0.20	10.00	0	99.8	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **CCV**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.974	0.20	5.000	0	99.5	95	105				

Sample ID **CCV-8**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636163**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.051	0.20	10.00	0	101	95	105				

Sample ID **CCV-9**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **CCV**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2636169**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.081	0.20	5.000	0	102	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **ICB**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2636203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCB**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCB**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCB**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCB**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCB**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115040**
Client ID: **CCB**	Batch ID: **R115040**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ICB**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2636143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **CCB**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **CCB**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636151**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **CCB**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-8**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **CCB**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636164**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-9**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **CCB**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2636170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/3/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.123	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
CCV-8	4.131	
CCV-9	4.131	
Average	4.130	
Actual RT Window	4.050 - 4.210	
Applied RT Window	3.930 - 4.330	
MB-R115040	N.A.	N.A.
LCS-R115040	4.131	PASS
N024053-001A	4.115	PASS
N024053-001AMS	4.123	PASS
N024053-002A	N.A.	N.A.
N024053-002AMS	4.131	PASS
N024053-003A	N.A.	N.A.
N024053-003AMS	4.098	PASS
N024053-004A	N.A.	N.A.
N024053-004AMS	4.123	PASS
N024053-005A	N.A.	N.A.
N024053-005AMS	3.906	FAIL
N024053-006A	N.A.	N.A.
N024053-006AMS	3.931	PASS
N024053-007A	N.A.	N.A.
N024053-007AMS	4.131	PASS
N024053-008A	N.A.	N.A.
N024053-008AMS	3.923	FAIL
N024053-008A	N.A.	N.A.
N024053-008AMS	4.098	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/3/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.123	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
CCV-8	4.131	
CCV-9	4.131	
Average	4.130	
Actual RT Window	4.050 - 4.210	
Applied RT Window	3.930 - 4.330	
N024053-009A	4.081	PASS
N024053-009AMS	4.081	PASS
N024053-015A	4.131	PASS
N024053-015AMS	4.131	PASS
N024053-015AMSD	4.131	PASS
N024071-001A	4.106	PASS
N024071-002A	N.A.	N.A.
N024071-003A	N.A.	N.A.
N024053-010A	3.740	FAIL
N024053-010AMS	N.A.	N.A.
N024053-011A	N.A.	N.A.
N024053-011AMS	4.123	PASS
N024053-012A	N.A.	N.A.
N024053-012AMS	4.131	PASS
N024053-013A	3.998	PASS
N024053-013AMS	3.998	PASS
N024038-014A	N.A.	N.A.
N024038-014AMS	4.098	PASS
N024053-005A	N.A.	N.A.
N024053-005AMS	4.098	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/3/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.123	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
CCV-8	4.131	
CCV-9	4.131	
Average	4.130	
Actual RT Window	4.050 - 4.210	
Applied RT Window	3.930 - 4.330	
N024053-006A	N.A.	N.A.
N024053-006AMS	4.098	PASS
N024053-010A	4.073	PASS
N024053-010AMS	4.073	PASS
N024053-009ADUP	4.073	PASS
LCS-R115041	4.131	PASS
MB-R115041	N.A.	N.A.
N024054-001A	4.115	PASS
N024054-001AMS	4.115	PASS
N024054-001AMSD	4.115	PASS
N024054-002A	N.A.	N.A.
N024054-002AMS	4.131	PASS
N024054-003A	4.123	PASS
N024054-003AMS	4.123	PASS
N024054-001ADUP	4.115	PASS
N024085-001A	4.123	PASS
N024085-002A	4.131	PASS
N024085-003A	4.131	PASS
N024085-004A	4.131	PASS
N024085-005A	4.131	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/3/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.123	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
CCV-8	4.131	
CCV-9	4.131	
Average	4.130	
Actual RT Window	4.050 - 4.210	
Applied RT Window	3.930 - 4.330	
N024085-006A	4.131	PASS
N024085-007A	4.131	PASS
N023952-003A	4.115	PASS
N023952-003AMS	4.115	PASS
N023952-004A	4.123	PASS
N023952-004AMS	4.123	PASS
N024053-013A	4.131	PASS
N024053-013AMS	4.131	PASS
N024053-013AMSD	4.131	PASS
N024053-013ADUP	4.123	PASS
N024053-014A	4.131	PASS
N024053-014AMS	4.131	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6/EPA 7199 Unit: ug/L
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Instrument Name: **IC-06** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA



INITIAL CALIBRATION

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-2,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-2,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-3,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-4,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-4,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,1
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-5,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-5,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

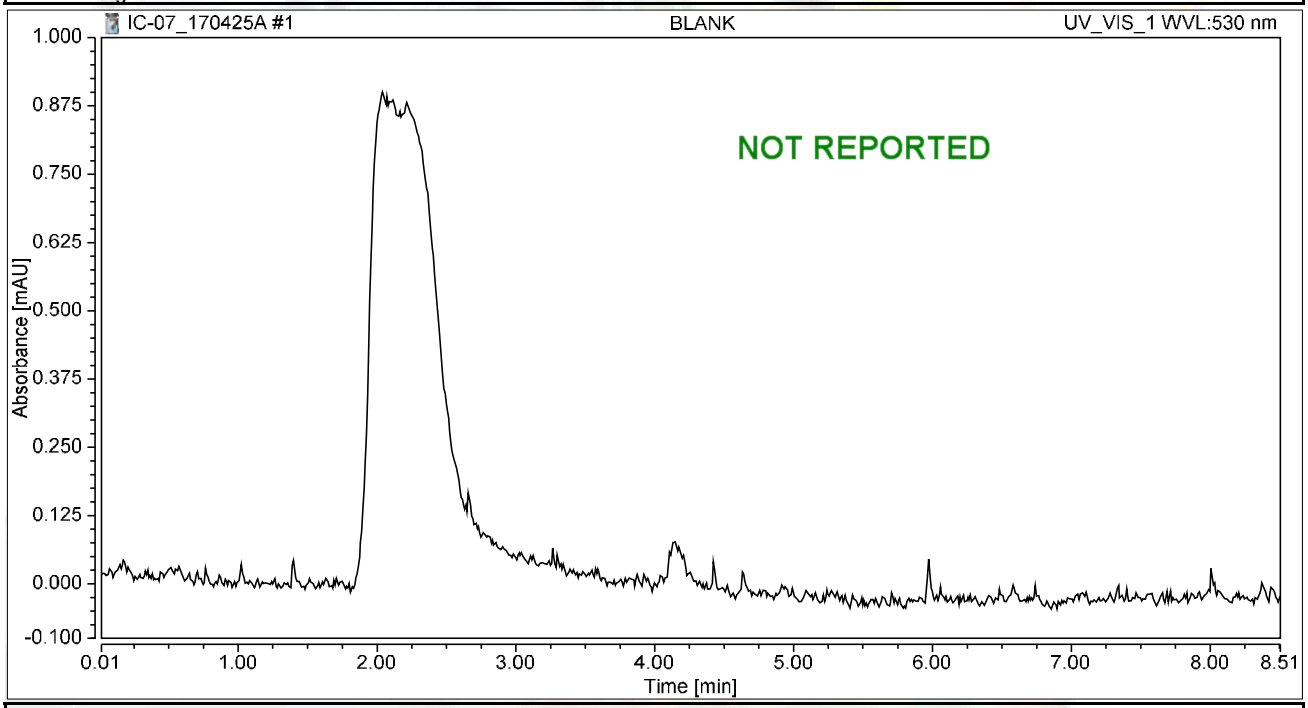
61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	N023912-005AMS,MS	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-6,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-6,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

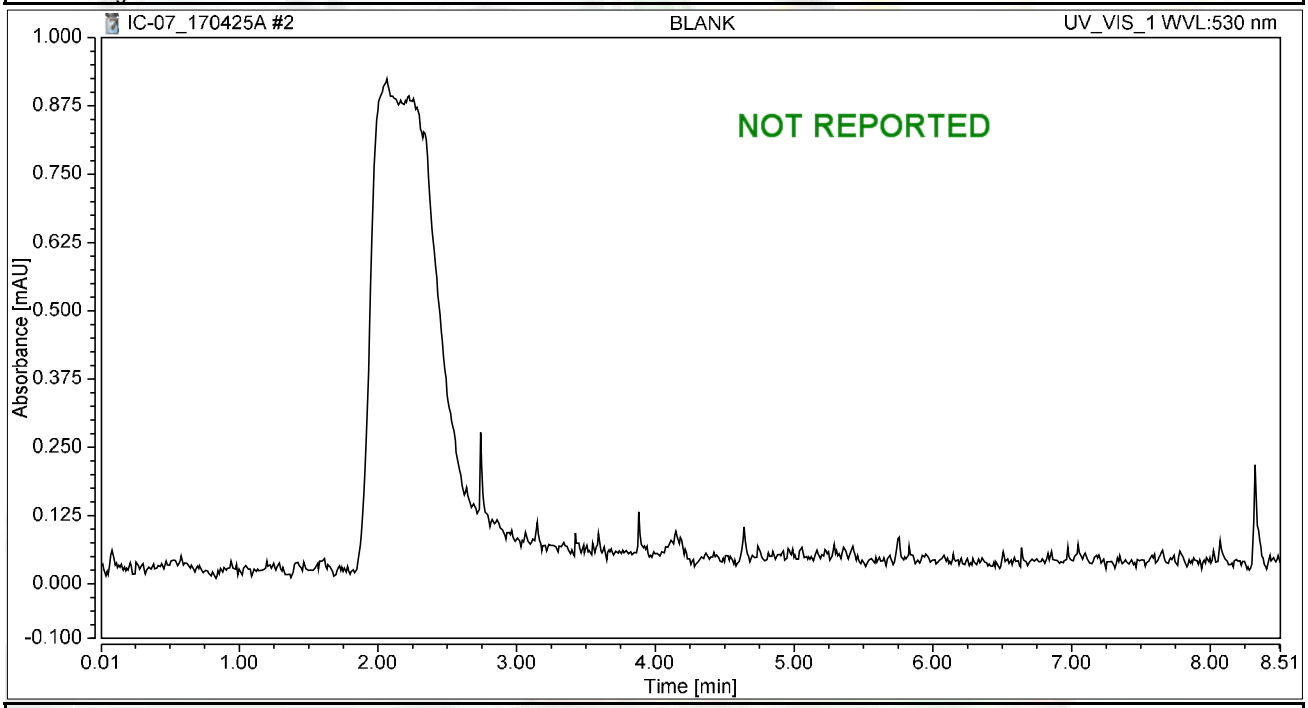
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

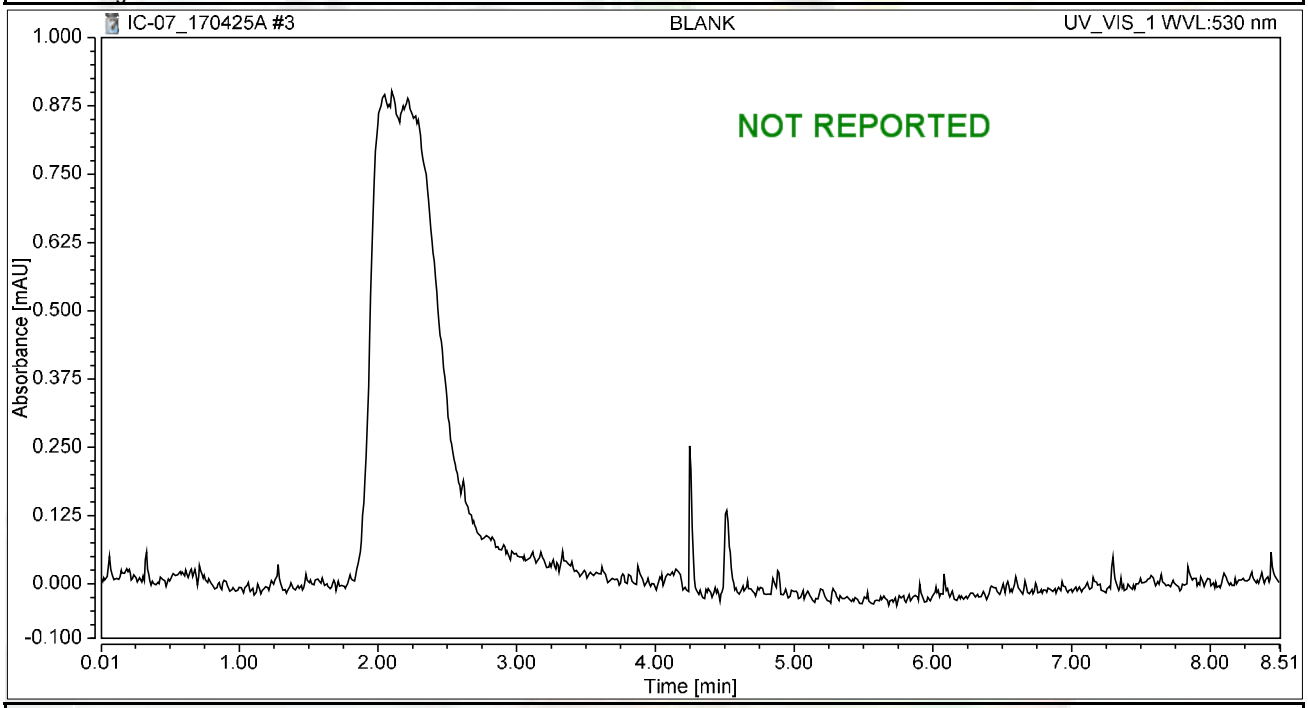
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

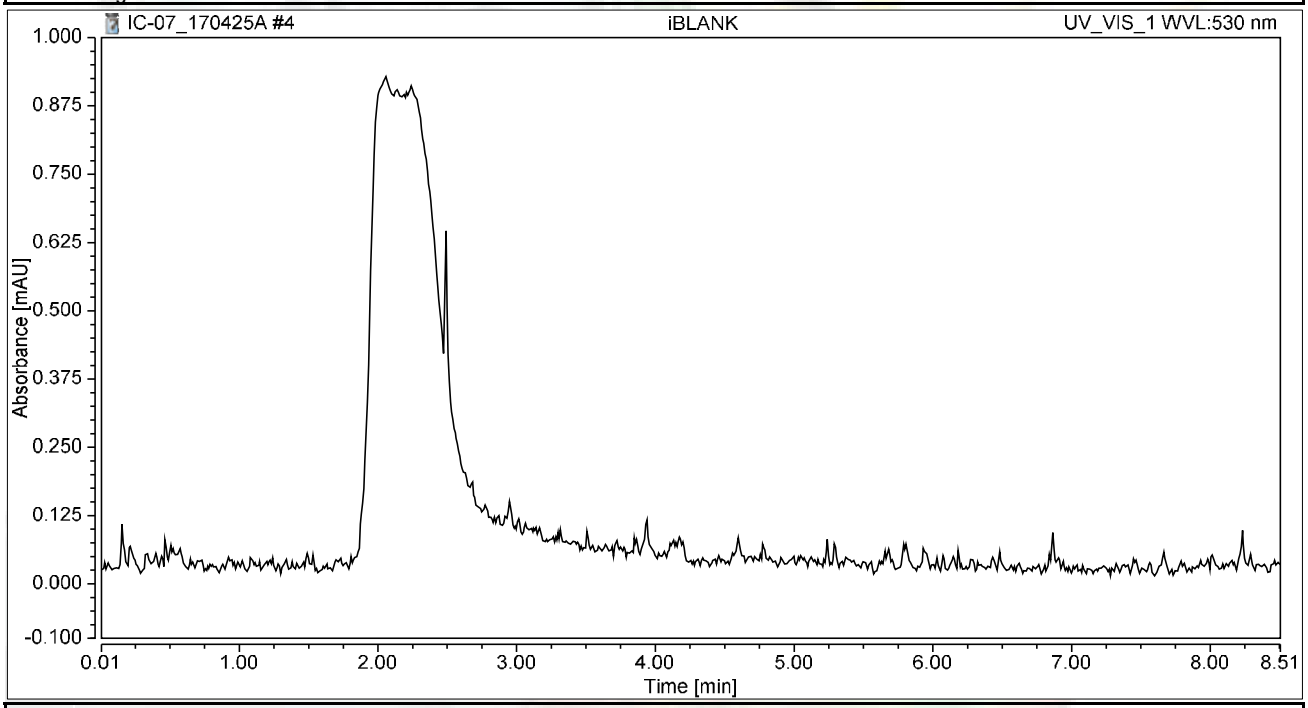
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

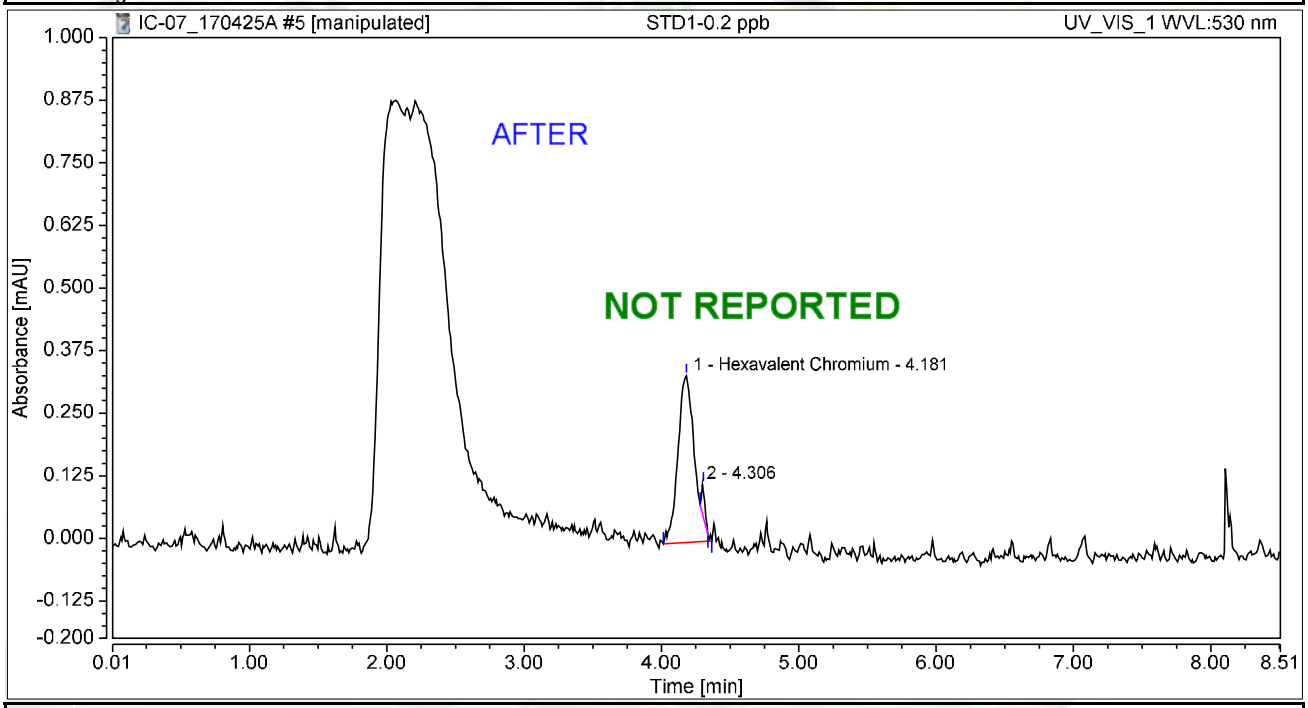
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.046	0.333	96.32	83.12	0.1906
2		4.306	0.002	0.068	3.68	16.88	n.a.
Total:			**0.048**	**0.401**	**100.00**	**100.00**	

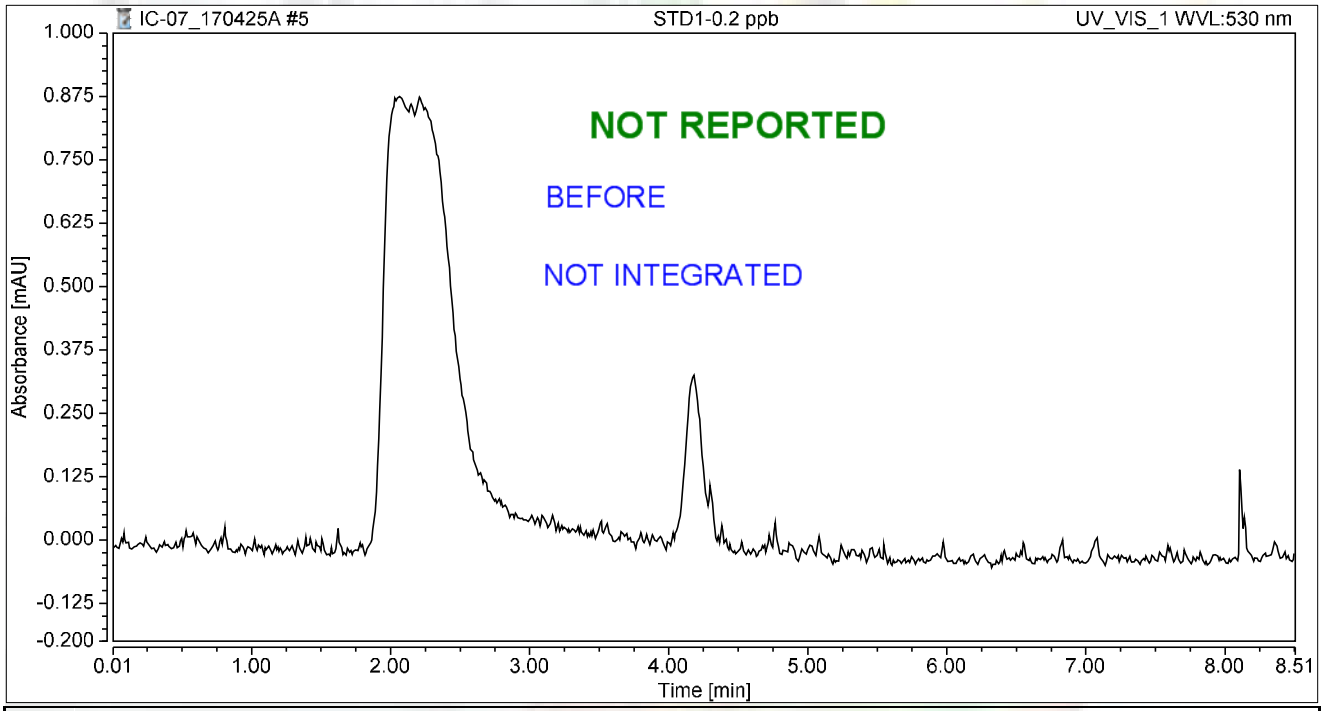
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

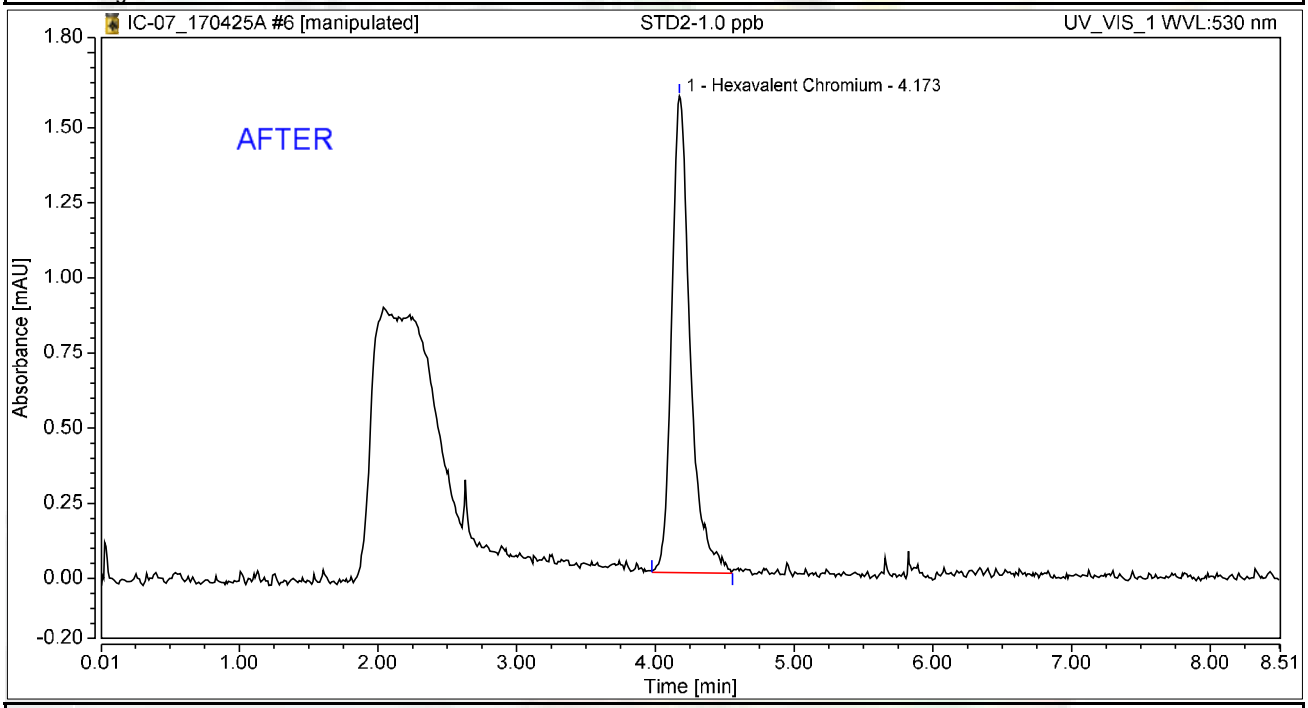
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.244	1.585	100.00	100.00	0.9996
Total:			**0.244**	**1.585**	**100.00**	**100.00**	

rba 4/30/2017

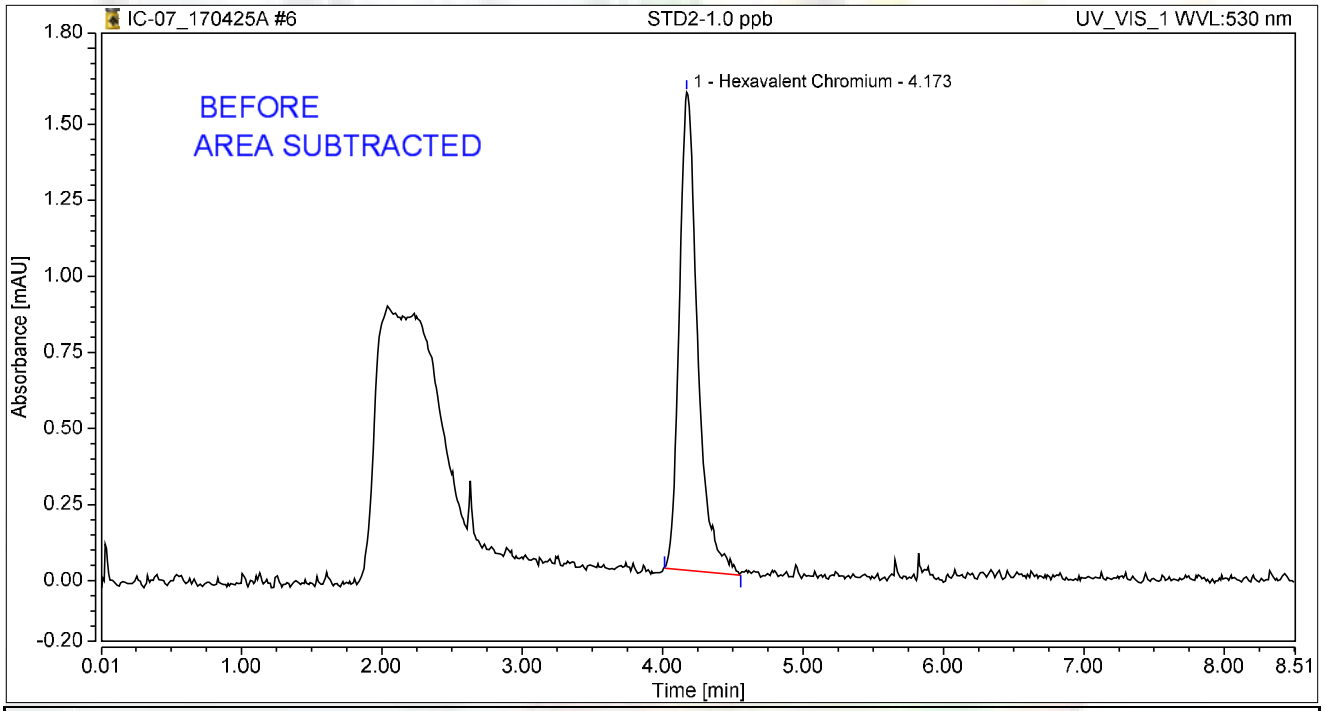
Reviewed by: Nancy 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.238	1.572	100.00	100.00	0.9911
Total:			**0.238**	**1.572**	**100.00**	**100.00**	

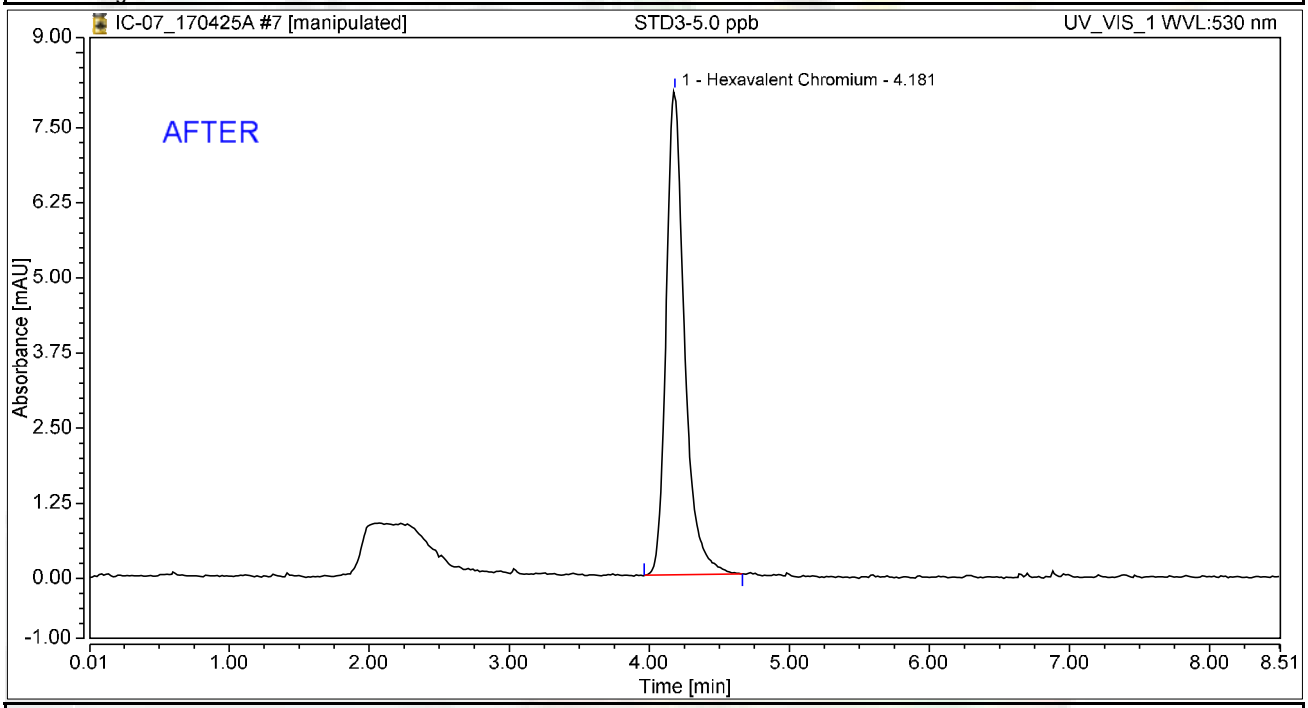
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.224	8.059	100.00	100.00	5.0198
Total:			**1.224**	**8.059**	**100.00**	**100.00**	

rba 4/30/2017

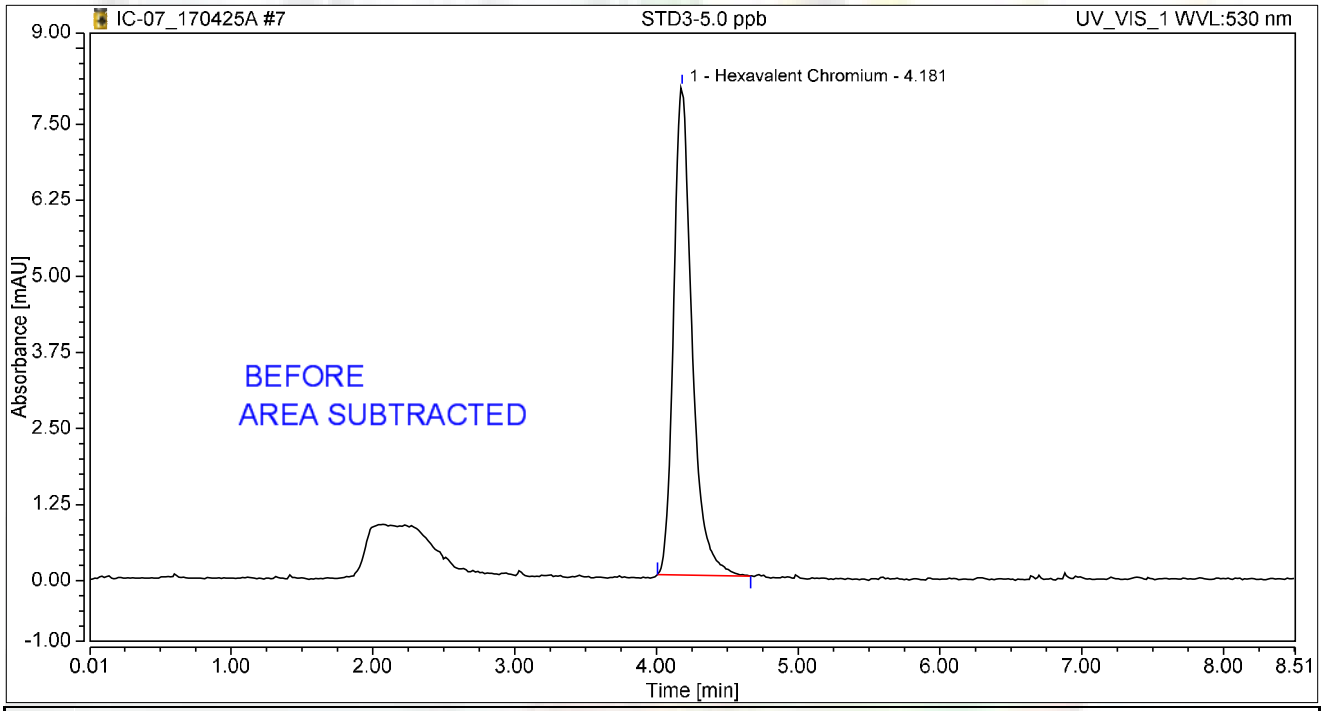
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.209	8.027	100.00	100.00	5.0326
Total:			**1.209**	**8.027**	**100.00**	**100.00**	

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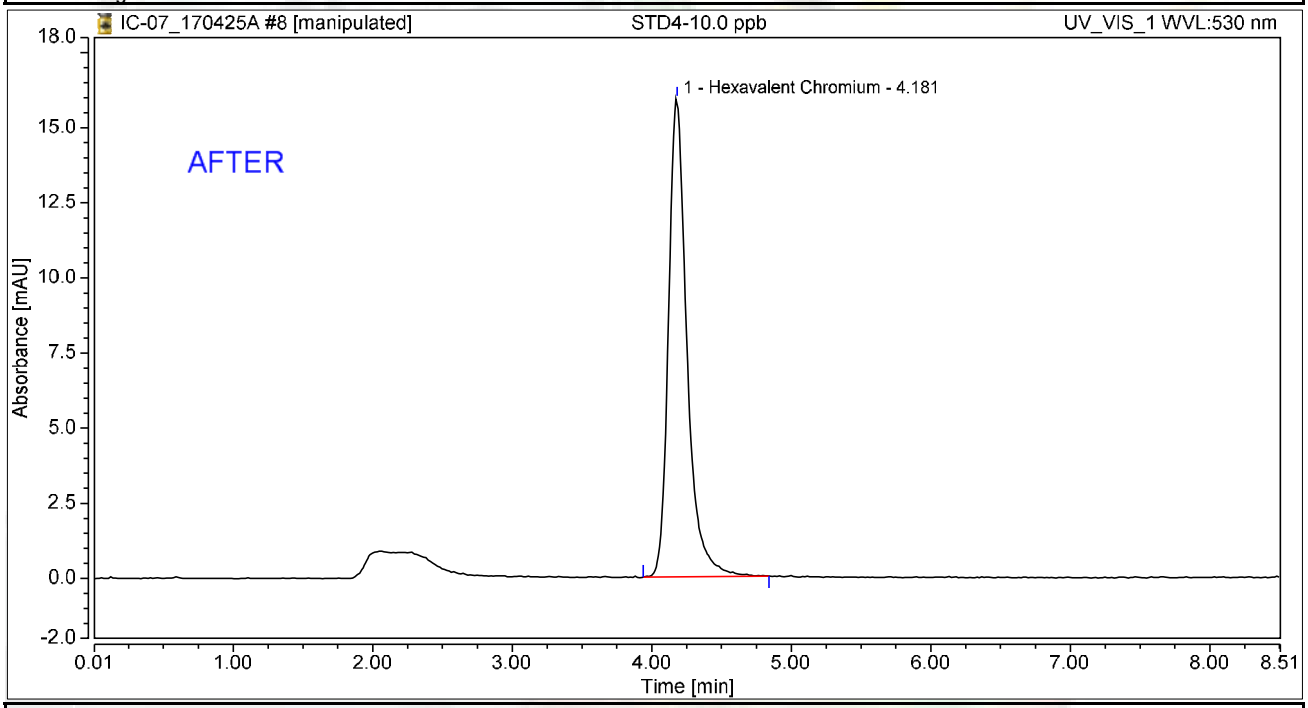
Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.438	15.921	100.00	100.00	9.9965
Total:			**2.438**	**15.921**	**100.00**	**100.00**	

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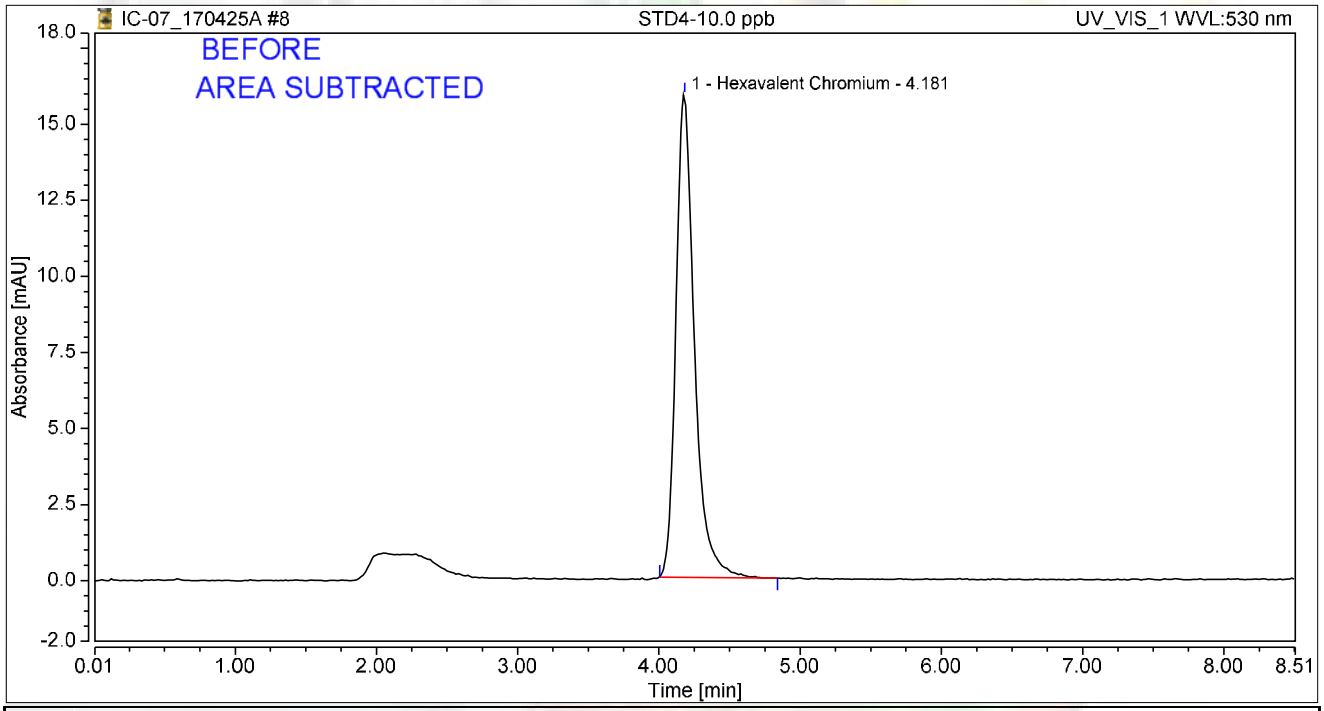
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.407	15.865	100.00	100.00	10.0165
Total:			**2.407**	**15.865**	**100.00**	**100.00**	

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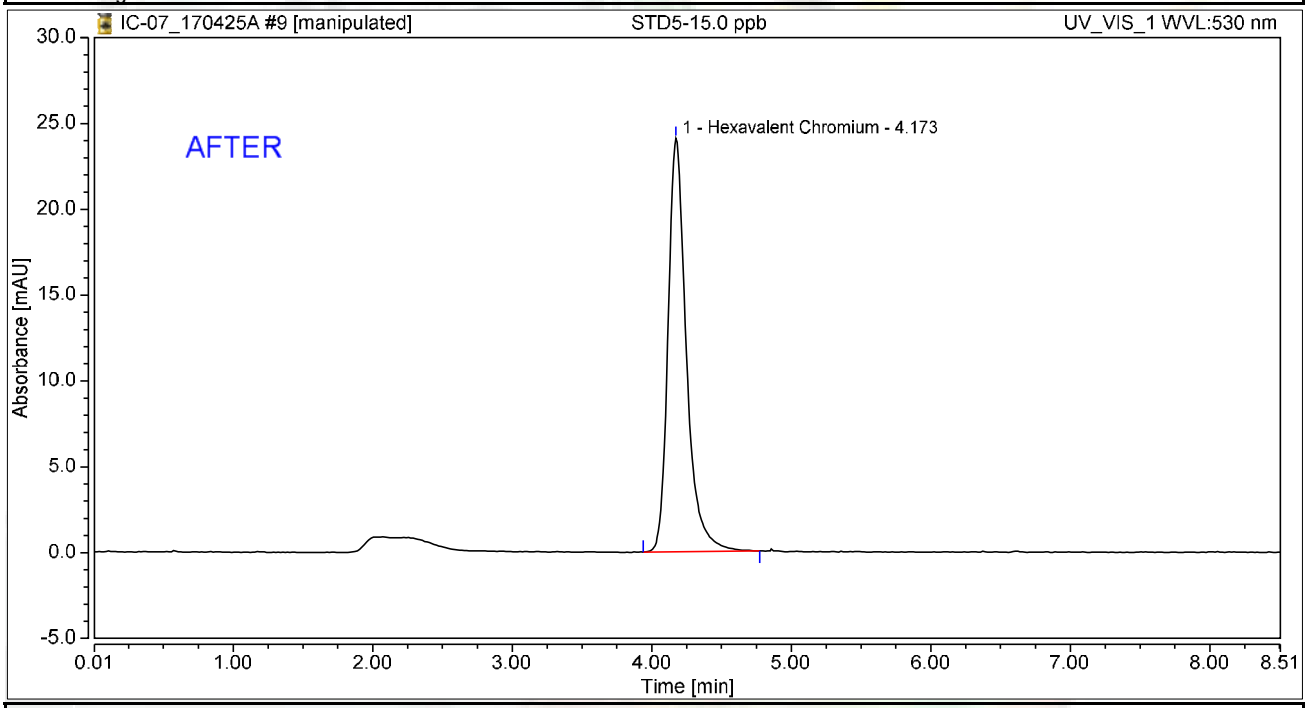
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.664	24.088	100.00	100.00	15.0230
Total:			**3.664**	**24.088**	**100.00**	**100.00**	

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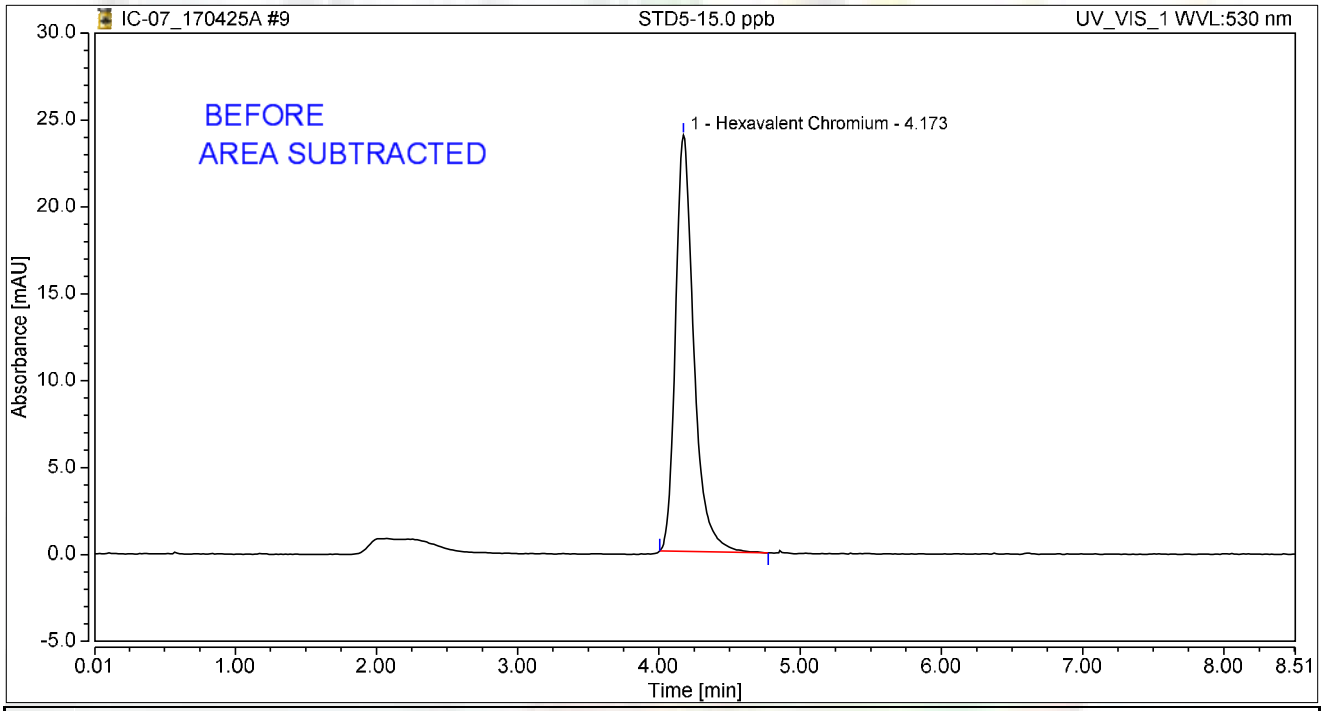
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.597	23.956	100.00	100.00	14.9652
Total:			**3.597**	**23.956**	**100.00**	**100.00**	

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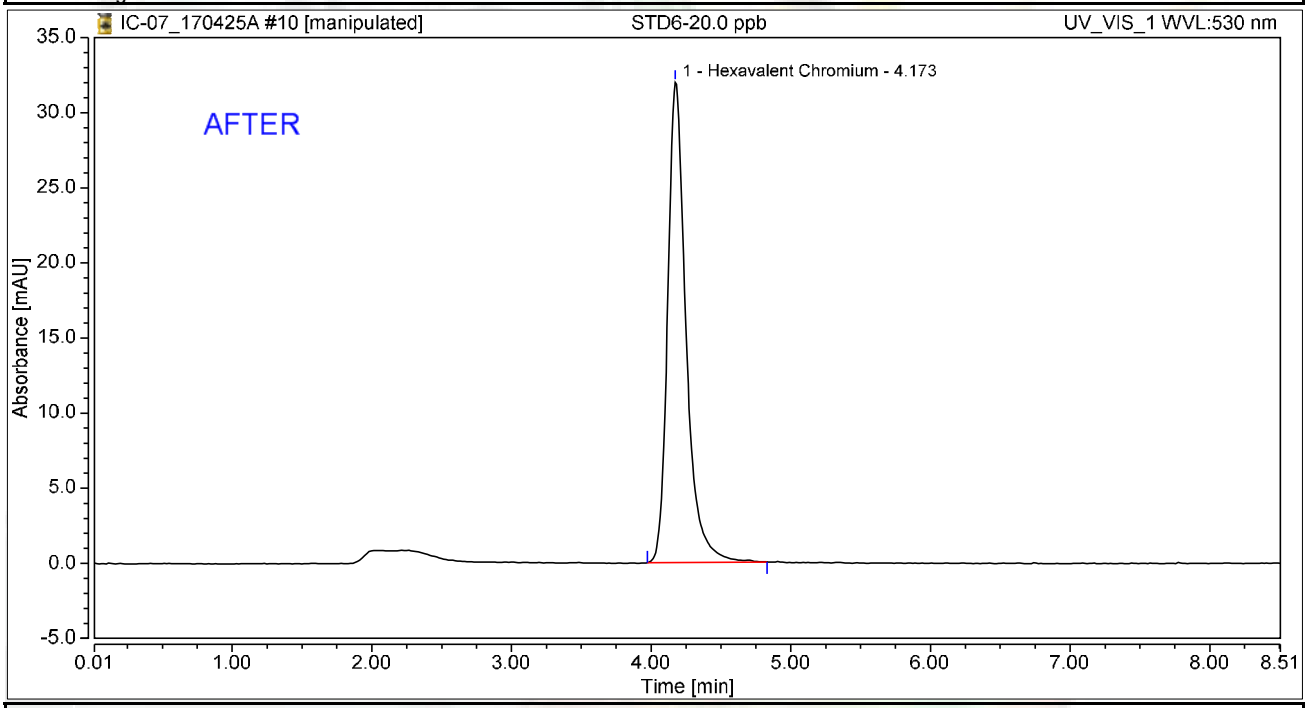
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.873	31.978	100.00	100.00	19.9794
Total:			**4.873**	**31.978**	**100.00**	**100.00**	

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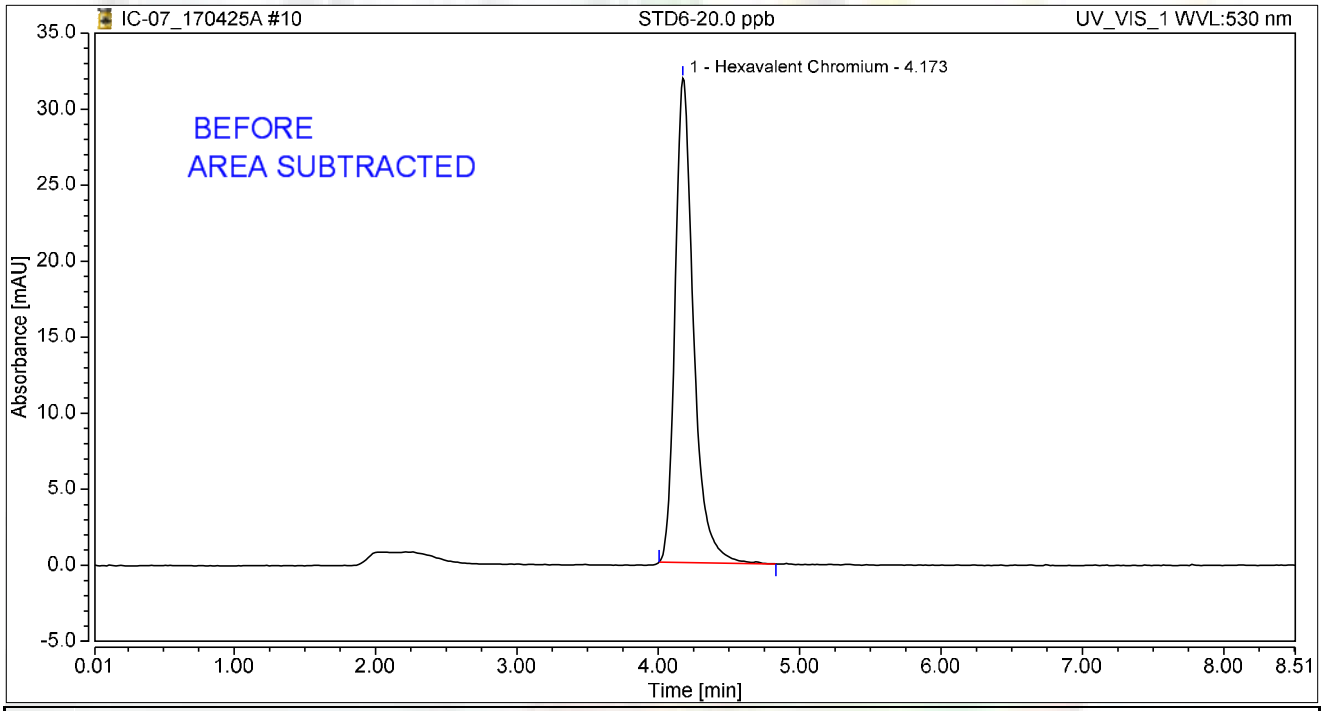
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.809	31.858	100.00	100.00	20.0099
Total:			**4.809**	**31.858**	**100.00**	**100.00**	

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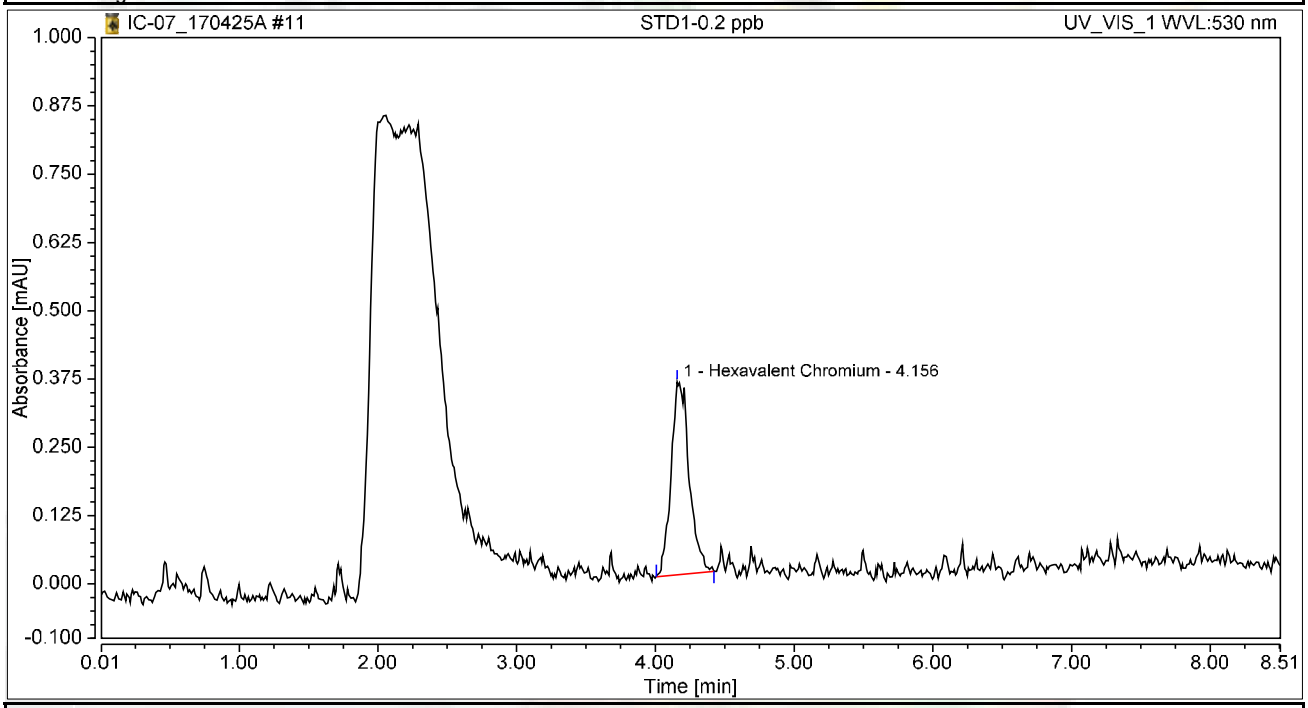
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



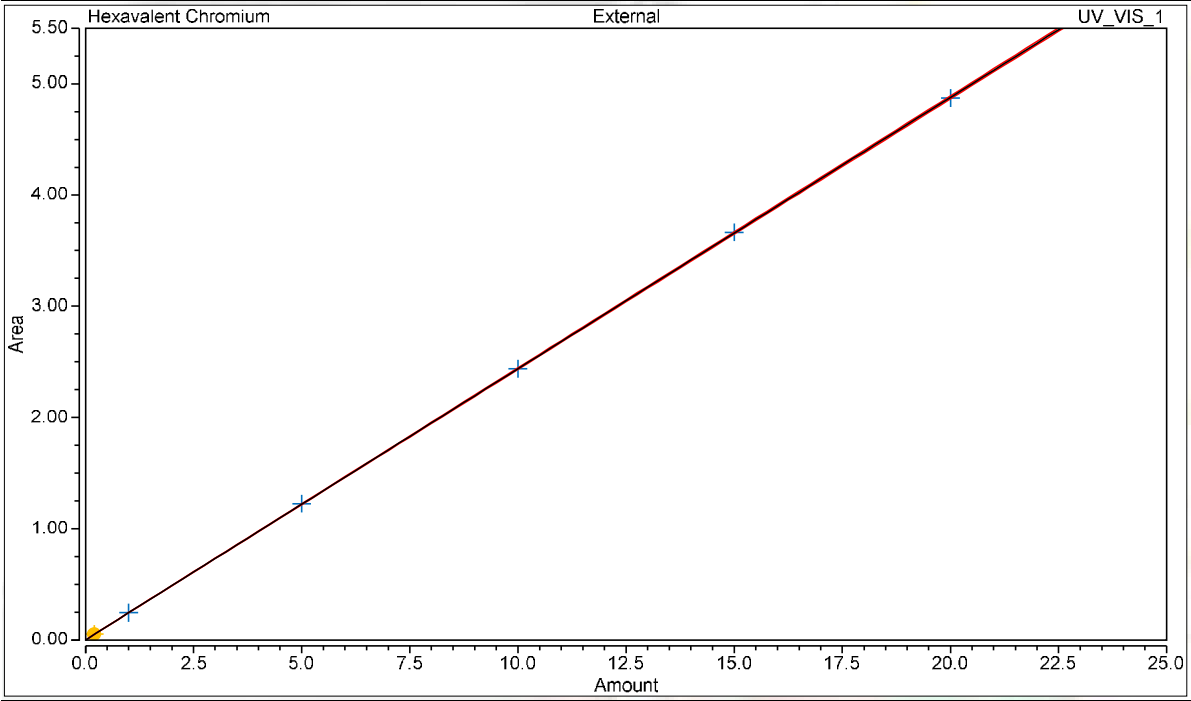
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.054	0.353	100.00	100.00	0.2201
Total:			**0.054**	**0.353**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2439
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99999

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

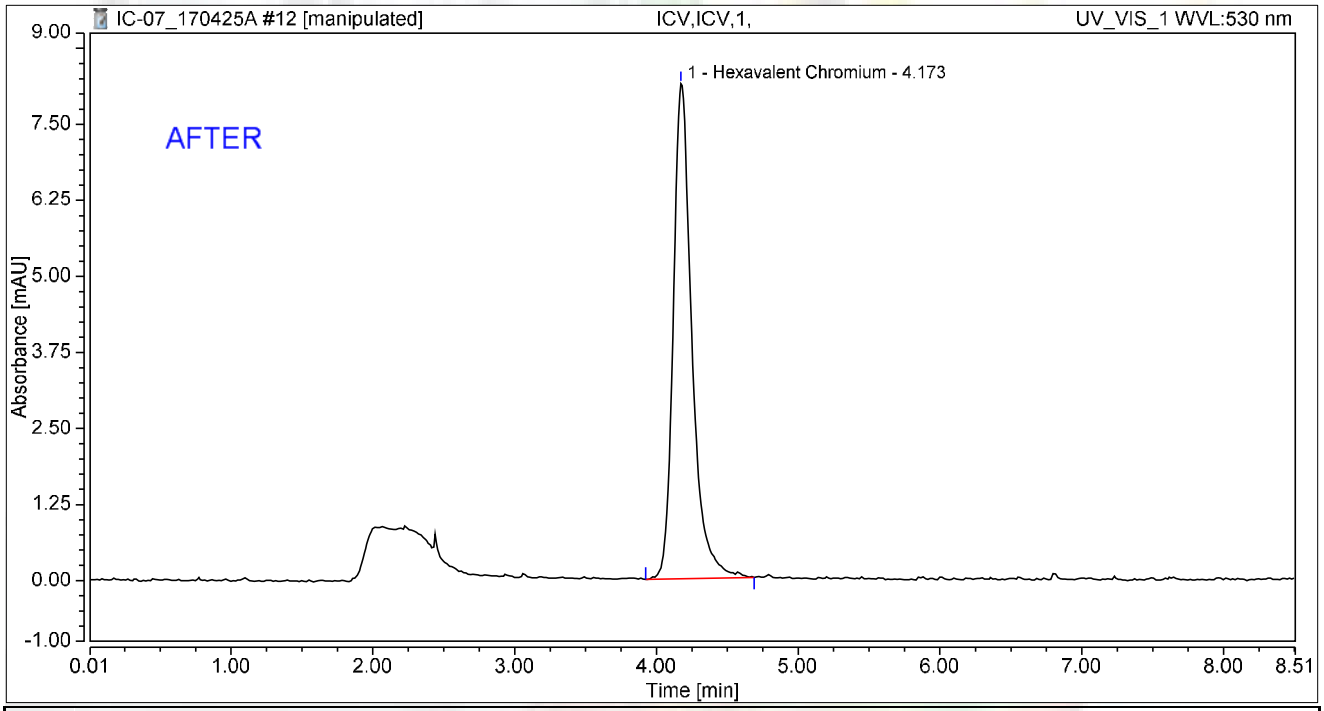
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD2-1.0 ppb	02	1.0000	0.2438	0.244	1.585
7	STD3-5.0 ppb	03	5.0000	1.2243	1.224	8.059
8	STD4-10.0 ppb	04	10.0000	2.4380	2.438	15.921
9	STD5-15.0 ppb	05	15.0000	3.6639	3.664	24.088
10	STD6-20.0 ppb	06	20.0000	4.8727	4.873	31.978
11	STD1-0.2 ppb	01	0.2000	0.0537	0.054	0.353

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.241	8.139	100.00	100.00	5.0868
Total:			**1.241**	**8.139**	**100.00**	**100.00**	

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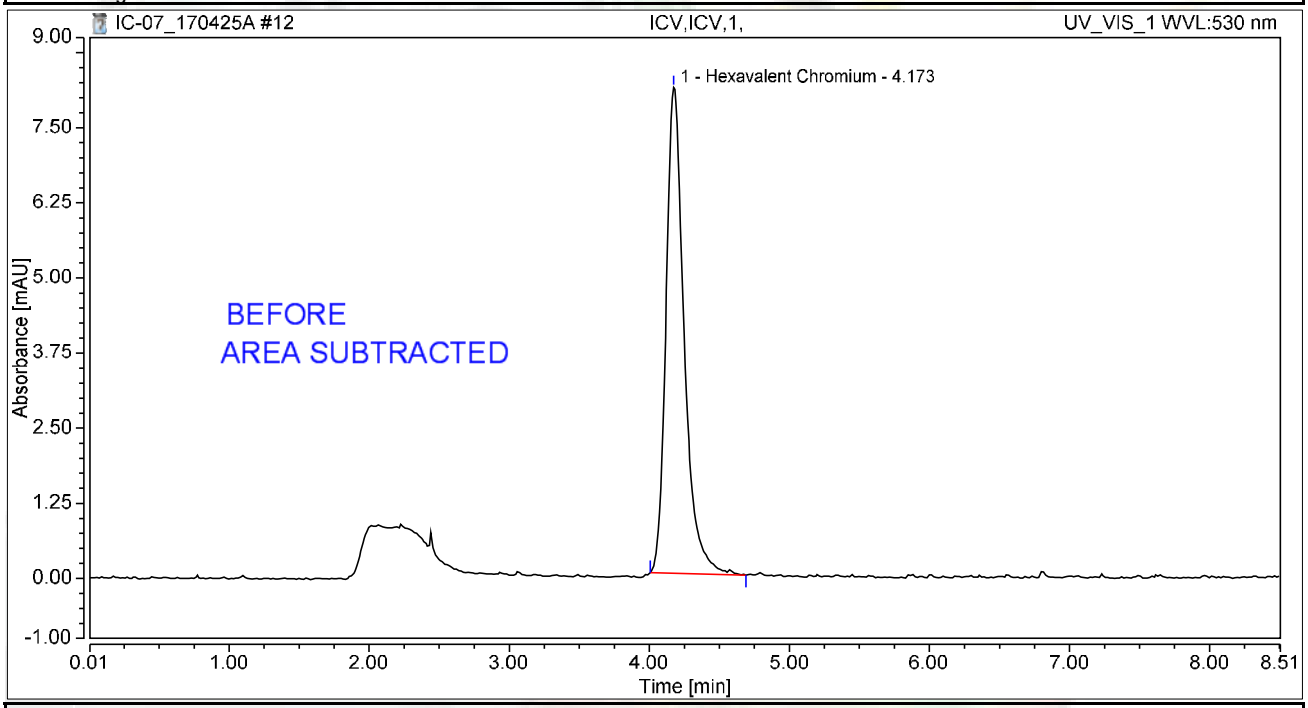
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.212	8.081	100.00	100.00	4.9703
Total:			**1.212**	**8.081**	**100.00**	**100.00**	

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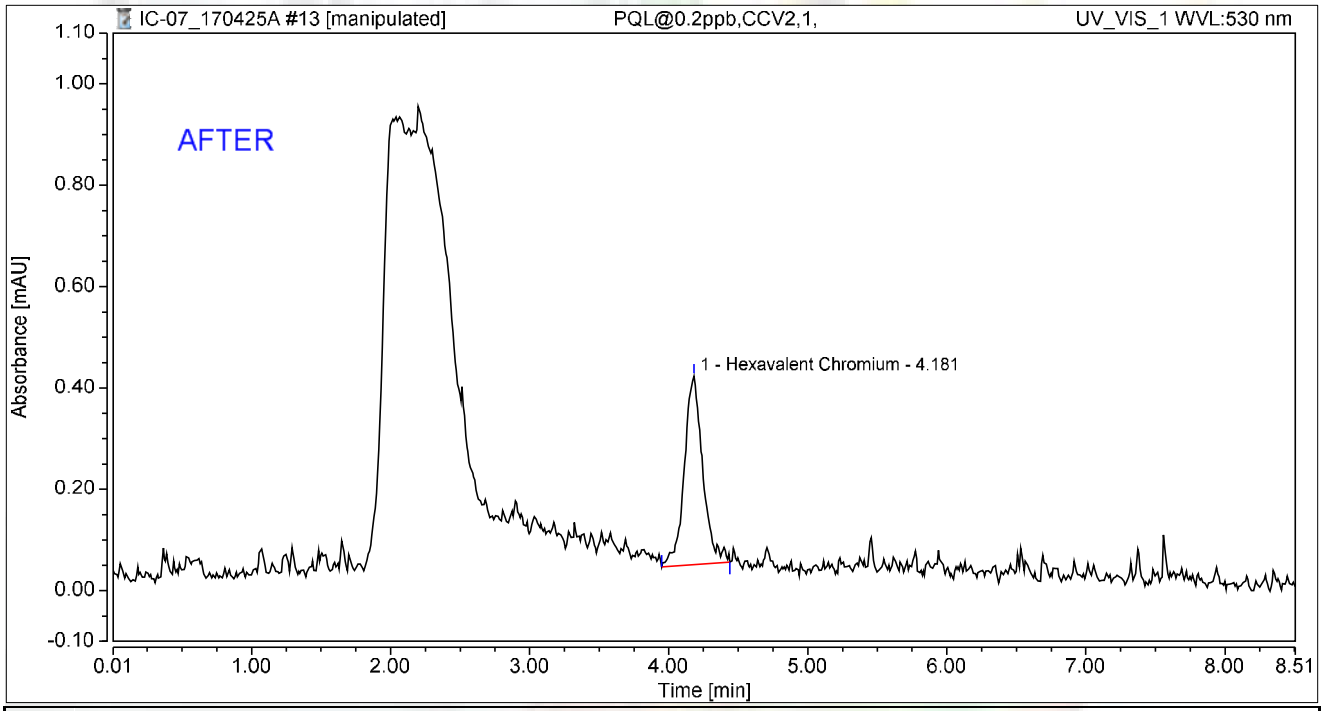
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.057	0.372	100.00	100.00	0.2353
Total:			**0.057**	**0.372**	**100.00**	**100.00**	

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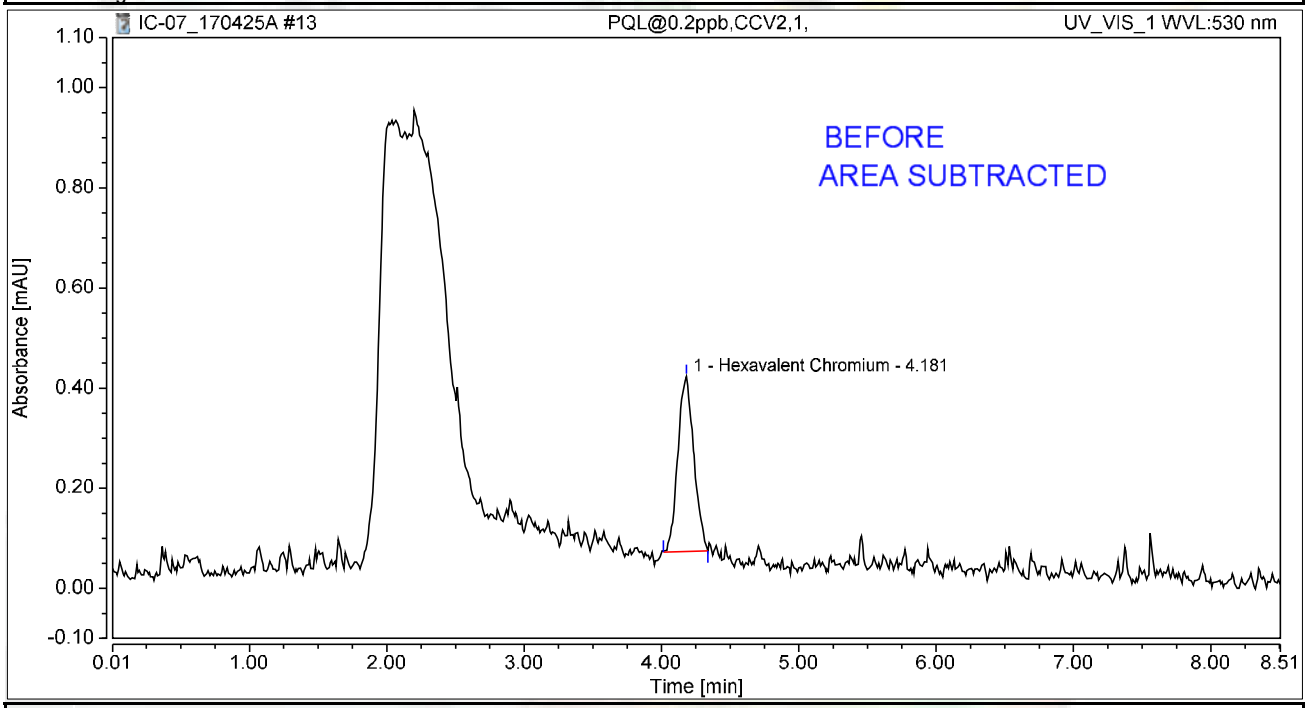
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.047	0.349	100.00	100.00	0.1927
Total:			**0.047**	**0.349**	**100.00**	**100.00**	

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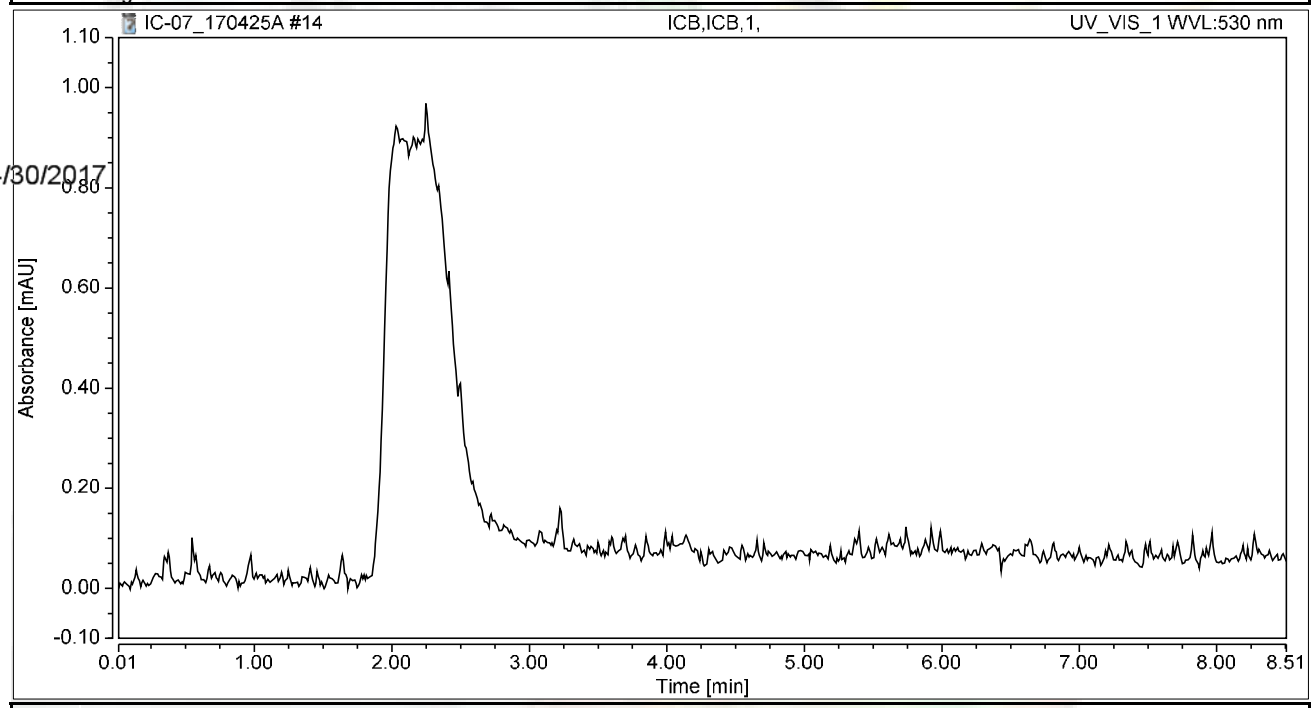
Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



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Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 9:15 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 9:26 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/03/17 9:35 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/03/17 9:45 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/03/17 9:54 AM	Reported
17	MB-R115040	MBLK	1	Hexavalent Chromium	05/03/17 10:04 AM	Reported
18	LCS-R115040	LCS	1	Hexavalent Chromium	05/03/17 10:13 AM	Reported
19	N024053-001A	SAMP	1	Hexavalent Chromium	05/03/17 10:43 AM	Reported
20	N024053-001AMS	MS	1	Hexavalent Chromium	05/03/17 10:54 AM	Reported
21	N024053-002A	SAMP	1	Hexavalent Chromium	05/03/17 11:03 AM	Reported
22	N024053-002AMS	MS	1	Hexavalent Chromium	05/03/17 11:13 AM	Reported
23	N024053-003A	SAMP	1	Hexavalent Chromium	05/03/17 11:22 AM	Reported
24	N024053-003AMS	MS	1	Hexavalent Chromium	05/03/17 11:32 AM	Reported
25	N024053-004A	SAMP	1	Hexavalent Chromium	05/03/17 11:41 AM	Reported
26	N024053-004AMS	MS	1	Hexavalent Chromium	05/03/17 11:51 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/03/17 12:00 PM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/03/17 12:09 PM	Reported
29	N024053-005A	SAMP	1	Hexavalent Chromium	05/03/17 12:19 PM	Not Reported
30	N024053-005AMS	MS	1	Hexavalent Chromium	05/03/17 12:28 PM	Not Reported
31	N024053-006A	SAMP	1	Hexavalent Chromium	05/03/17 12:38 PM	Not Reported
32	N024053-006AMS	MS	1	Hexavalent Chromium	05/03/17 12:47 PM	Not Reported
33	N024053-007A	SAMP	1	Hexavalent Chromium	05/03/17 12:57 PM	Reported
34	N024053-007AMS	MS	1	Hexavalent Chromium	05/03/17 1:06 PM	Reported
35	N024053-008A	SAMP	1	Hexavalent Chromium	05/03/17 1:16 PM	Not Reported
36	N024053-008AMS	MS	1	Hexavalent Chromium	05/03/17 1:25 PM	Not Reported
37	N024053-008A	SAMP	5	Hexavalent Chromium	05/03/17 1:35 PM	Reported
38	N024053-008AMS	MS	5	Hexavalent Chromium	05/03/17 1:44 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/03/17 1:54 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/03/17 2:03 PM	Reported
41	N024053-009A	SAMP	5	Hexavalent Chromium	05/03/17 2:12 PM	Reported
42	N024053-009AMS	MS	5	Hexavalent Chromium	05/03/17 2:22 PM	~~Not~~ Reported

INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024053-015A	SAMP	1000	Hexavalent Chromium	05/03/17 2:31 PM	Reported
44	N024053-015AMS	MS	1000	Hexavalent Chromium	05/03/17 2:41 PM	Reported
45	N024053-015AMSD	MSD	1000	Hexavalent Chromium	05/03/17 2:50 PM	Reported
46	N024071-001A	SAMP	1	Hexavalent Chromium	05/03/17 3:00 PM	Reported
47	N024071-002A	SAMP	1	Hexavalent Chromium	05/03/17 3:09 PM	Reported
48	N024071-003A	SAMP	1	Hexavalent Chromium	05/03/17 3:19 PM	Reported
49	N024053-010A	SAMP	1	Hexavalent Chromium	05/03/17 3:28 PM	Not Reported
50	N024053-010AMS	MS	1	Hexavalent Chromium	05/03/17 3:38 PM	Not Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/03/17 3:47 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/03/17 3:57 PM	Reported
53	N024053-011A	SAMP	1	Hexavalent Chromium	05/03/17 4:06 PM	Reported
54	N024053-011AMS	MS	1	Hexavalent Chromium	05/03/17 4:15 PM	Reported
55	N024053-012A	SAMP	1	Hexavalent Chromium	05/03/17 4:25 PM	Reported
56	N024053-012AMS	MS	1	Hexavalent Chromium	05/03/17 4:34 PM	Reported
57	N024053-013A	SAMP	1	Hexavalent Chromium	05/03/17 4:44 PM	Not Reported
58	N024053-013AMS	MS	1	Hexavalent Chromium	05/03/17 4:53 PM	Not Reported
59	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 5:07 PM	Not Reported
60	N024038-014A	SAMP	5	Hexavalent Chromium	05/03/17 5:24 PM	Reported
61	N024038-014AMS	MS	5	Hexavalent Chromium	05/03/17 5:36 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	05/03/17 5:45 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	05/03/17 5:55 PM	Reported
64	N024053-005A	SAMP	5	Hexavalent Chromium	05/03/17 6:04 PM	Reported
65	N024053-005AMS	MS	5	Hexavalent Chromium	05/03/17 6:14 PM	Reported
66	N024053-006A	SAMP	5	Hexavalent Chromium	05/03/17 6:23 PM	Reported
67	N024053-006AMS	MS	5	Hexavalent Chromium	05/03/17 6:33 PM	Reported
68	N024053-010A	SAMP	5	Hexavalent Chromium	05/03/17 6:42 PM	Reported
69	N024053-010AMS	MS	5	Hexavalent Chromium	05/03/17 6:52 PM	Reported
70	N024053-009ADUP	DUP	5	Hexavalent Chromium	05/03/17 7:01 PM	Reported
71	LCS-R115041	LCS	1	Hexavalent Chromium	05/03/17 7:10 PM	Reported
72	MB-R115041	MBLK	1	Hexavalent Chromium	05/03/17 7:20 PM	Reported
73	N024054-001A	SAMP	5	Hexavalent Chromium	05/03/17 7:29 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	05/03/17 7:39 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	05/03/17 7:48 PM	Reported
76	N024054-001AMS	MS	5	Hexavalent Chromium	05/03/17 7:58 PM	Not Reported
77	N024054-001AMSD	MSD	5	Hexavalent Chromium	05/03/17 8:07 PM	Not Reported
78	N024054-002A	SAMP	1	Hexavalent Chromium	05/03/17 8:17 PM	Not Reported
79	N024054-002AMS	MS	1	Hexavalent Chromium	05/03/17 8:26 PM	Not Reported
80	N024054-003A	SAMP	10	Hexavalent Chromium	05/03/17 8:36 PM	Not Reported
81	N024054-003AMS	MS	10	Hexavalent Chromium	05/03/17 8:45 PM	Not Reported
82	N024054-001ADUP	DUP	5	Hexavalent Chromium	05/03/17 8:55 PM	Not Reported
83	N024085-001A	SAMP	2000	Hexavalent Chromium	05/03/17 9:04 PM	Reported
84	N024085-002A	SAMP	2000	Hexavalent Chromium	05/03/17 9:13 PM	Reported

INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N024085-003A	SAMP	2000	Hexavalent Chromium	05/03/17 9:23 PM	Reported
86	CCV-7	CCV	1	Hexavalent Chromium	05/03/17 9:32 PM	Reported
87	CCB-7	CCB	1	Hexavalent Chromium	05/03/17 9:42 PM	Reported
88	N024085-004A	SAMP	1000	Hexavalent Chromium	05/03/17 9:52 PM	Reported
89	N024085-005A	SAMP	200	Hexavalent Chromium	05/03/17 10:01 PM	Reported
90	N024085-006A	SAMP	200	Hexavalent Chromium	05/03/17 10:10 PM	Reported
91	N024085-007A	SAMP	200	Hexavalent Chromium	05/03/17 10:20 PM	Reported
92	N023952-003A	SAMP	1	Hexavalent Chromium	05/03/17 10:29 PM	Not Reported
93	N023952-003AMS	MS	1	Hexavalent Chromium	05/03/17 10:39 PM	Not Reported
94	N023952-004A	SAMP	5	Hexavalent Chromium	05/03/17 10:48 PM	Not Reported
95	N023952-004AMS	MS	5	Hexavalent Chromium	05/03/17 10:58 PM	Not Reported
96	N024053-013A	SAMP	100	Hexavalent Chromium	05/03/17 11:07 PM	Reported
97	N024053-013AMS	MS	100	Hexavalent Chromium	05/03/17 11:16 PM	Reported
98	CCV-8	CCV1	1	Hexavalent Chromium	05/03/17 11:26 PM	Reported
99	CCB-8	CCB	1	Hexavalent Chromium	05/03/17 11:35 PM	Reported
100	N024053-013AMSD	MSD	100	Hexavalent Chromium	05/03/17 11:45 PM	Reported
101	N024053-013ADUP	DUP	100	Hexavalent Chromium	05/03/17 11:54 PM	Reported
102	N024053-014A	SAMP	100	Hexavalent Chromium	05/04/17 12:04 AM	Reported
103	N024053-014AMS	MS	100	Hexavalent Chromium	05/04/17 12:13 AM	Reported
104	CCV-9	CCV	1	Hexavalent Chromium	05/04/17 12:23 AM	Reported
105	CCB-9	CCB	1	Hexavalent Chromium	05/04/17 12:32 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170503A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**04/May/17 14:22:22**
No. of Injections:	**108**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/03/2017 09:15	Finished	
13	BLANK	2	1000	Unknown		05/03/2017 09:26	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/03/2017 09:35	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/03/2017 09:45	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/03/2017 09:54	Finished	CCB R170419B
17	MB-H2O,MBLK,1	6	1000	Unknown		05/03/2017 10:04	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/03/2017 10:13	Finished	LCS, IWST-170330B
19	N024053-001A,SAMF	9	1000	Unknown		05/03/2017 10:43	Finished	SAMP, 10mL
20	N024053-001AMS,MS	10	1000	Unknown		05/03/2017 10:54	Finished	MS (1ppb), IWST-170330B,2>1
21	N024053-002A,SAMF	11	1000	Unknown		05/03/2017 11:03	Finished	SAMP, 10mL
22	N024053-002AMS,MS	12	1000	Unknown		05/03/2017 11:13	Finished	MS (1ppb), IWST-170330B,2>1
23	N024053-003A,SAMF	13	1000	Unknown		05/03/2017 11:22	Finished	SAMP, 10mL
24	N024053-003AMS,MS	14	1000	Unknown		05/03/2017 11:32	Finished	MS (1ppb), IWST-170330B,2>1
25	N024053-004A,SAMF	15	1000	Unknown		05/03/2017 11:41	Finished	SAMP, 10mL
26	N024053-004AMS,MS	16	1000	Unknown		05/03/2017 11:51	Finished	MS (1ppb), IWST-170330B,2>1
27	CCV-2,CCV1,1,	17	1000	Unknown		05/03/2017 12:00	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	18	1000	Unknown		05/03/2017 12:09	Finished	CCB R170419B
29	N024053-005A,SAMF	19	1000	Unknown		05/03/2017 12:19	Finished	SAMP, 10mL
30	N024053-005AMS,MS	20	1000	Unknown		05/03/2017 12:28	Finished	MS (1ppb), IWST-170330B,2>1
31	N024053-006A,SAMF	21	1000	Unknown		05/03/2017 12:38	Finished	SAMP, 10mL
32	N024053-006AMS,MS	22	1000	Unknown		05/03/2017 12:47	Finished	MS (1ppb), IWST-170330B,2>1
33	N024053-007A,SAMF	23	1000	Unknown		05/03/2017 12:57	Finished	SAMP, 10mL
34	N024053-007AMS,MS	24	1000	Unknown		05/03/2017 13:06	Finished	MS (1ppb), IWST-170330B,2>1
35	N024053-008A,SAMF	25	1000	Unknown		05/03/2017 13:16	Finished	SAMP, 10mL
36	N024053-008AMS,MS	26	1000	Unknown		05/03/2017 13:25	Finished	MS (1ppb), IWST-170330B,2>1
37	N024053-008A,SAMF	27	1000	Unknown		05/03/2017 13:35	Finished	SAMP,2>10mL
38	N024053-008AMS,MS	28	1000	Unknown		05/03/2017 13:44	Finished	MS (1ppb), IWST-170330B,2>1
39	CCV-3,CCV,1,	29	1000	Unknown		05/03/2017 13:54	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	30	1000	Unknown		05/03/2017 14:03	Finished	CCB R170419B
41	N024053-009A,SAMF	31	1000	Unknown		05/03/2017 14:12	Finished	SAMP,2>10mL
42	N024053-009AMS,MS	32	1000	Unknown		05/03/2017 14:22	Finished	MS (5ppb), IWST-170330B,2>1
43	N024053-015A,SAMF	33	1000	Unknown		05/03/2017 14:31	Finished	SAMP,0.01>10mL
44	N024053-015AMS,MS	34	1000	Unknown		05/03/2017 14:41	Finished	MS (5ppb), IWST-170330B,0.0
45	N024053-015AMSD,M	35	1000	Unknown		05/03/2017 14:50	Finished	MSD (5ppb), IWST-170330B,0.
46	N024071-001A,SAMF	36	1000	Unknown		05/03/2017 15:00	Finished	SAMP, 10mL
47	N024071-002A,SAMF	37	1000	Unknown		05/03/2017 15:09	Finished	SAMP, 10mL
48	N024071-003A,SAMF	38	1000	Unknown		05/03/2017 15:19	Finished	SAMP, 10mL
49	N024053-010A,SAMF	39	1000	Unknown		05/03/2017 15:28	Finished	SAMP,10mL
50	N024053-010AMS,MS	40	1000	Unknown		05/03/2017 15:38	Finished	MS (1ppb), IWST-170330B,10
51	CCV-4,CCV1,1,	41	1000	Unknown		05/03/2017 15:47	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	42	1000	Unknown		05/03/2017 15:57	Finished	CCB R170419B
53	N024053-011A,SAMF	43	1000	Unknown		05/03/2017 16:06	Finished	SAMP,10mL
54	N024053-011AMS,MS	44	1000	Unknown		05/03/2017 16:15	Finished	MS (1ppb), IWST-170330B,10
55	N024053-012A,SAMF	45	1000	Unknown		05/03/2017 16:25	Finished	SAMP,10mL
56	N024053-012AMS,MS	46	1000	Unknown		05/03/2017 16:34	Finished	MS (1ppb), IWST-170330B,10
57	N024053-013A,SAMF	47	1000	Unknown		05/03/2017 16:44	Finished	SAMP,10mL
58	N024053-013AMS,MS	48	1000	Unknown		05/03/2017 16:53	Finished	MS (1ppb), IWST-170330B,10
59	BLANK	49	1000	Unknown		05/03/2017 17:07	Finished	
60	N024038-014A,SAMF	1	1000	Unknown		05/03/2017 17:24	Finished	SAMP,2>10mL

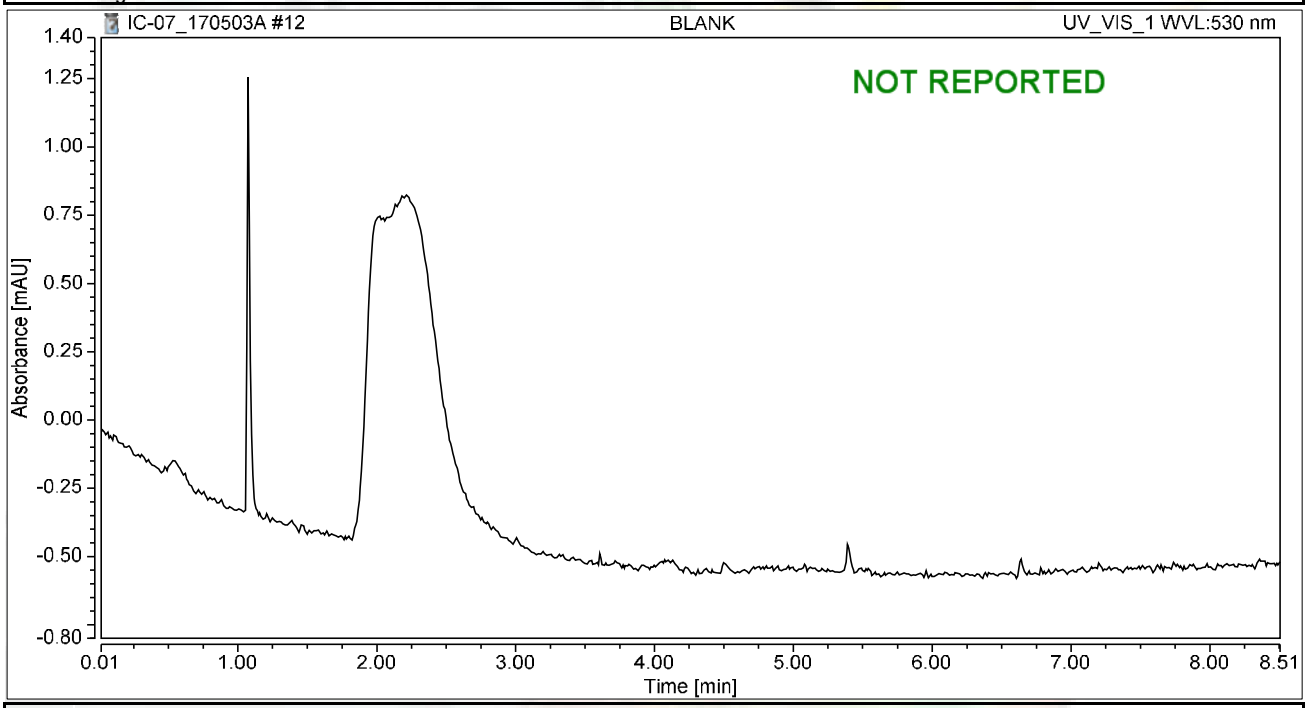
61	N024038-014AMS,MS	2	1000	Unknown		05/03/2017 17:36	Finished	MS (1ppb), IWST-170330B,2>1
62	CCV-5,CCV,1,	3	1000	Unknown		05/03/2017 17:45	Finished	CCV @5ppb, IWST-170330B
63	CCB-5,CCB,1,	4	1000	Unknown		05/03/2017 17:55	Finished	CCB R170414A
64	N024053-005A,SAMP	5	1000	Unknown		05/03/2017 18:04	Finished	SAMP,2>10mL
65	N024053-005AMS,MS	6	1000	Unknown		05/03/2017 18:14	Finished	MS (1ppb), IWST-170330B,2>1
66	N024053-006A,SAMP	7	1000	Unknown		05/03/2017 18:23	Finished	SAMP,2>10mL
67	N024053-006AMS,MS	8	1000	Unknown		05/03/2017 18:33	Finished	MS (1ppb), IWST-170330B,2>1
68	N024053-010A,SAMP	9	1000	Unknown		05/03/2017 18:42	Finished	SAMP,2>10mL
69	N024053-010AMS,MS	10	1000	Unknown		05/03/2017 18:52	Finished	MS (1ppb), IWST-170330B,2>1
70	N024053-009ADUP,D	11	1000	Unknown		05/03/2017 19:01	Finished	DUP,2>10mL
71	LCS-2,LCS,1	12	1000	Unknown		05/03/2017 19:10	Finished	LCS, IWST-170330B
72	MB-2,MBLK,1	13	1000	Unknown		05/03/2017 19:20	Finished	MB R170419B
73	N024054-001A,SAMP	14	1000	Unknown		05/03/2017 19:29	Finished	SAMP,10mL
74	CCV-6,CCV1,1,	15	1000	Unknown		05/03/2017 19:39	Finished	CCV @10ppb, IWST-170330B
75	CCB-6,CCB,1,	16	1000	Unknown		05/03/2017 19:48	Finished	CCB R170414A
76	N024054-001AMS,MS	17	1000	Unknown		05/03/2017 19:58	Finished	MS (5ppb), IWST-170330B,10
77	N024054-001AMSD,M	18	1000	Unknown		05/03/2017 20:07	Finished	MSD (5ppb), IWST-170330B,10
78	N024054-002A,SAMP	19	1000	Unknown		05/03/2017 20:17	Finished	SAMP,10mL
79	N024054-002AMS,MS	20	1000	Unknown		05/03/2017 20:26	Finished	MS (1ppb), IWST-170330B,10
80	N024054-003A,SAMP	21	1000	Unknown		05/03/2017 20:36	Finished	SAMP,1>10mL
81	N024054-003AMS,MS	22	1000	Unknown		05/03/2017 20:45	Finished	MS (5ppb), IWST-170330B,1>1
82	N024054-001ADUP,D	23	1000	Unknown		05/03/2017 20:55	Finished	DUP,10mL
83	N024085-001A,SAMP	24	1000	Unknown		05/03/2017 21:04	Finished	SAMP,0.005>10mL
84	N024085-002A,SAMP	25	1000	Unknown		05/03/2017 21:13	Finished	SAMP,0.005>10mL
85	N024085-003A,SAMP	26	1000	Unknown		05/03/2017 21:23	Finished	SAMP,0.005>10mL
86	CCV-7,CCV,1,	27	1000	Unknown		05/03/2017 21:32	Finished	CCV @5ppb, IWST-170330B
87	CCB-7,CCB,1,	28	1000	Unknown		05/03/2017 21:42	Finished	CCB R170419B
88	N024085-004A,SAMP	29	1000	Unknown		05/03/2017 21:52	Finished	SAMP,0.01>10mL
89	N024085-005A,SAMP	30	1000	Unknown		05/03/2017 22:01	Finished	SAMP,0.05>10mL
90	N024085-006A,SAMP	31	1000	Unknown		05/03/2017 22:10	Finished	SAMP,0.05>10mL
91	N024085-007A,SAMP	32	1000	Unknown		05/03/2017 22:20	Finished	SAMP,0.05>10mL
92	N023952-003A,SAMP	33	1000	Unknown		05/03/2017 22:29	Finished	SAMP,10mL
93	N023952-003AMS,MS	34	1000	Unknown		05/03/2017 22:39	Finished	MS (5ppb), IWST-170330B,10
94	N023952-004A,SAMP	35	1000	Unknown		05/03/2017 22:48	Finished	SAMP,2>10mL
95	N023952-004AMS,MS	36	1000	Unknown		05/03/2017 22:58	Finished	MS (5ppb), IWST-170330B,2>1
96	N024053-013A,SAMP	37	1000	Unknown		05/03/2017 23:07	Finished	SAMP,0.1>10mL
97	N024053-013AMS,MS	38	1000	Unknown		05/03/2017 23:16	Finished	MS (5ppb), IWST-170330B,0.1
98	CCV-8,CCV1,1,	39	1000	Unknown		05/03/2017 23:26	Finished	CCV @10ppb, IWST-170330B
99	CCB-8,CCB,1,	40	1000	Unknown		05/03/2017 23:35	Finished	CCB R170419B
100	N024053-013AMSD,M	41	1000	Unknown		05/03/2017 23:45	Finished	MS (5ppb), IWST-170330B,0.1
101	N024053-013ADUP,D	42	1000	Unknown		05/03/2017 23:54	Finished	MS (5ppb), IWST-170330B,0.1
102	N024053-014A,SAMP	43	1000	Unknown		05/04/2017 00:04	Finished	MS (5ppb), IWST-170330B,0.1
103	N024053-014AMS,MS	44	1000	Unknown		05/04/2017 00:13	Finished	MS (5ppb), IWST-170330B,0.1
104	CCV-9,CCV,1,	45	1000	Unknown		05/04/2017 00:23	Finished	CCV @5ppb, IWST-170330B
105	CCB-9,CCB,1,	46	1000	Unknown		05/04/2017 00:32	Finished	CCB R170414A
106	SHUTDOWN	47	1000	Unknown		05/04/2017 00:42	Finished	
107	Eluent: R170502A	48	1000	Unknown		n.a.	Finished	Eluent
108	PCR: R170502B	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

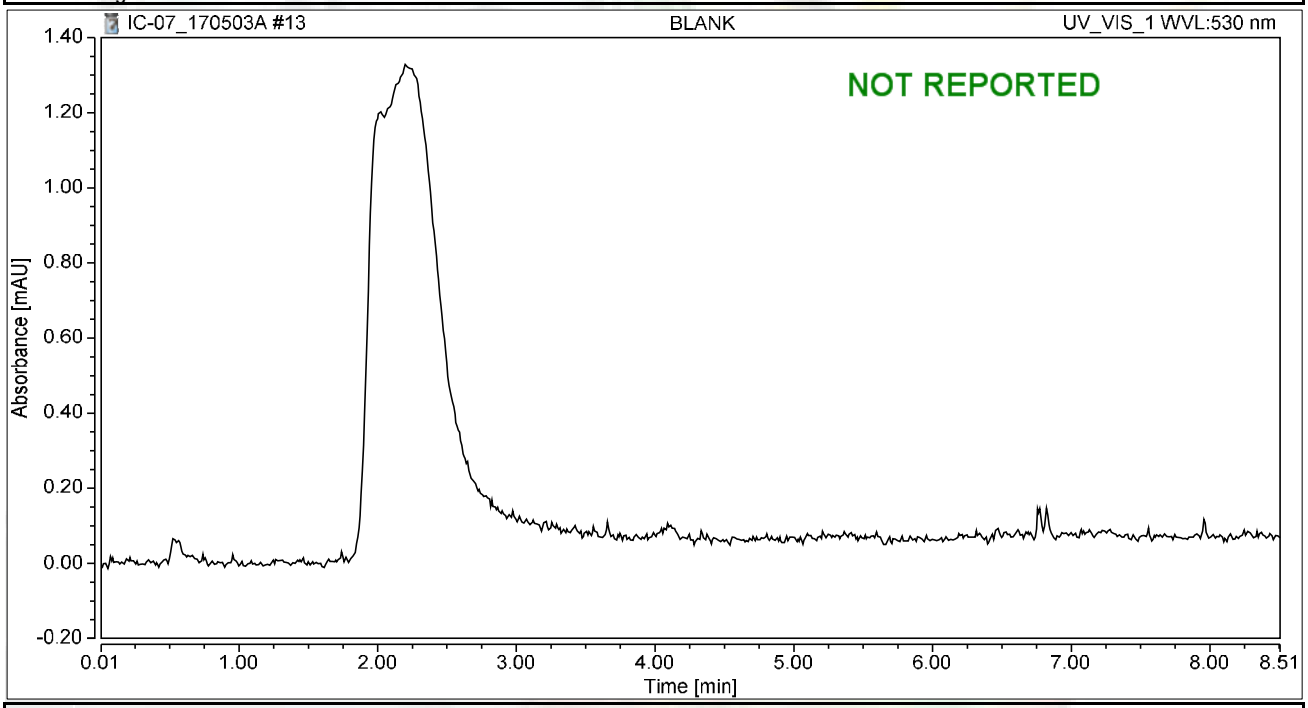
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

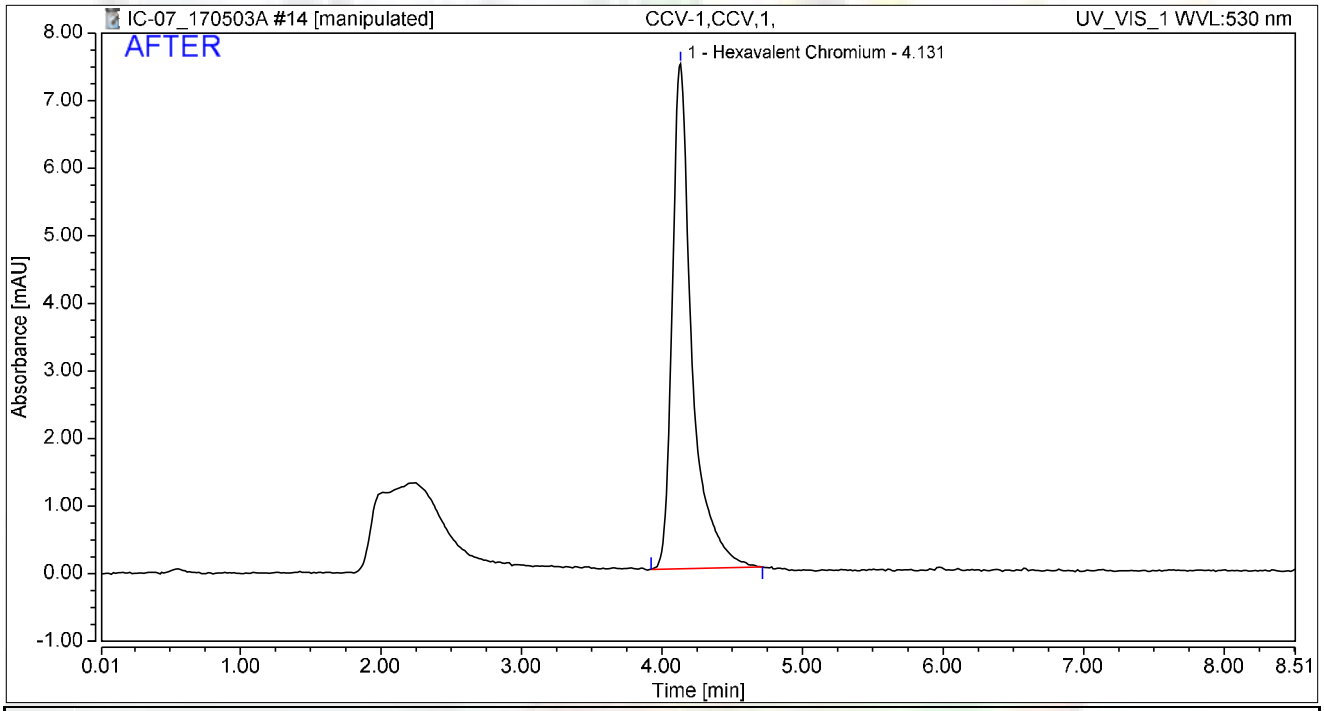
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.217	7.473	100.00	100.00	4.9886
Total:			**1.217**	**7.473**	**100.00**	**100.00**	

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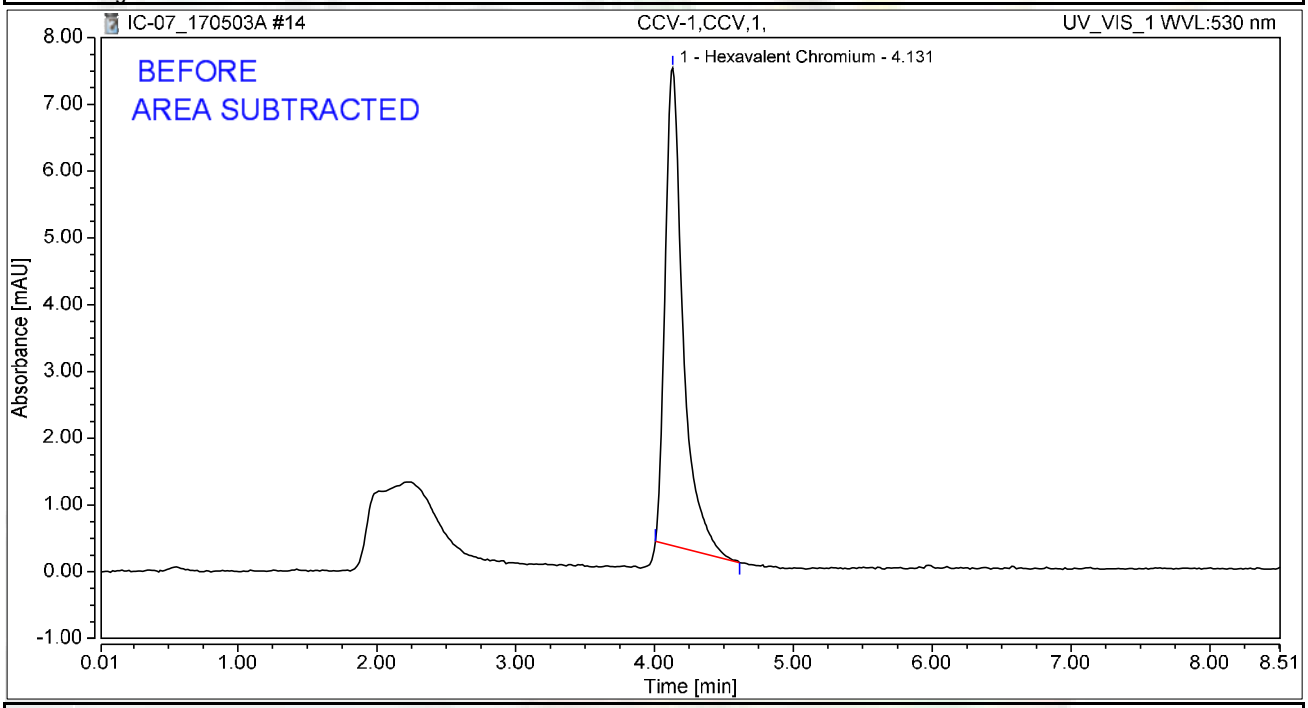
5/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.076	7.156	100.00	100.00	4.4123
Total:			**1.076**	**7.156**	**100.00**	**100.00**	

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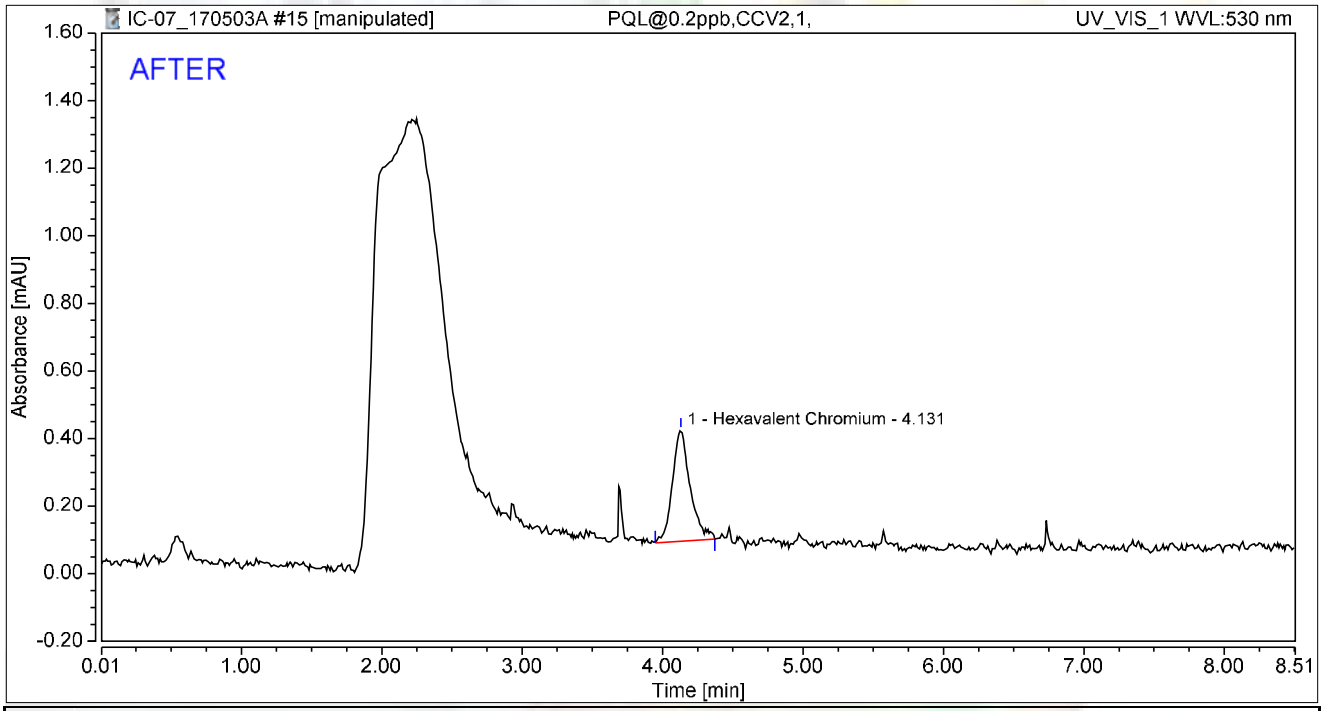
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.048	0.329	100.00	100.00	0.1979
Total:			**0.048**	**0.329**	**100.00**	**100.00**	

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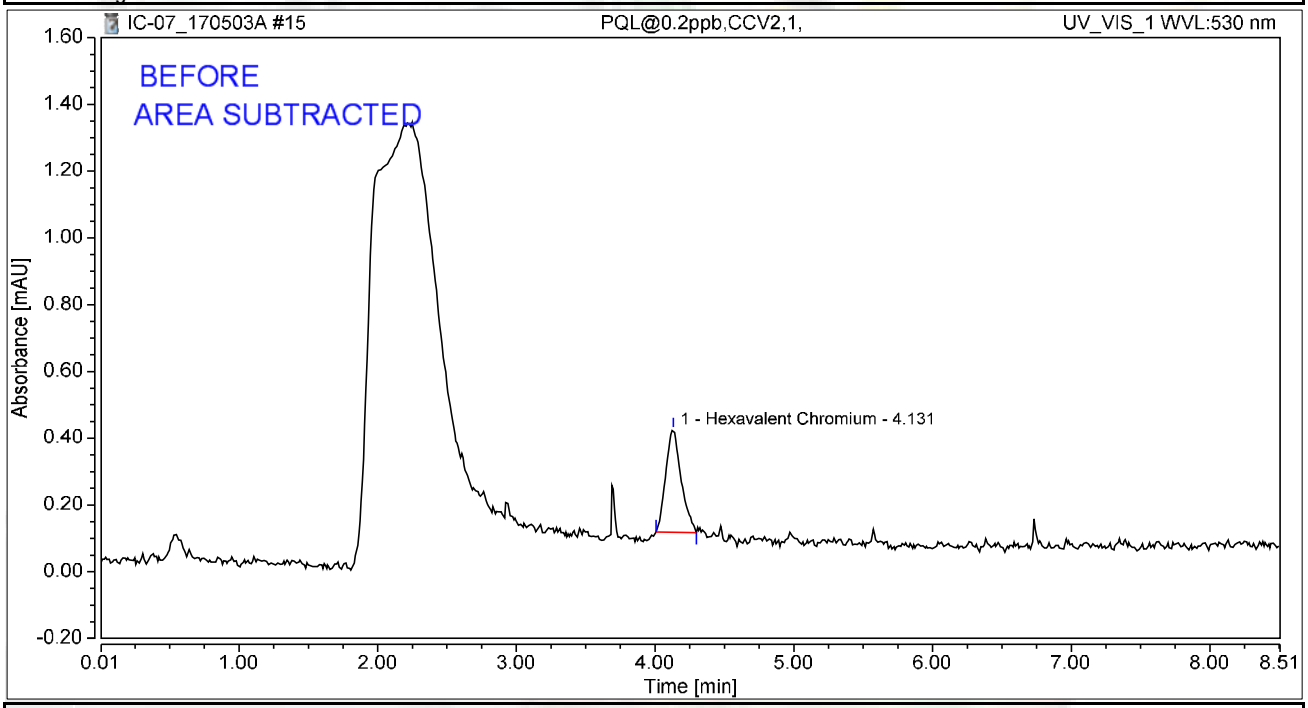
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.040	0.306	100.00	100.00	0.1628
Total:			**0.040**	**0.306**	**100.00**	**100.00**	

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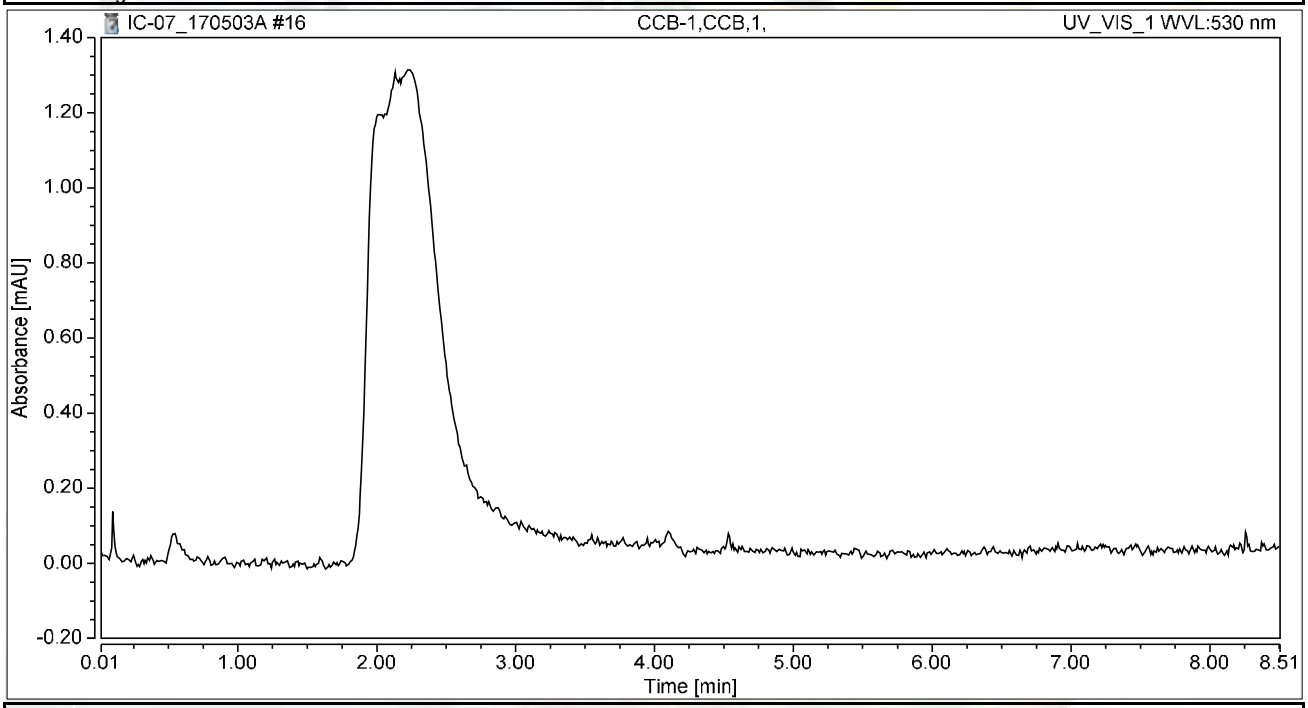
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

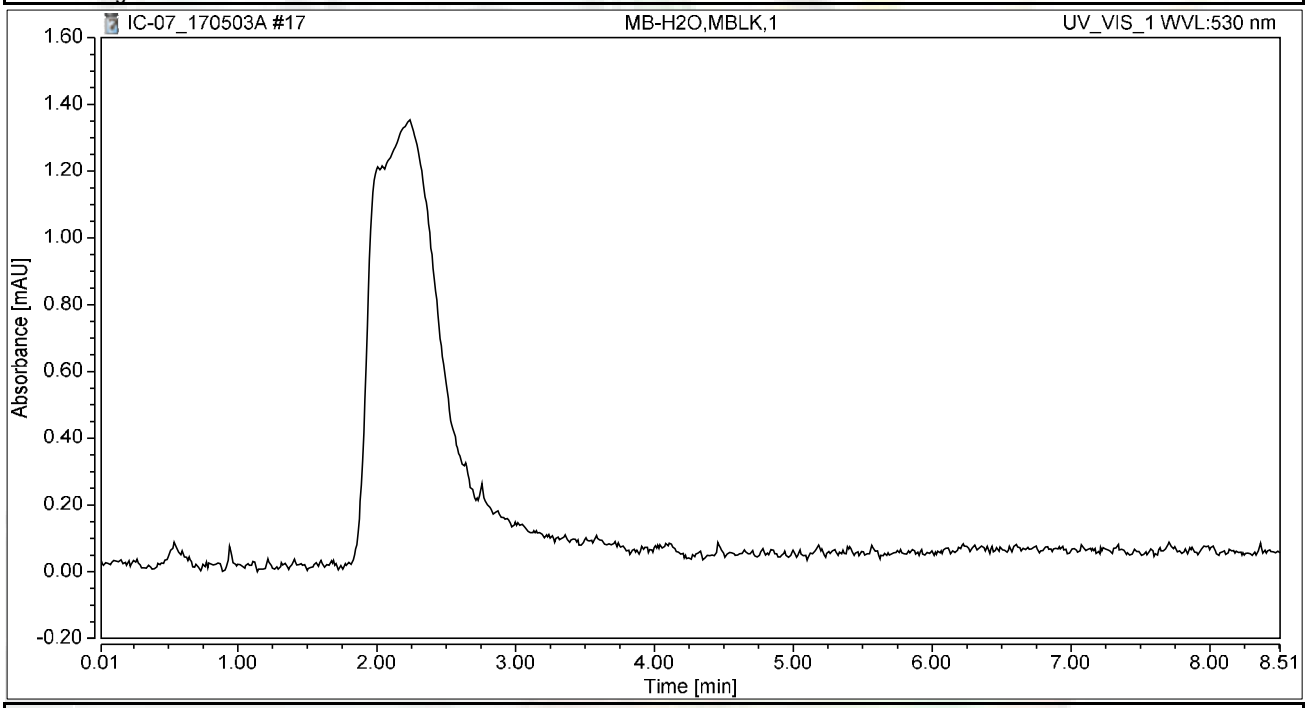
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 10:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

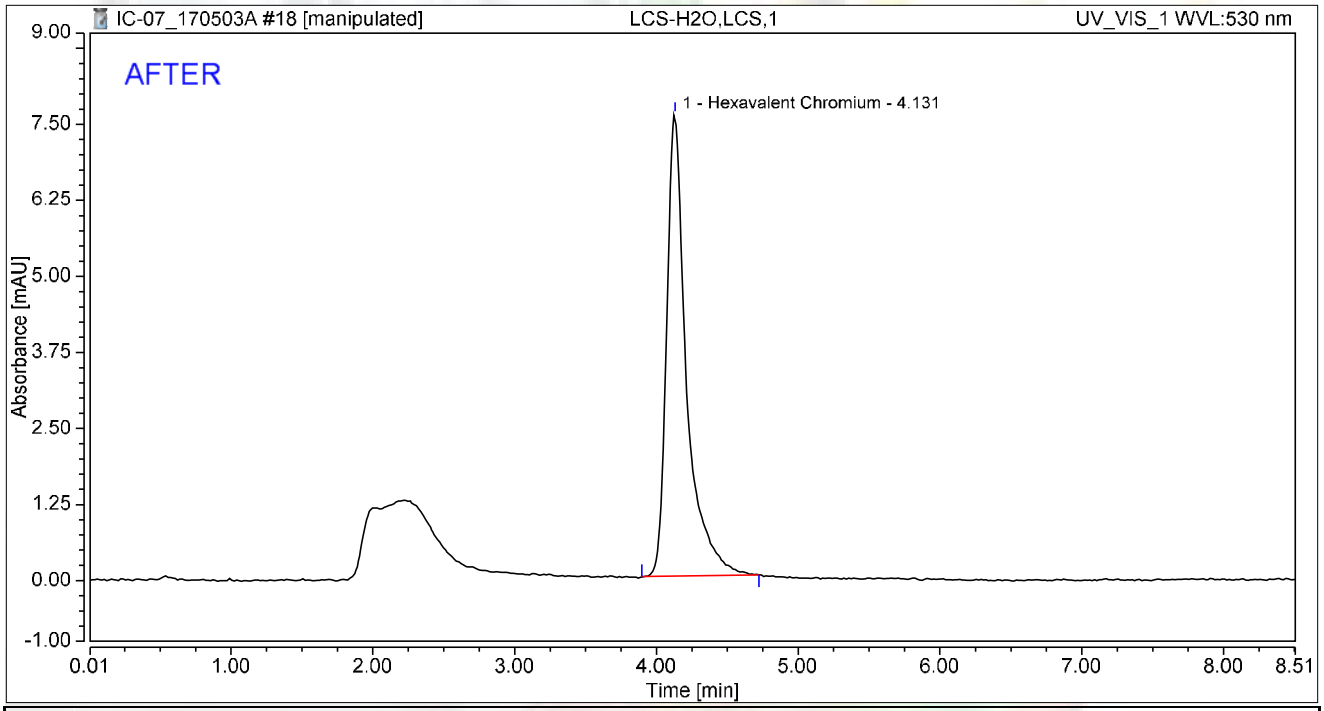
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.235	7.592	100.00	100.00	5.0650
Total:			**1.235**	**7.592**	**100.00**	**100.00**	

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My first report/Integration

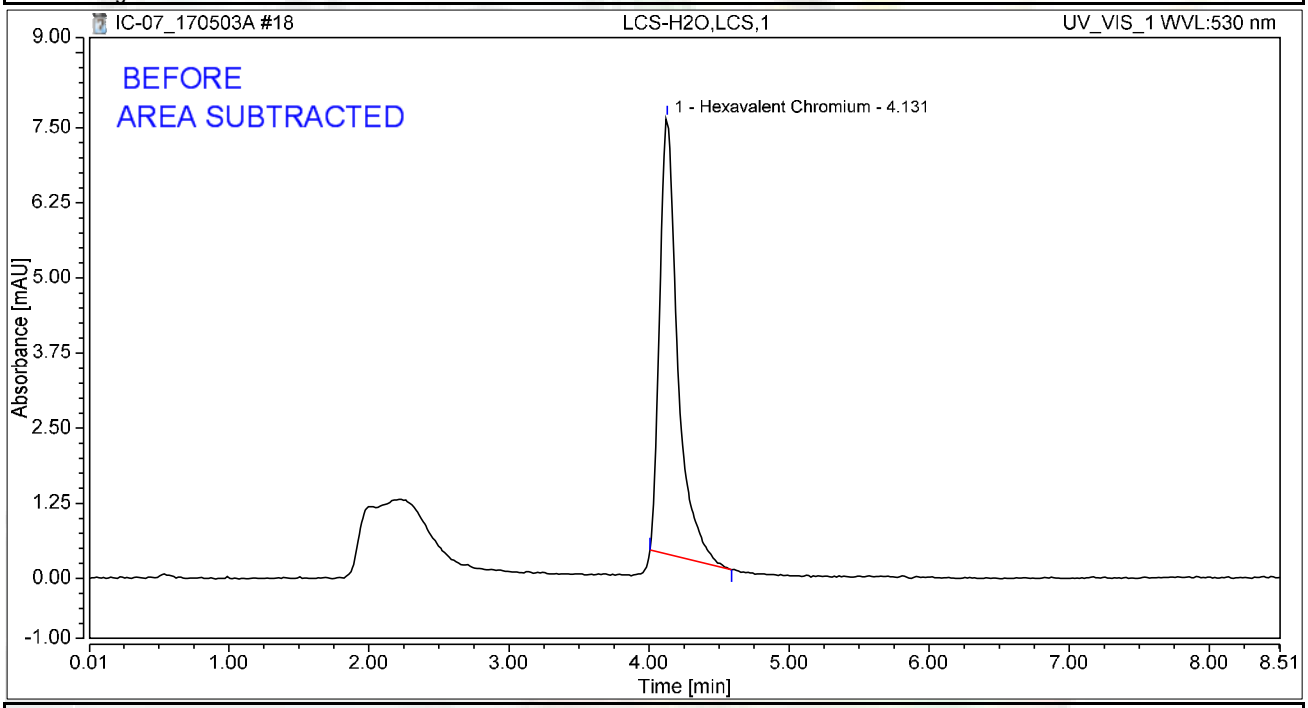
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 10:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.089	7.260	100.00	100.00	4.4645
Total:			**1.089**	**7.260**	**100.00**	**100.00**	

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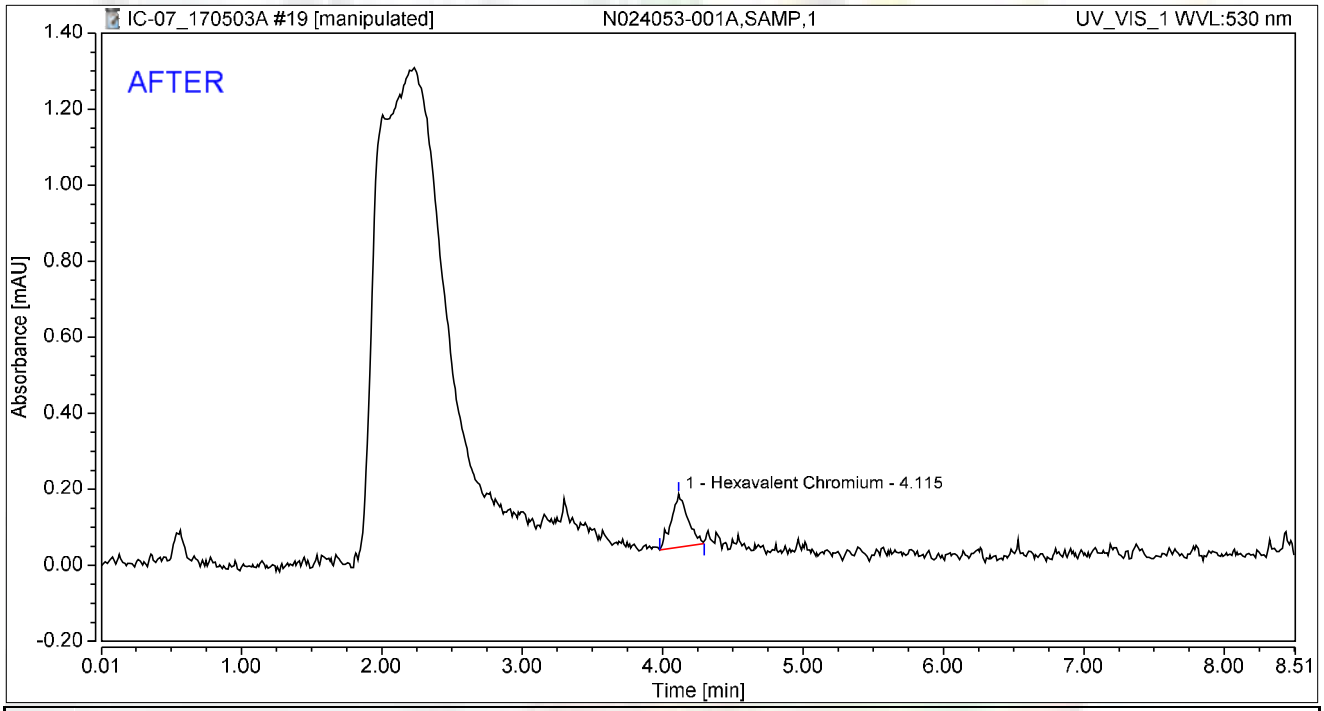
Chromatogram and Results

Injection Details

Injection Name:	**N024053-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.019	0.140	100.00	100.00	0.0791
Total:			**0.019**	**0.140**	**100.00**	**100.00**	

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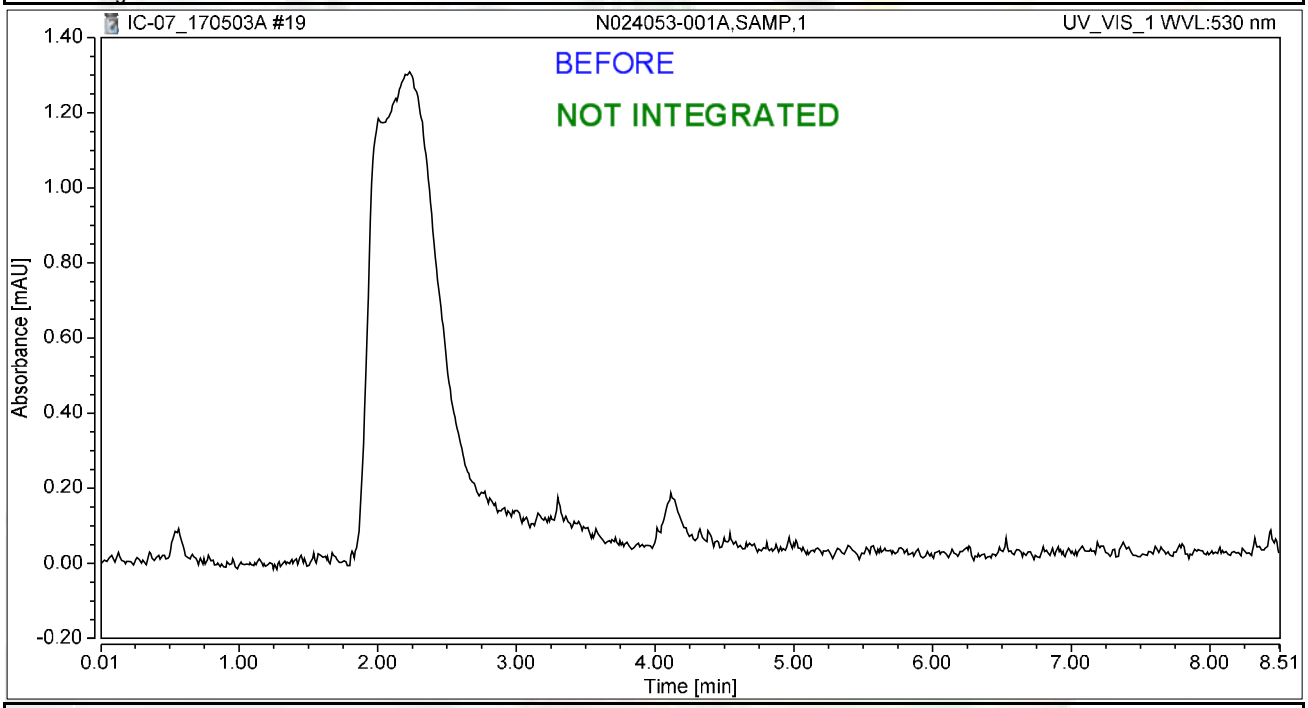
Chromatogram and Results

Injection Details

Injection Name:	**N024053-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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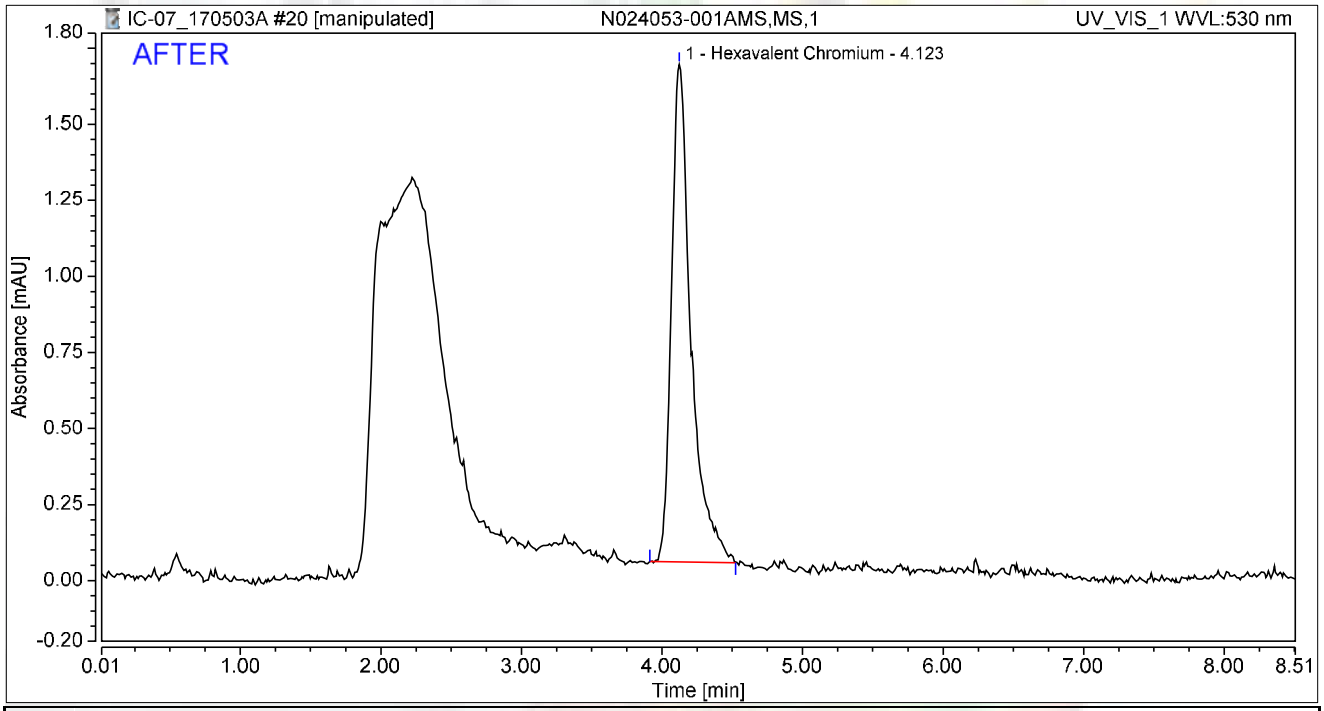
Chromatogram and Results

Injection Details

Injection Name:	**N024053-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.264	1.636	100.00	100.00	1.0810
Total:			**0.264**	**1.636**	**100.00**	**100.00**	

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My first report/Integration 5/11/2017

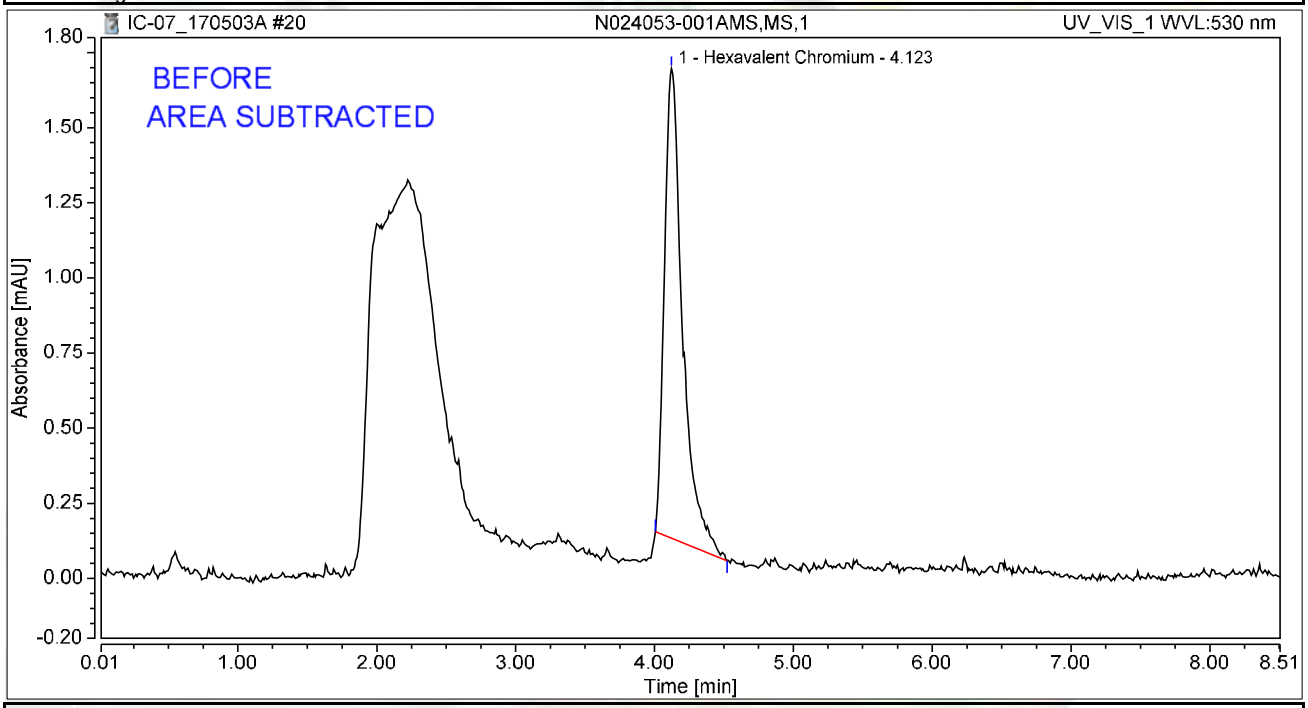
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024053-001AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 10:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.238	1.563	100.00	100.00	0.9740
Total:			**0.238**	**1.563**	**100.00**	**100.00**	

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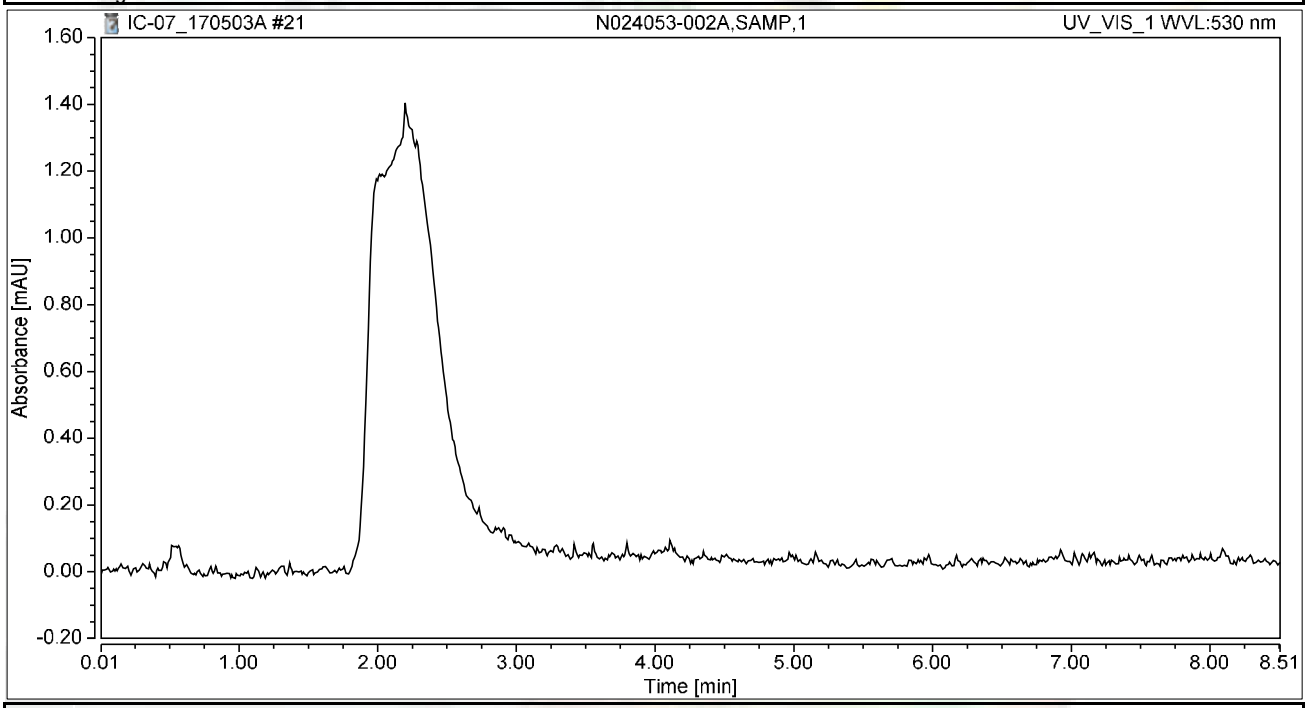
Chromatogram and Results

Injection Details

Injection Name:	**N024053-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

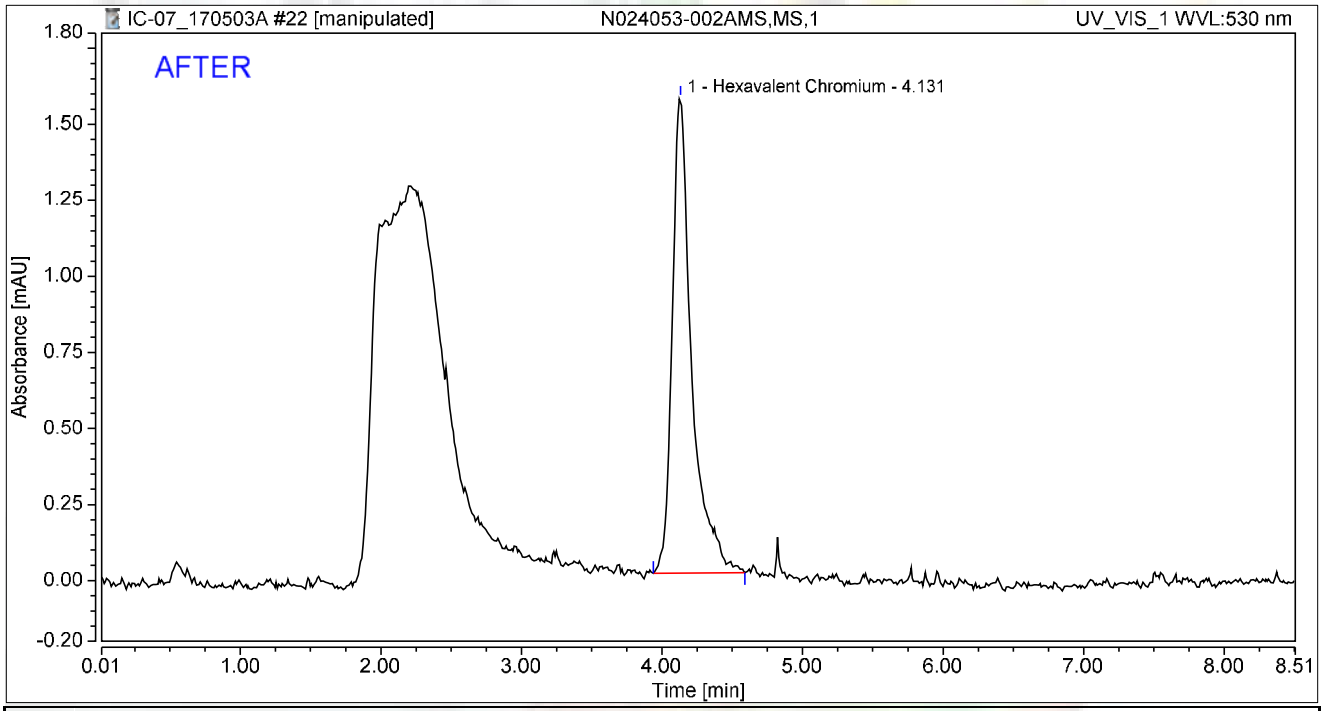
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.251	1.563	100.00	100.00	1.0288
Total:			**0.251**	**1.563**	**100.00**	**100.00**	

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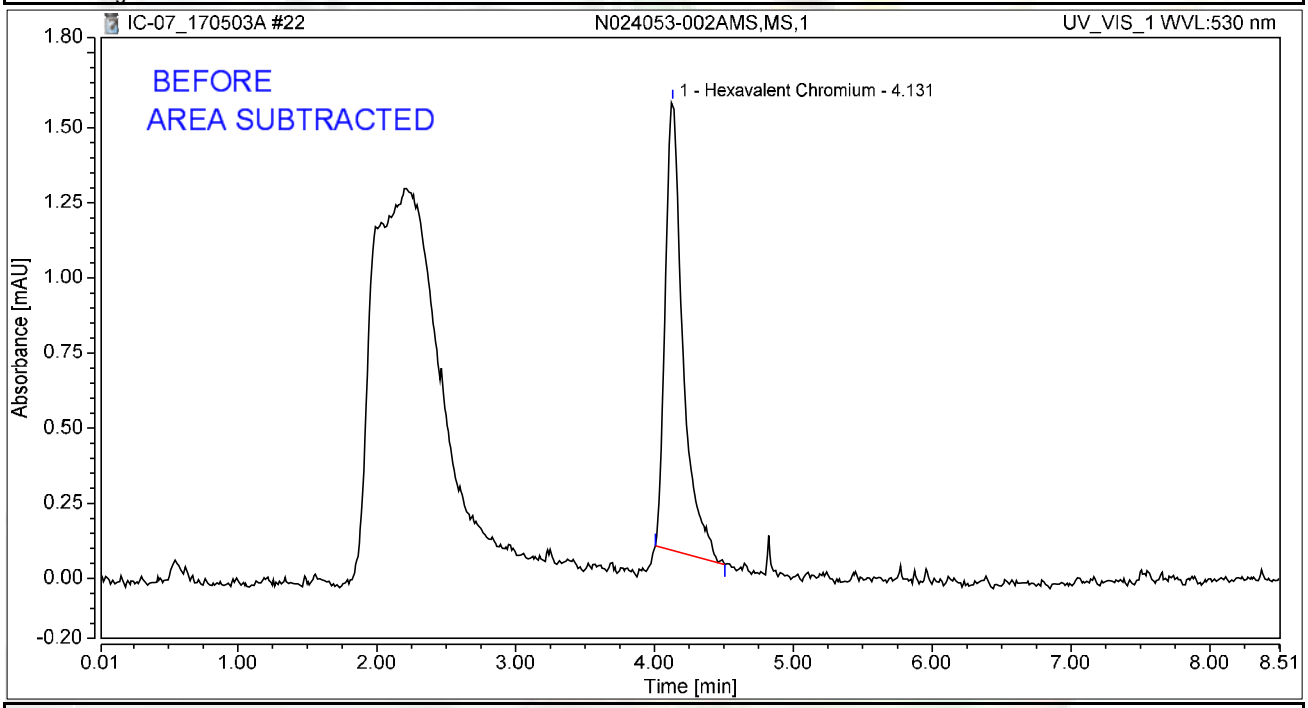
Chromatogram and Results

Injection Details

Injection Name:	**N024053-002AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.221	1.494	100.00	100.00	0.9070
Total:			**0.221**	**1.494**	**100.00**	**100.00**	

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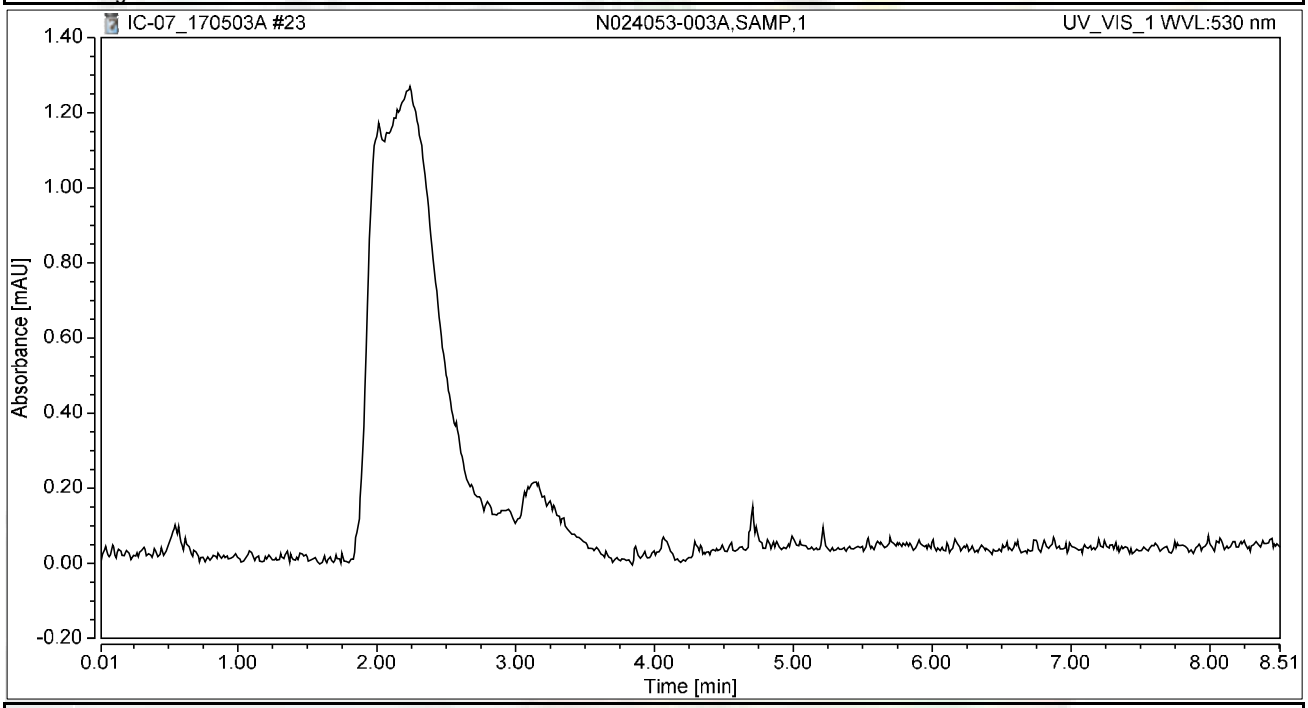
Chromatogram and Results

Injection Details

Injection Name:	**N024053-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

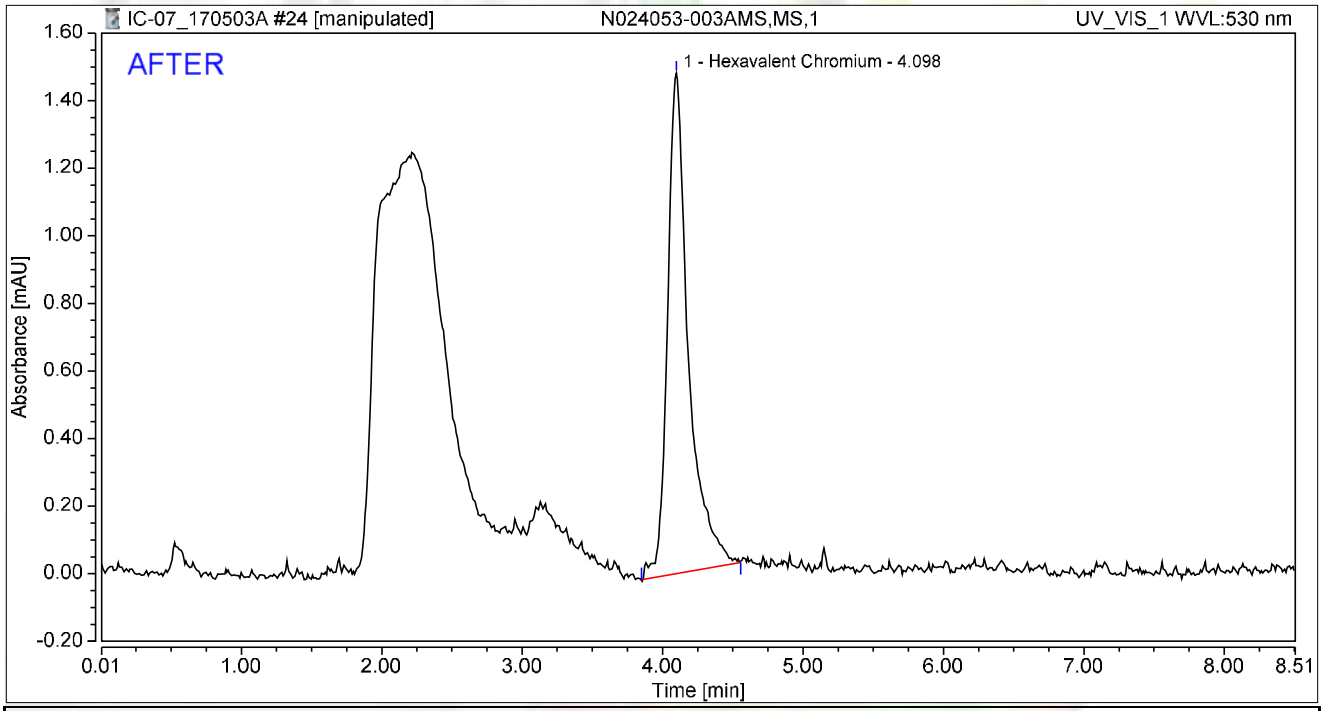
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.257	1.481	100.00	100.00	1.0529
Total:			**0.257**	**1.481**	**100.00**	**100.00**	

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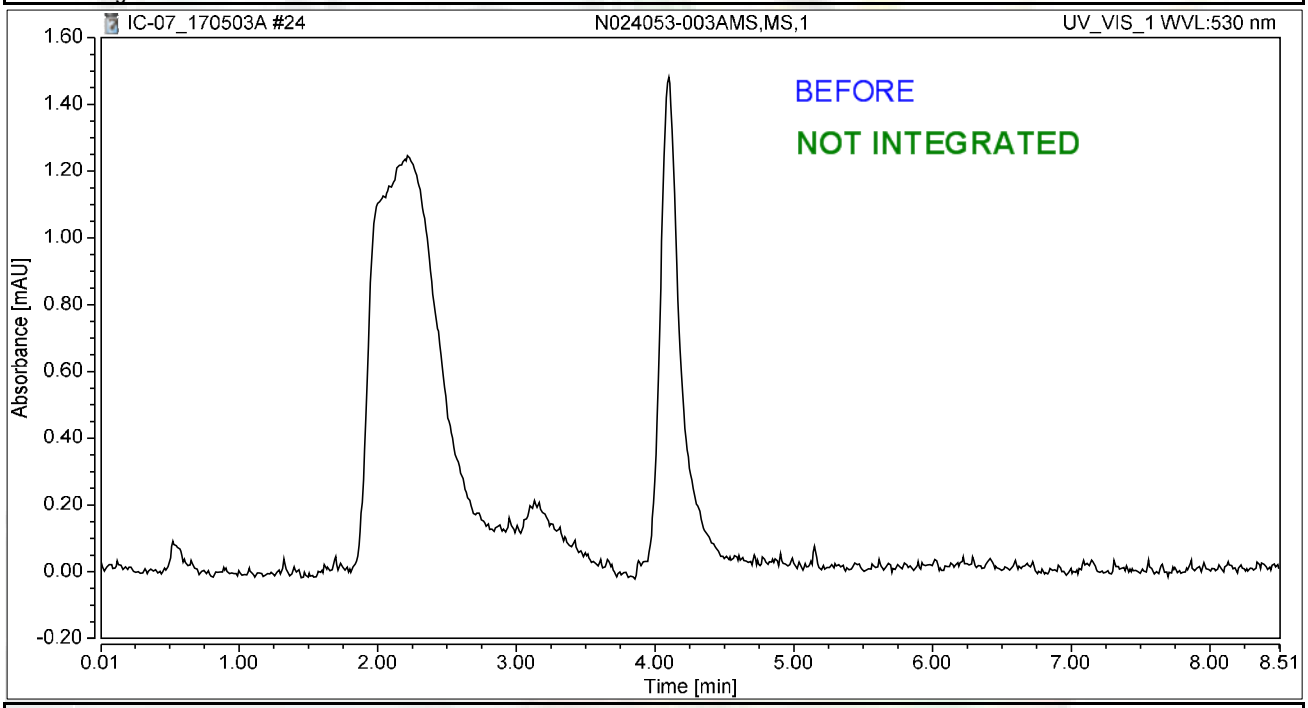
Chromatogram and Results

Injection Details

Injection Name:	**N024053-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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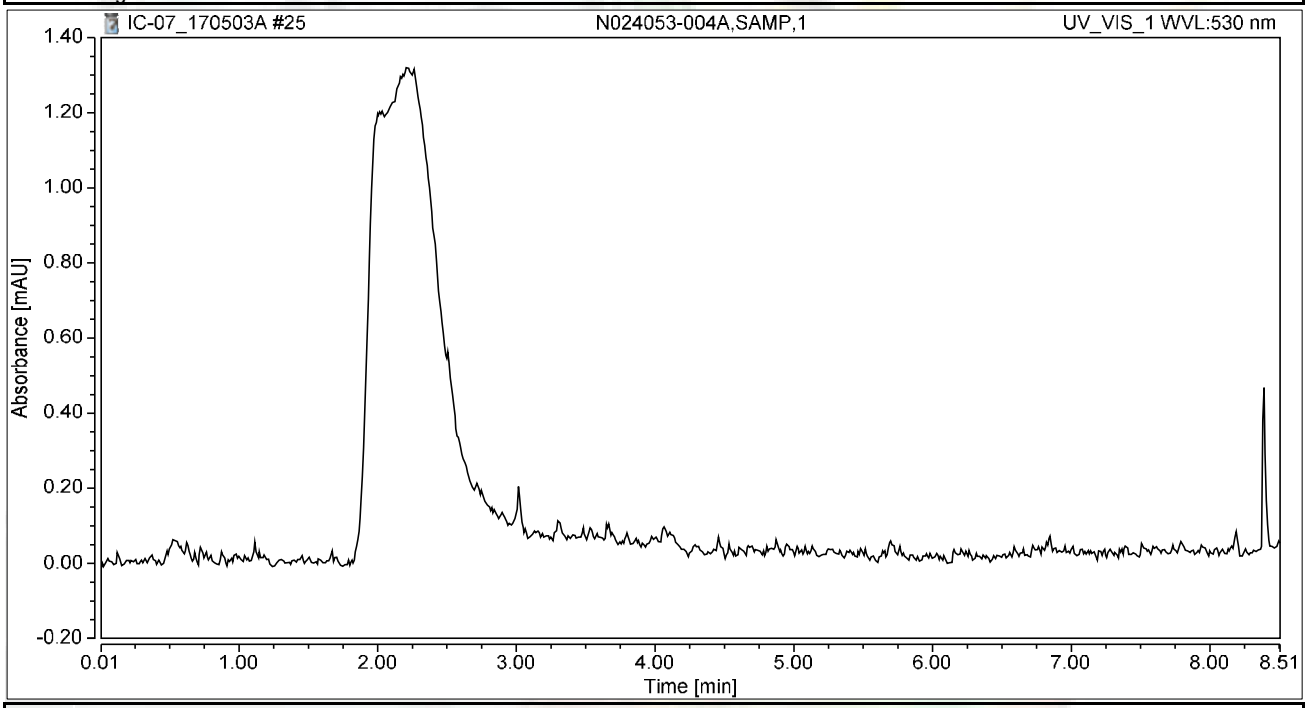
Chromatogram and Results

Injection Details

Injection Name:	**N024053-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

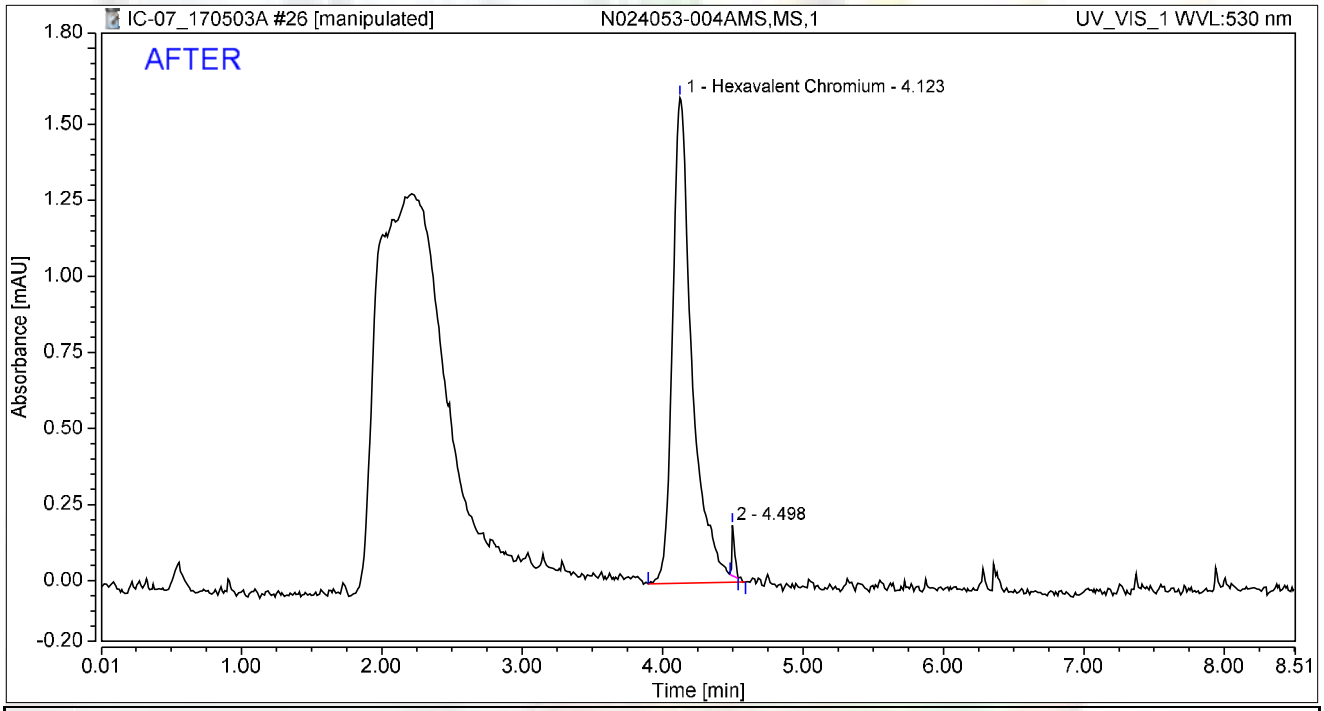
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.258	1.597	98.59	90.58	1.0586
2		4.498	0.004	0.166	1.41	9.42	n.a.
Total:			**0.262**	**1.763**	**100.00**	**100.00**	

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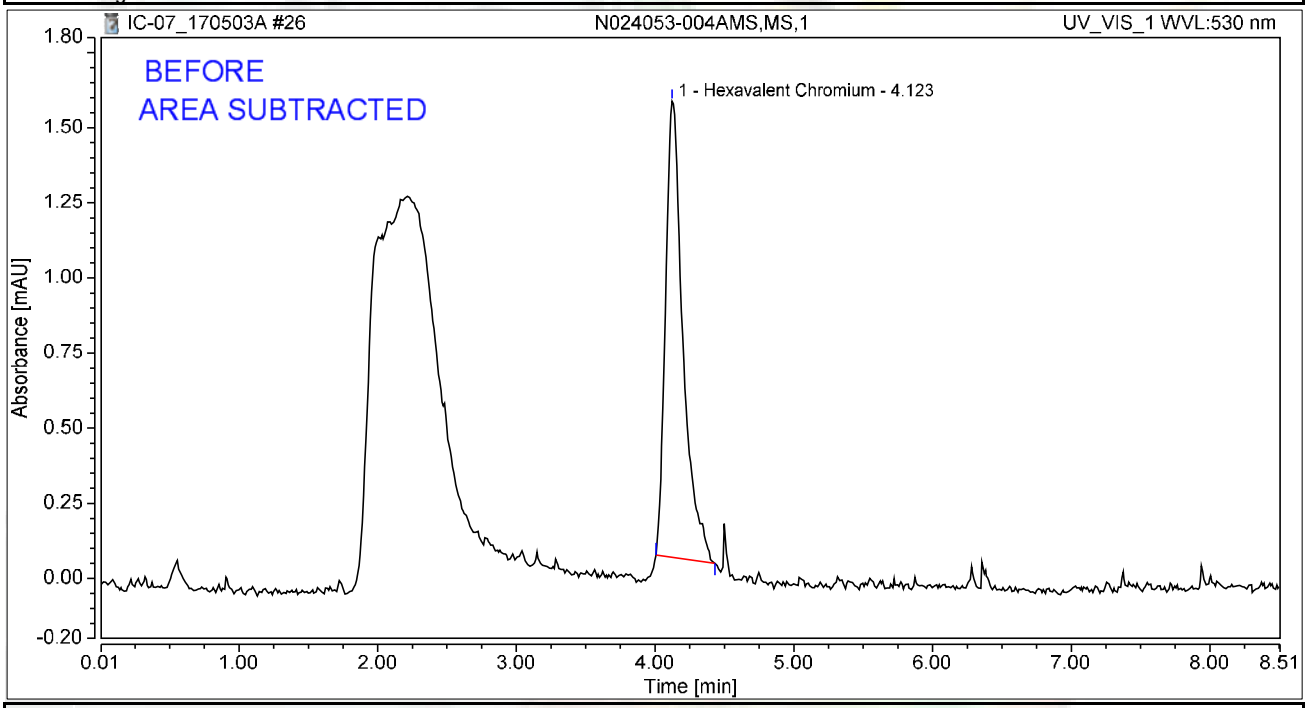
Chromatogram and Results

Injection Details

Injection Name:	**N024053-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 11:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.221	1.518	100.00	100.00	0.9073
Total:			**0.221**	**1.518**	**100.00**	**100.00**	

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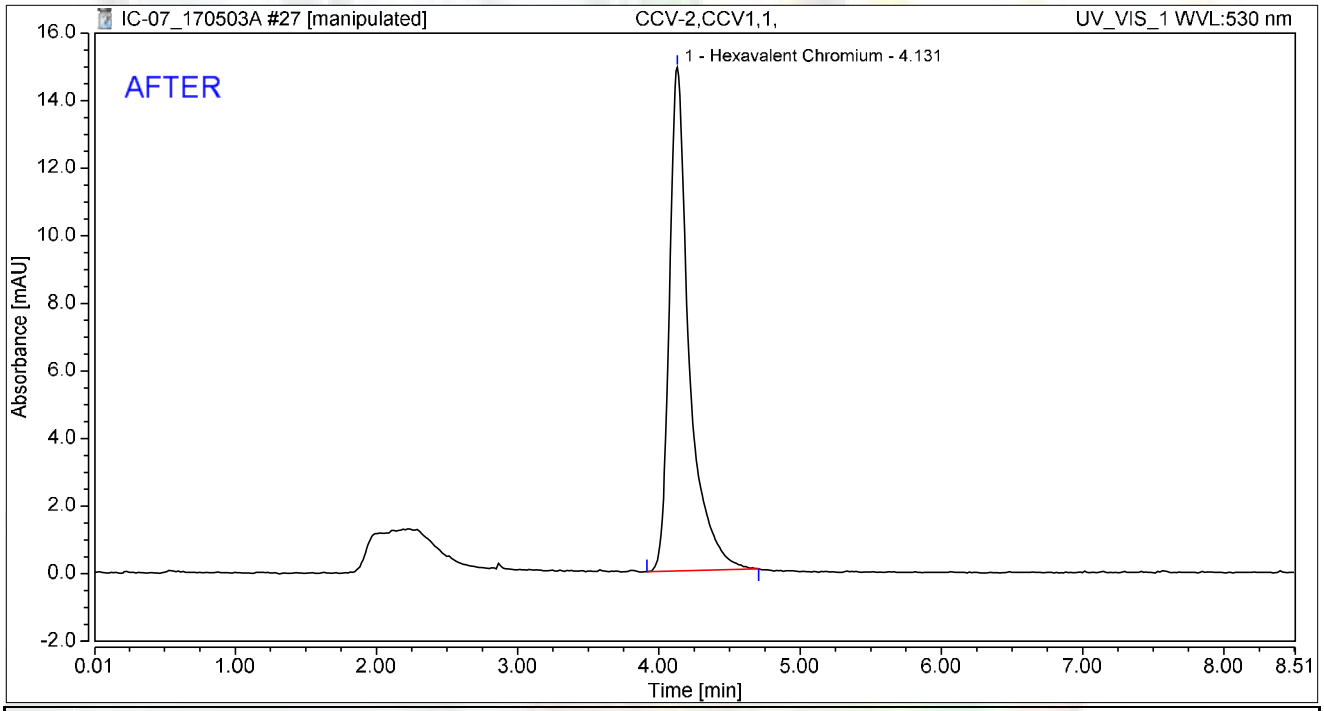
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.425	14.902	100.00	100.00	9.9449
Total:			**2.425**	**14.902**	**100.00**	**100.00**	

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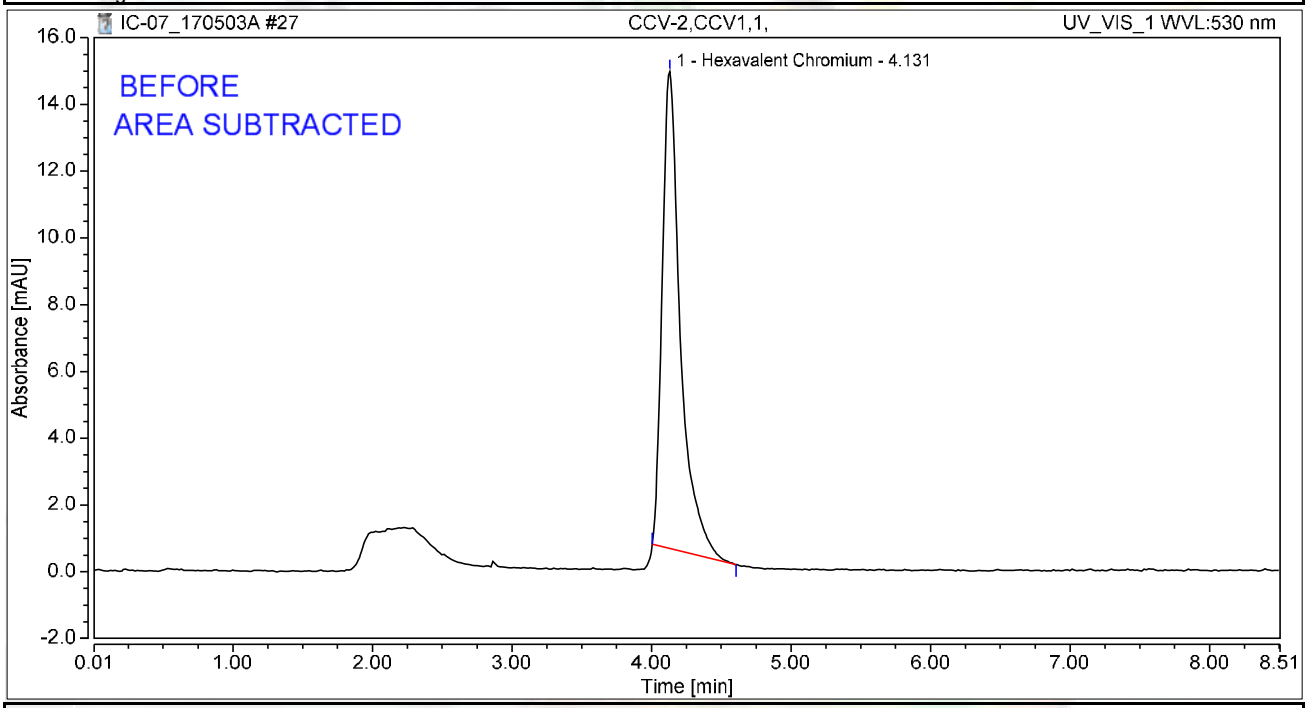
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.162	14.295	100.00	100.00	8.8650
Total:			**2.162**	**14.295**	**100.00**	**100.00**	

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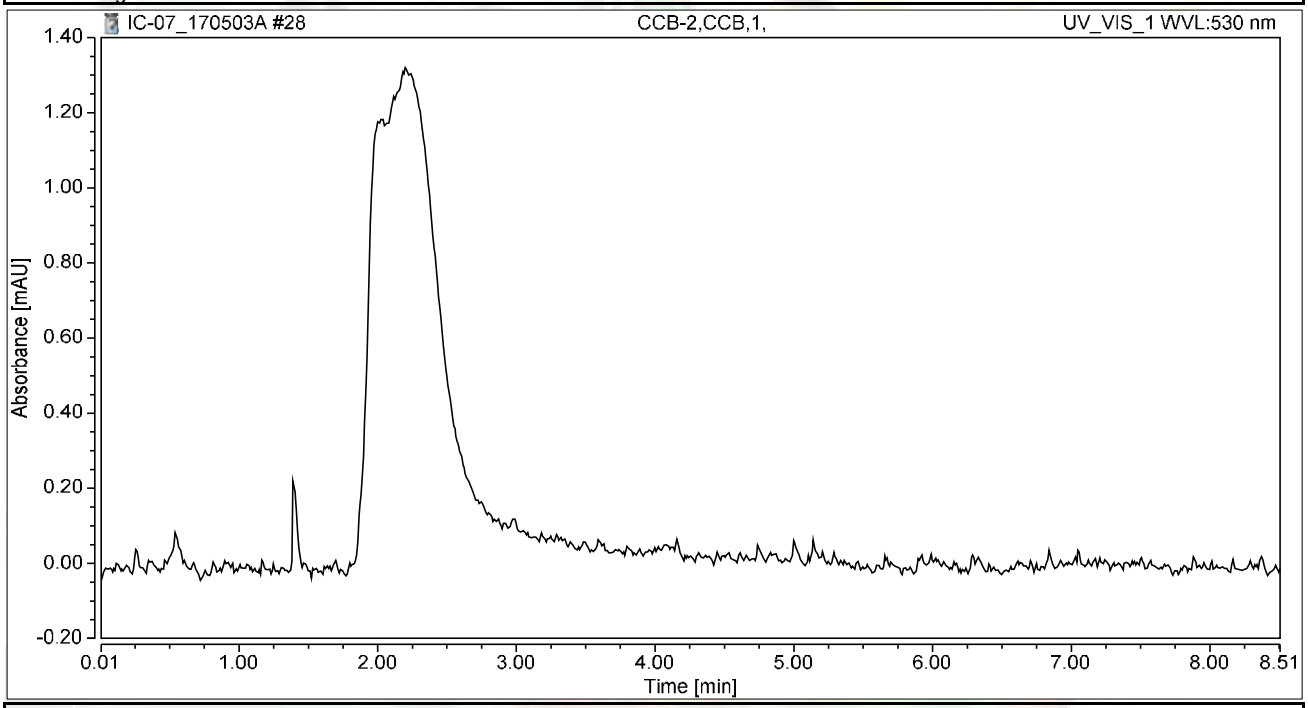
Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

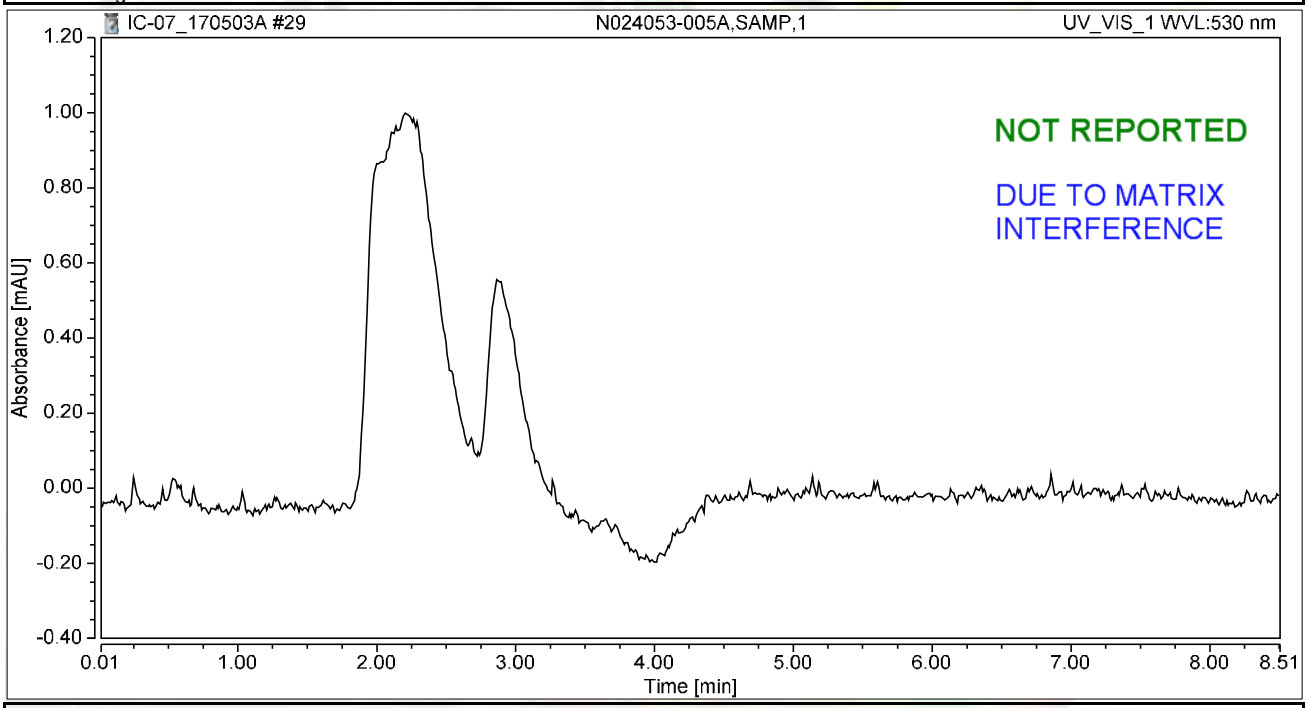
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

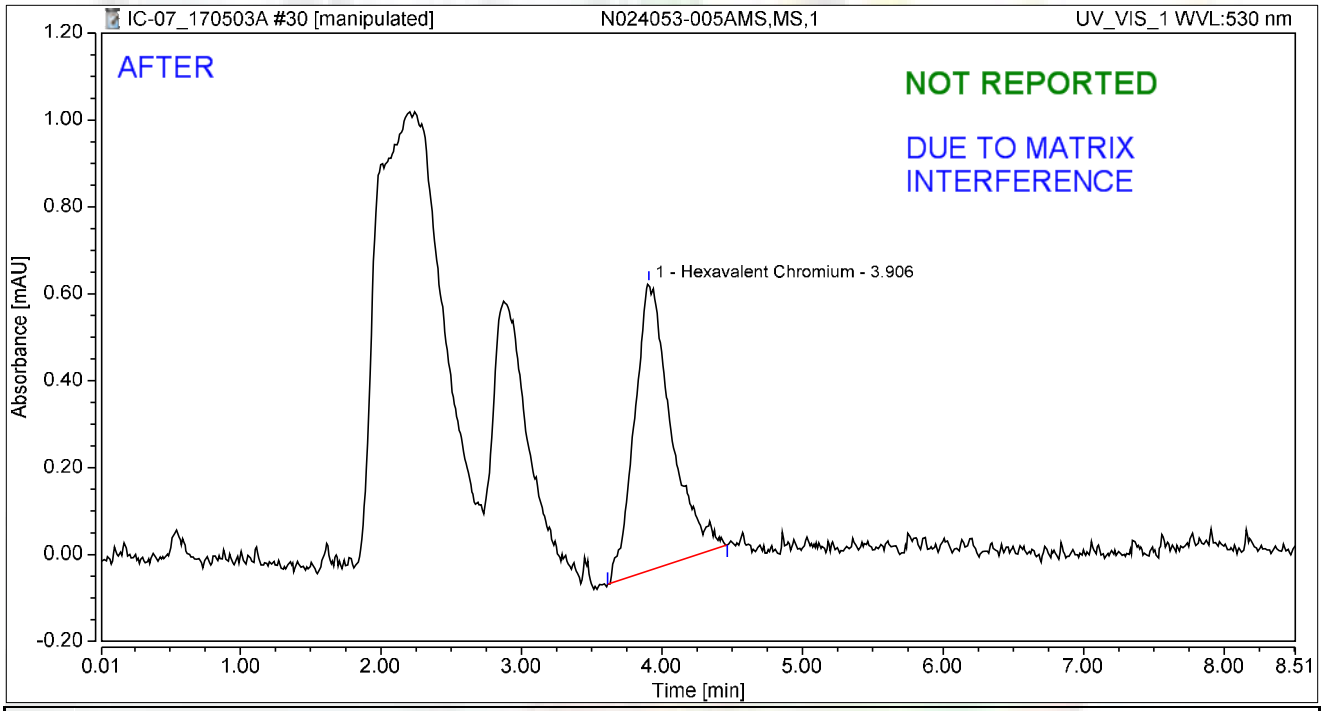
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.906	0.200	0.662	100.00	100.00	0.8192
Total:			**0.200**	**0.662**	**100.00**	**100.00**	

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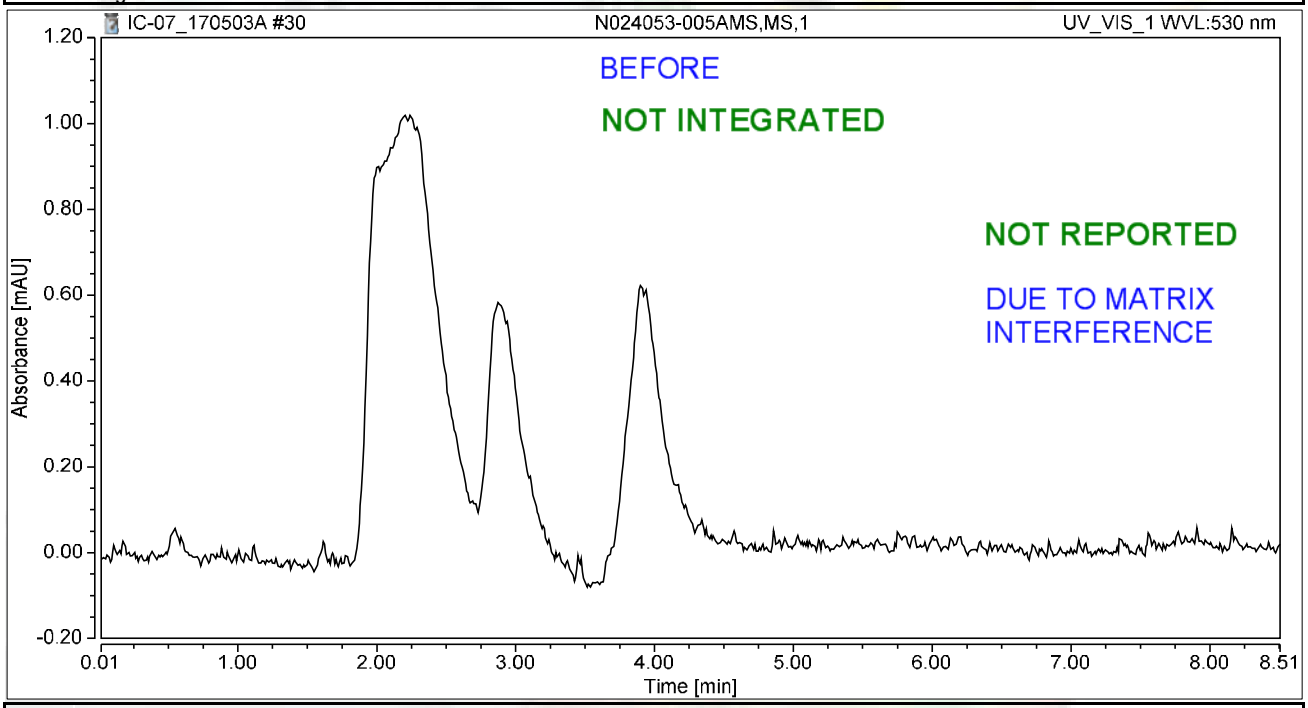
Chromatogram and Results

Injection Details

Injection Name:	**N024053-005AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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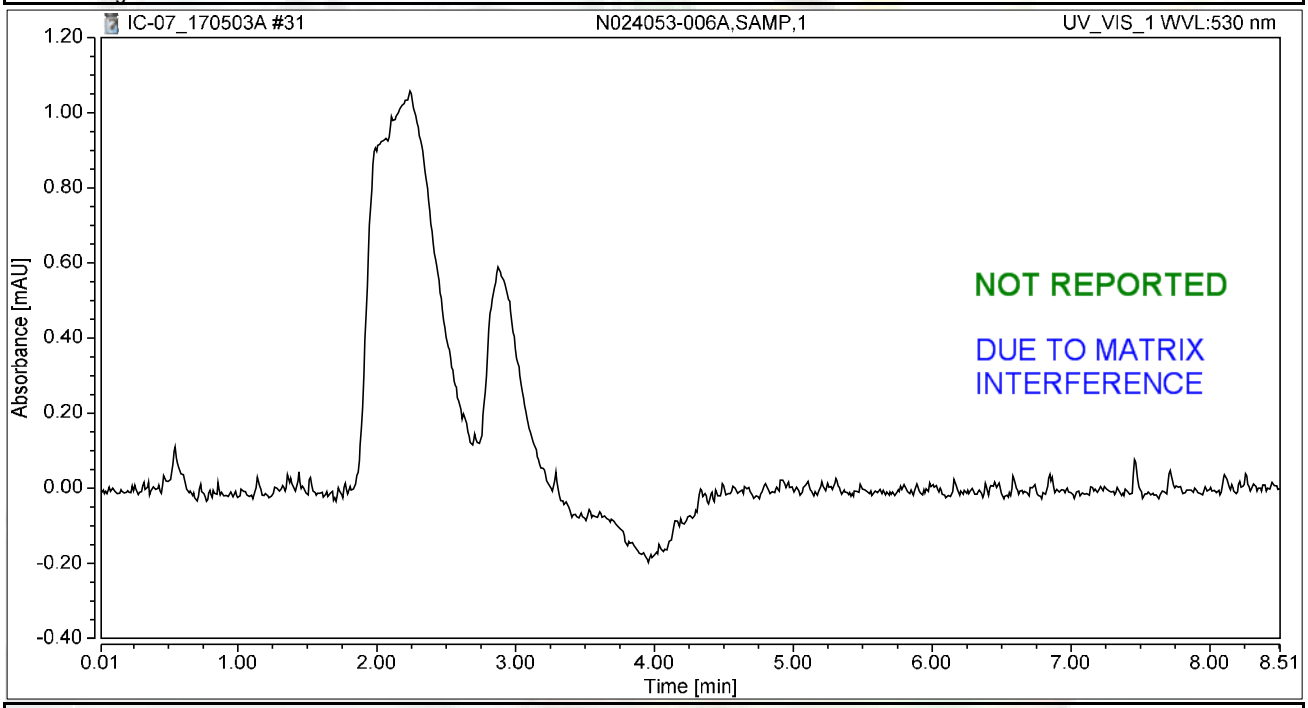
Chromatogram and Results

Injection Details

Injection Name:	**N024053-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

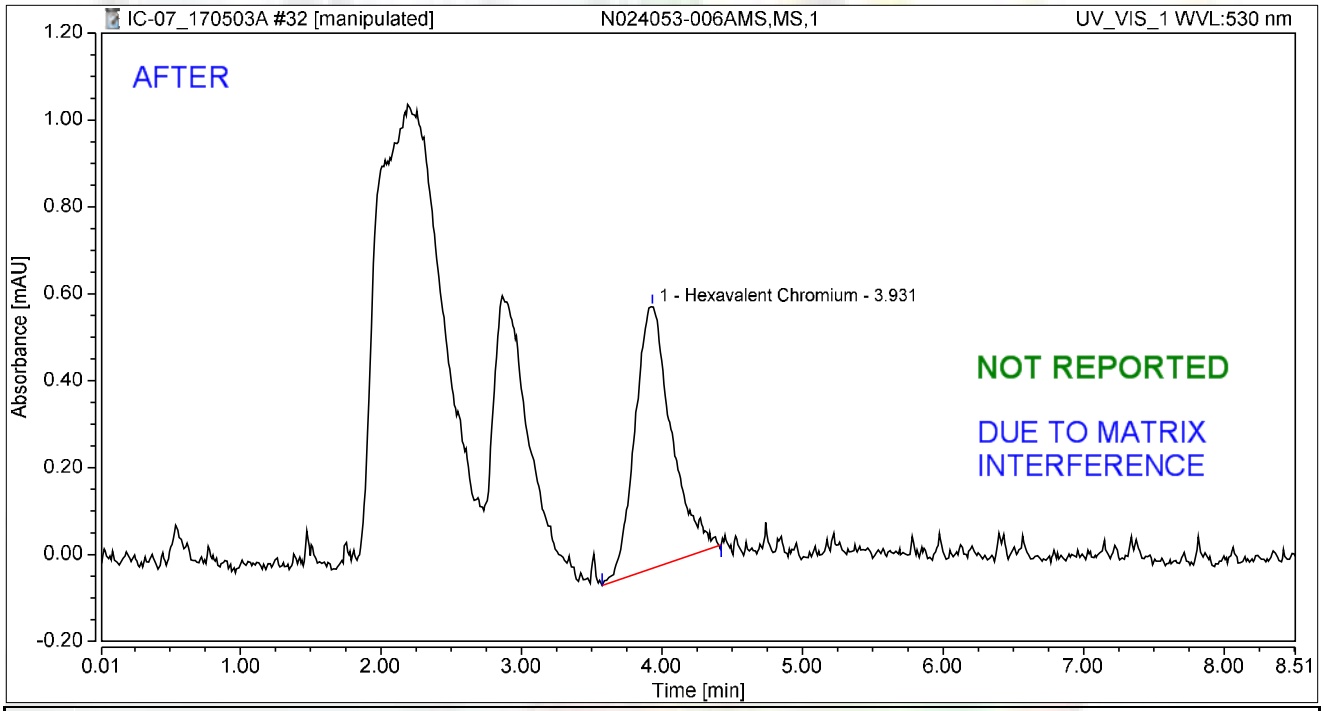
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-006AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.931	0.182	0.602	100.00	100.00	0.7445
Total:			**0.182**	**0.602**	**100.00**	**100.00**	

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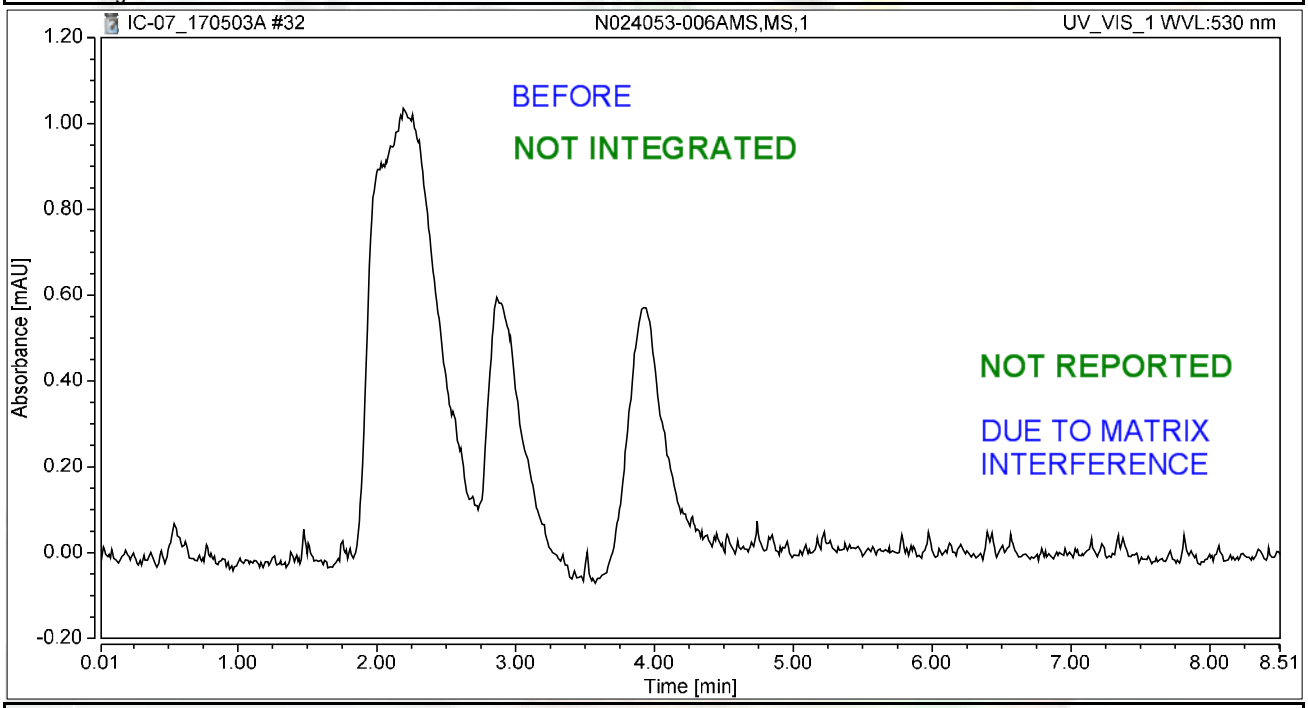
Chromatogram and Results

Injection Details

Injection Name:	**N024053-006AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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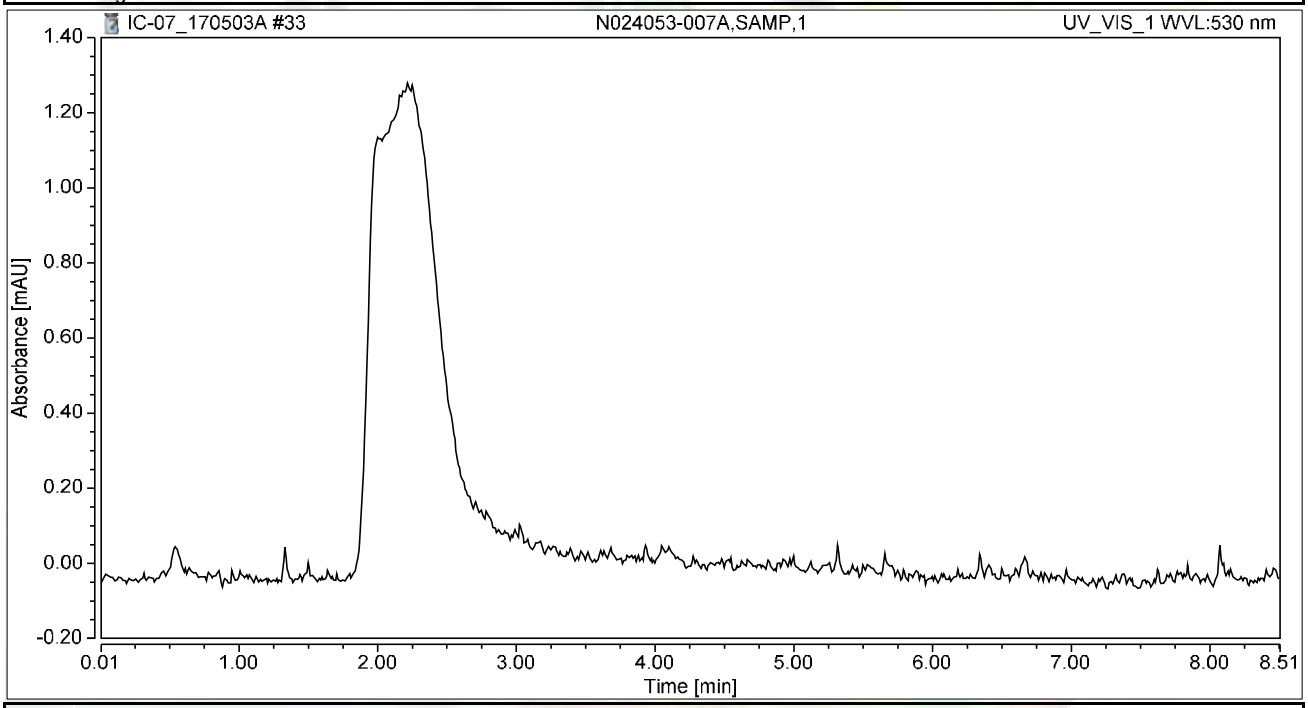
Chromatogram and Results

Injection Details

Injection Name:	**N024053-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 12:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

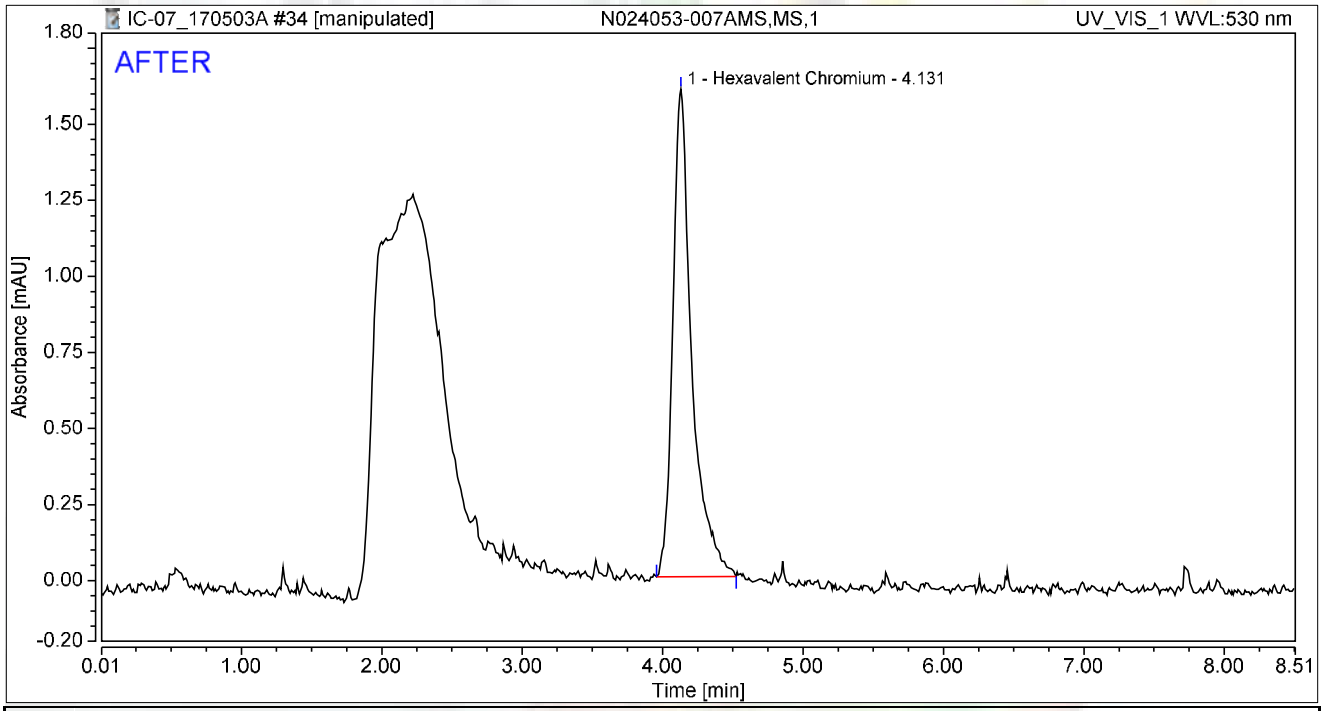
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.251	1.603	100.00	100.00	1.0311
Total:			**0.251**	**1.603**	**100.00**	**100.00**	

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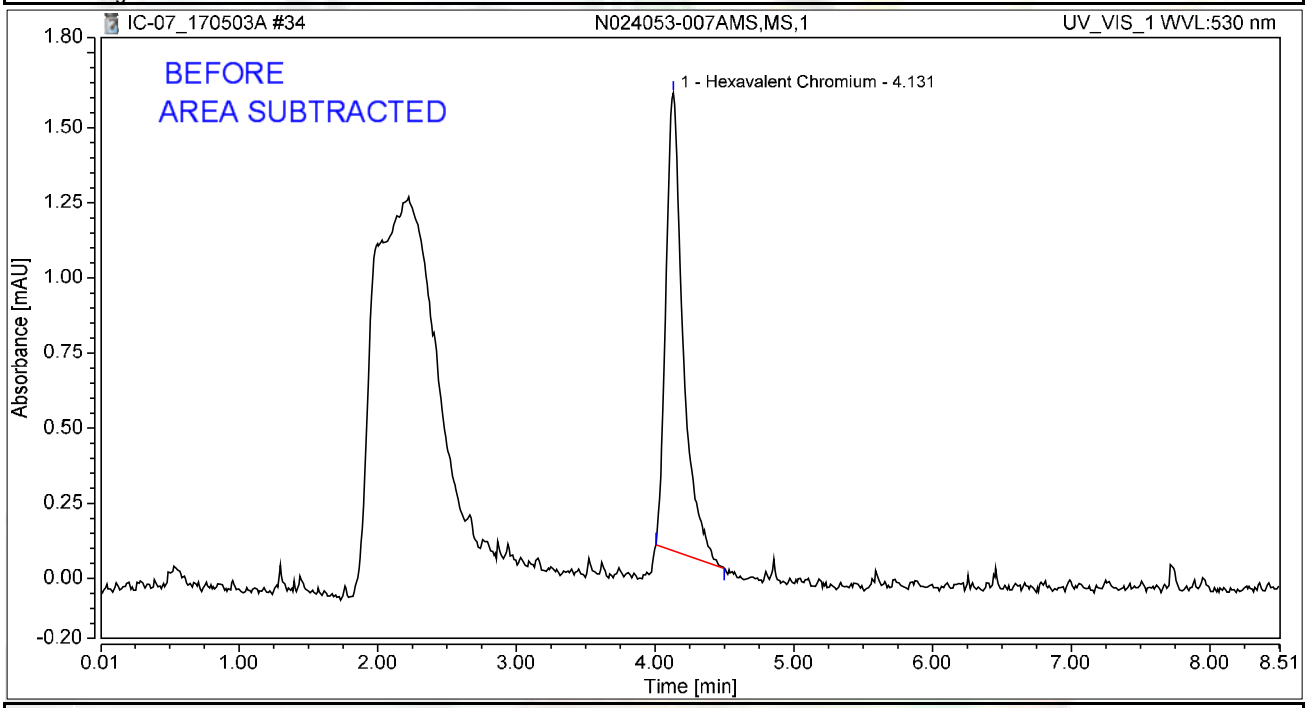
Chromatogram and Results

Injection Details

Injection Name:	**N024053-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.220	1.523	100.00	100.00	0.9009
Total:			**0.220**	**1.523**	**100.00**	**100.00**	

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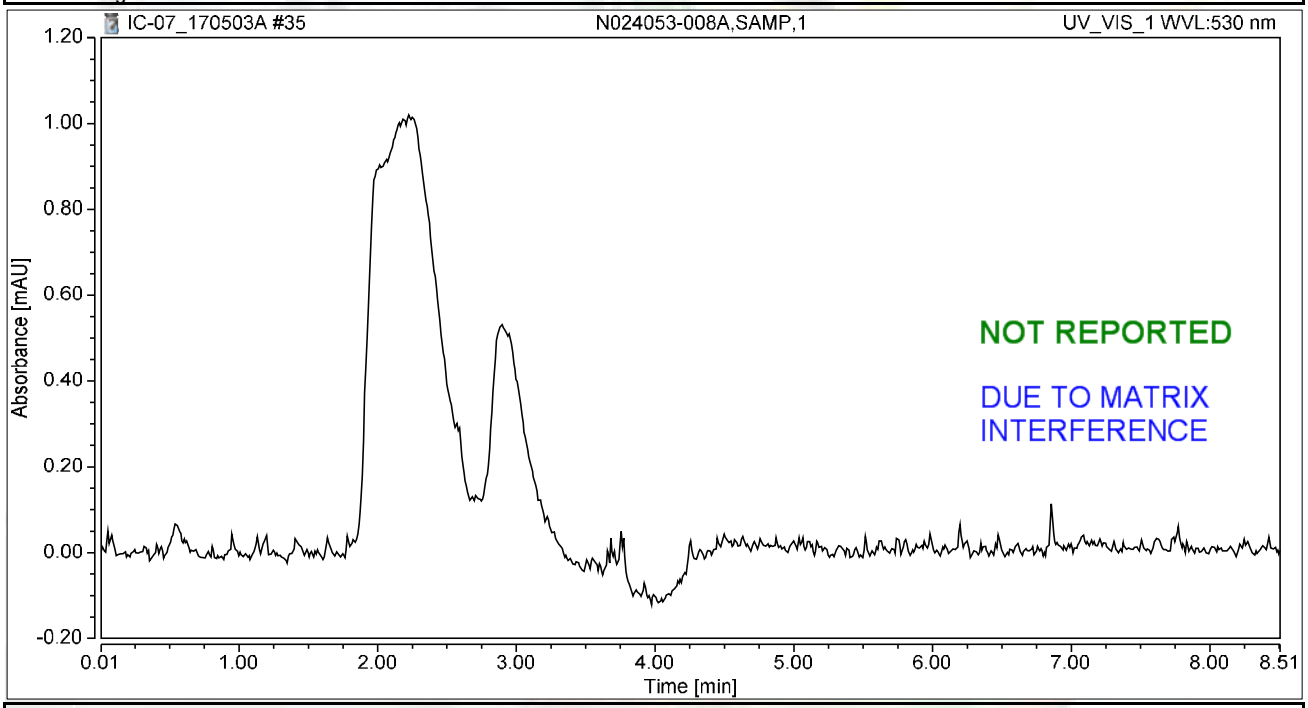
Chromatogram and Results

Injection Details

Injection Name:	**N024053-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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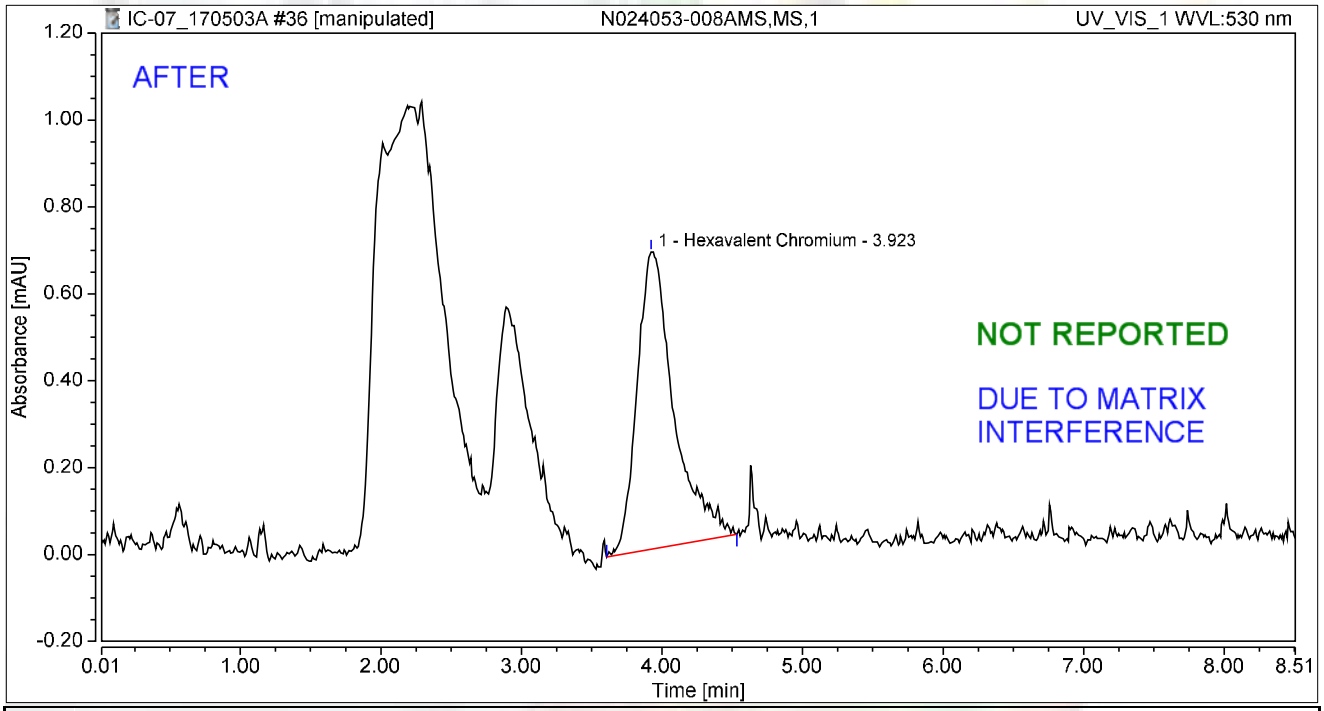
Chromatogram and Results

Injection Details

Injection Name:	**N024053-008AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.923	0.209	0.684	100.00	100.00	0.8550
Total:			**0.209**	**0.684**	**100.00**	**100.00**	

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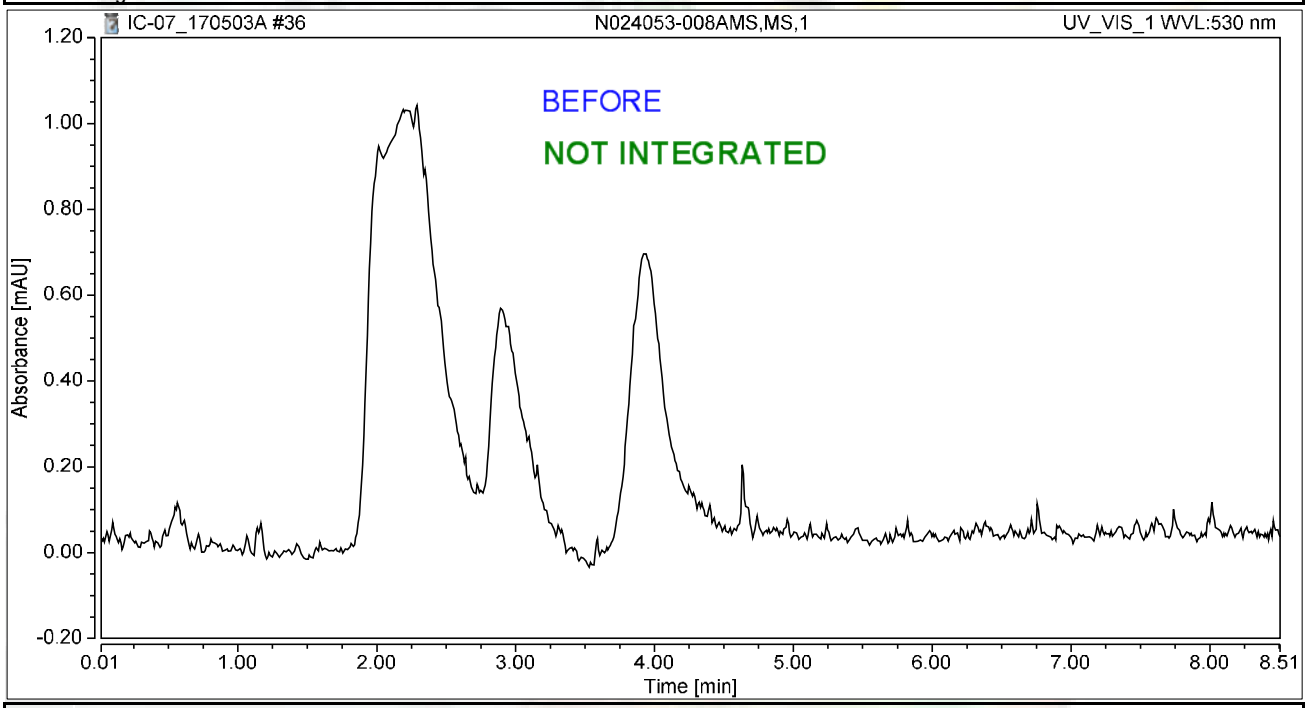
Chromatogram and Results

Injection Details

Injection Name:	**N024053-008AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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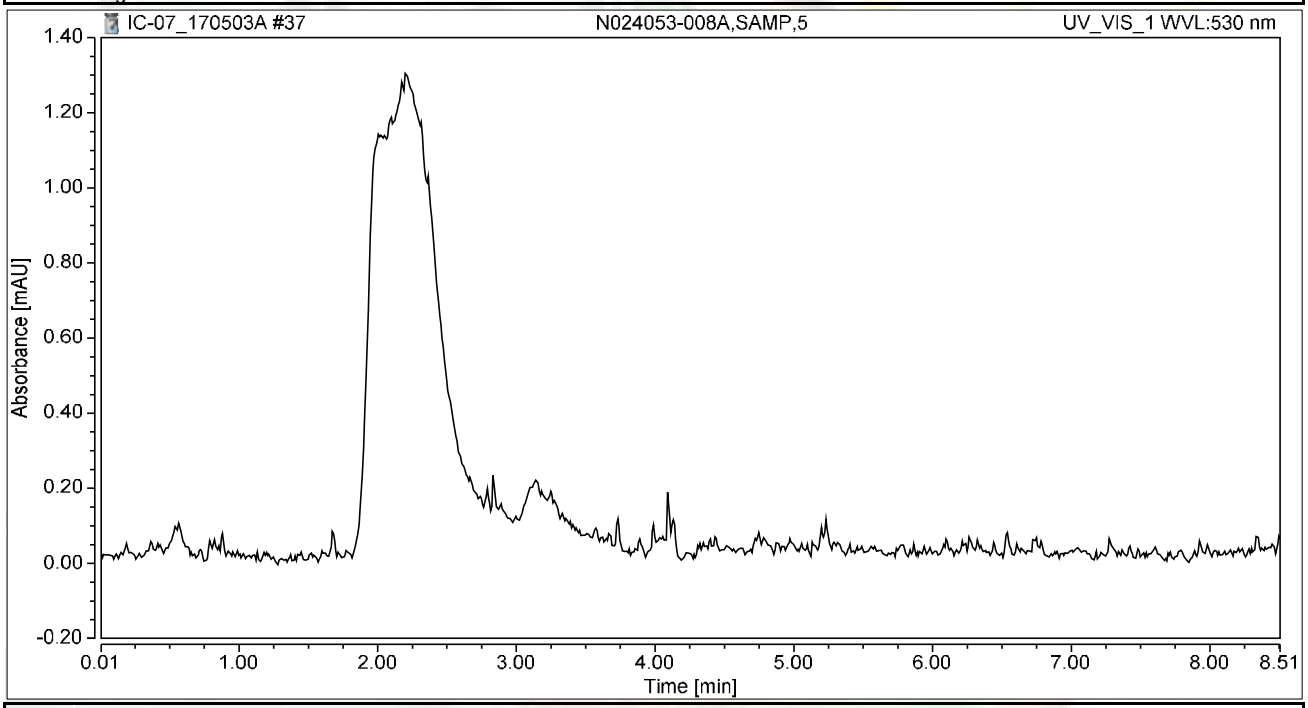
Chromatogram and Results

Injection Details

Injection Name:	**N024053-008A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

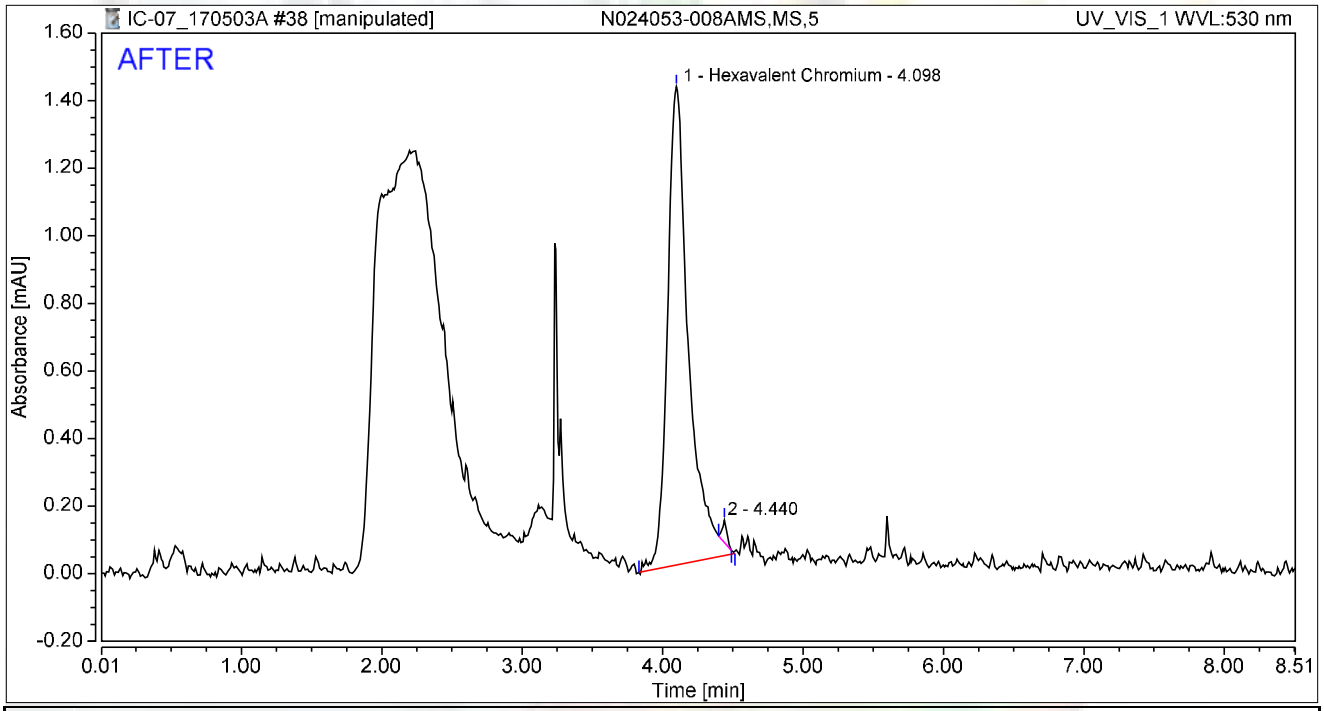
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-008AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.247	1.416	98.97	95.53	1.0121
2		4.440	0.003	0.066	1.03	4.47	n.a.
Total:			**0.249**	**1.482**	**100.00**	**100.00**	

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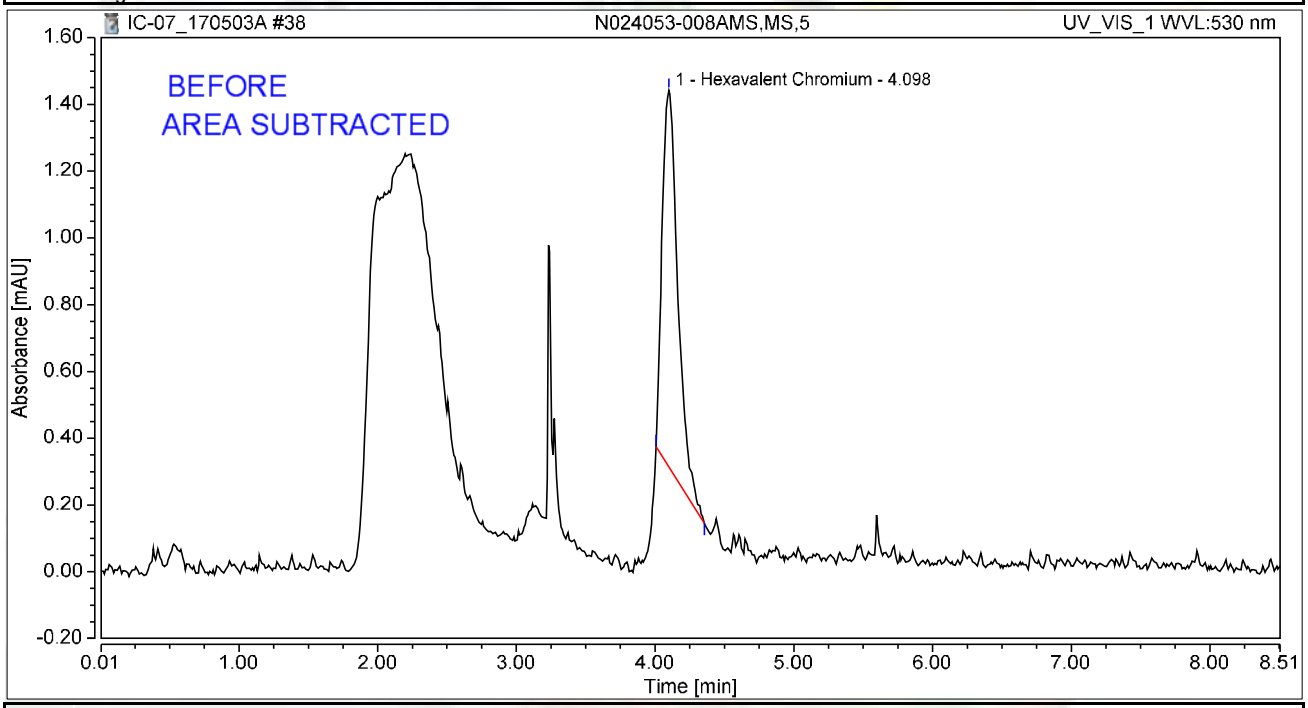
Chromatogram and Results

Injection Details

Injection Name:	**N024053-008AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.148	1.127	100.00	100.00	0.6085
Total:			**0.148**	**1.127**	**100.00**	**100.00**	

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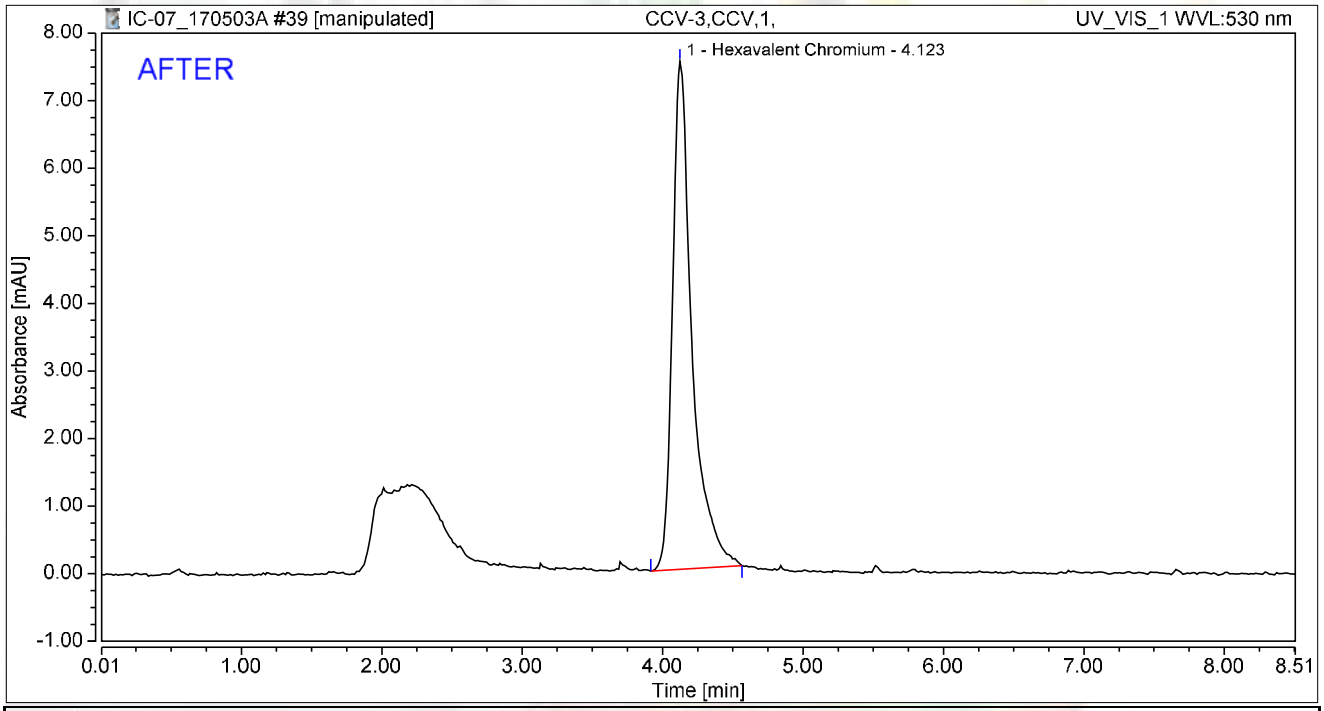
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.212	7.515	100.00	100.00	4.9692
Total:			**1.212**	**7.515**	**100.00**	**100.00**	

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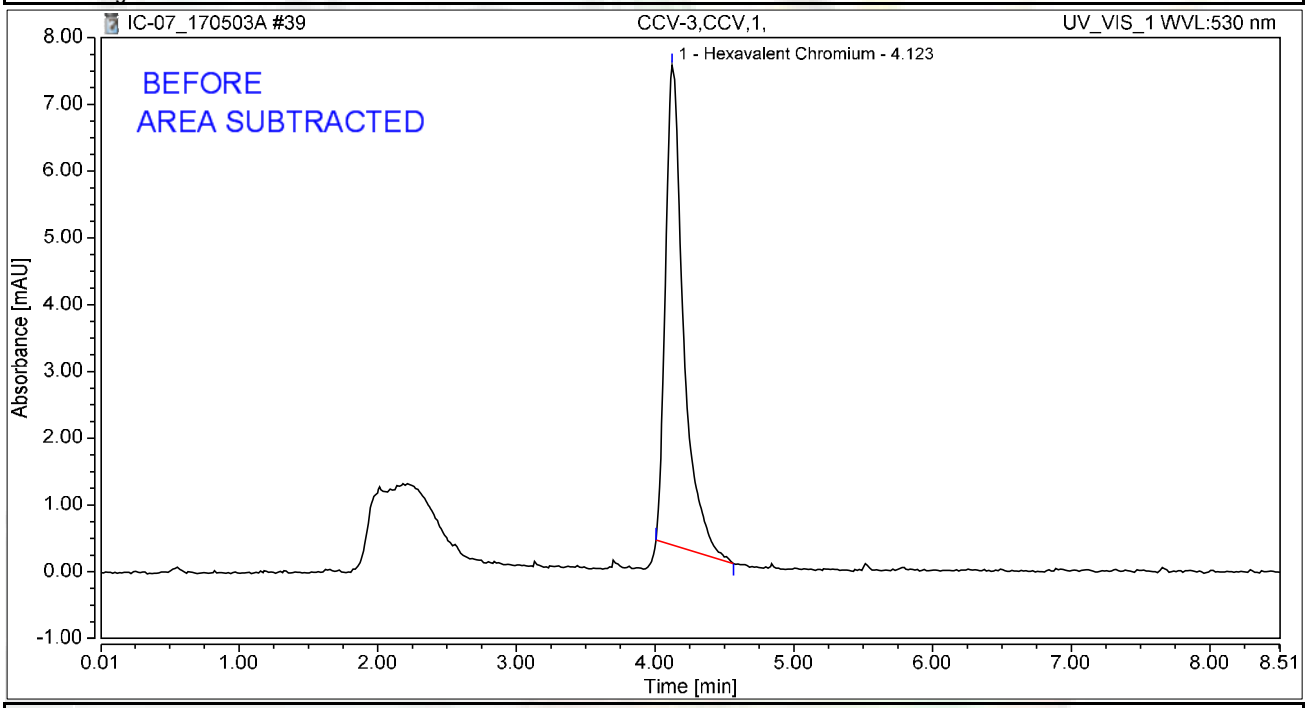
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 13:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.085	7.182	100.00	100.00	4.4495
Total:			**1.085**	**7.182**	**100.00**	**100.00**	

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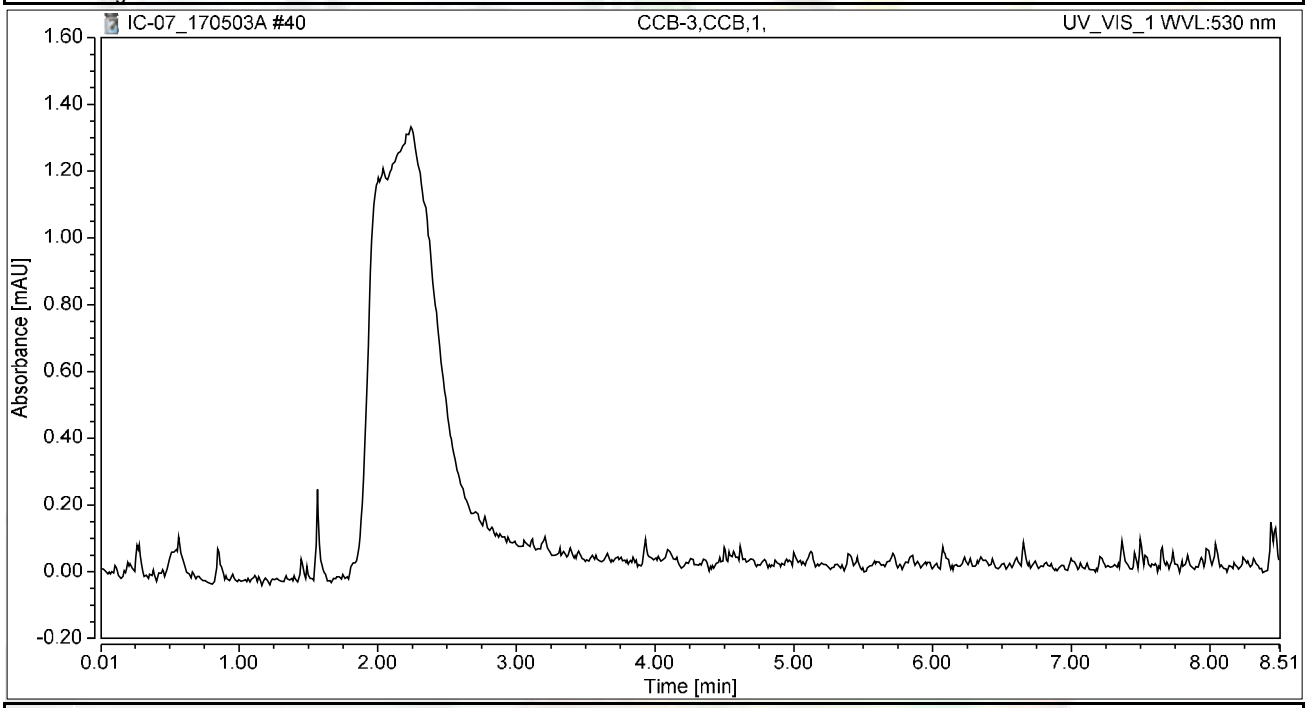
Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

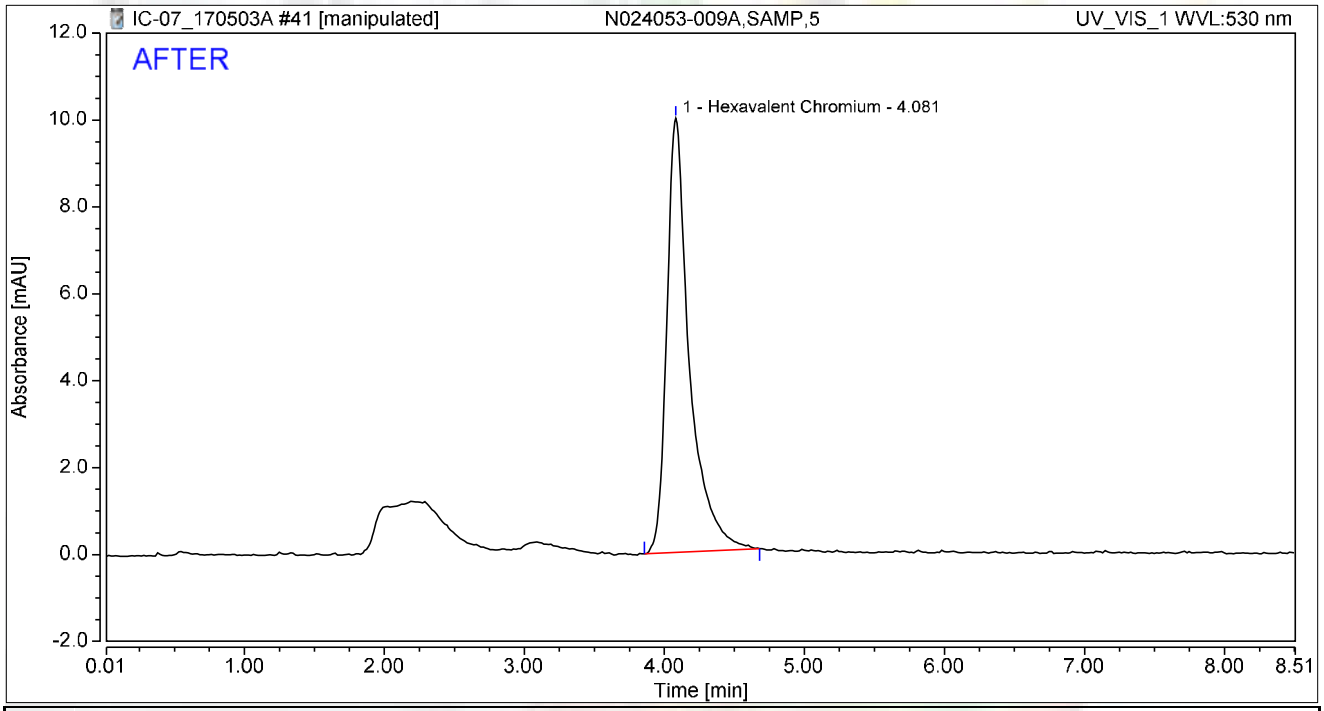
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-009A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	1.870	9.990	100.00	100.00	7.6676
Total:			**1.870**	**9.990**	**100.00**	**100.00**	

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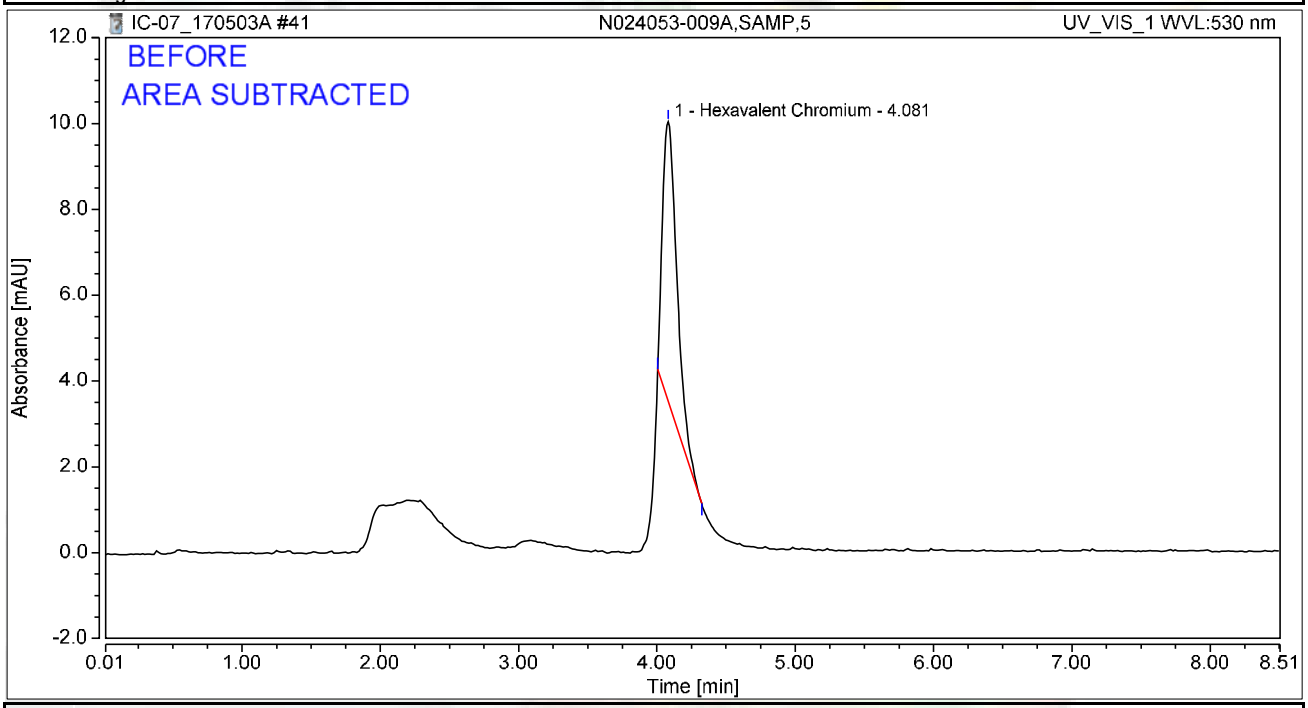
Chromatogram and Results

Injection Details

Injection Name:	**N024053-009A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.788	6.509	100.00	100.00	3.2313
Total:			**0.788**	**6.509**	**100.00**	**100.00**	

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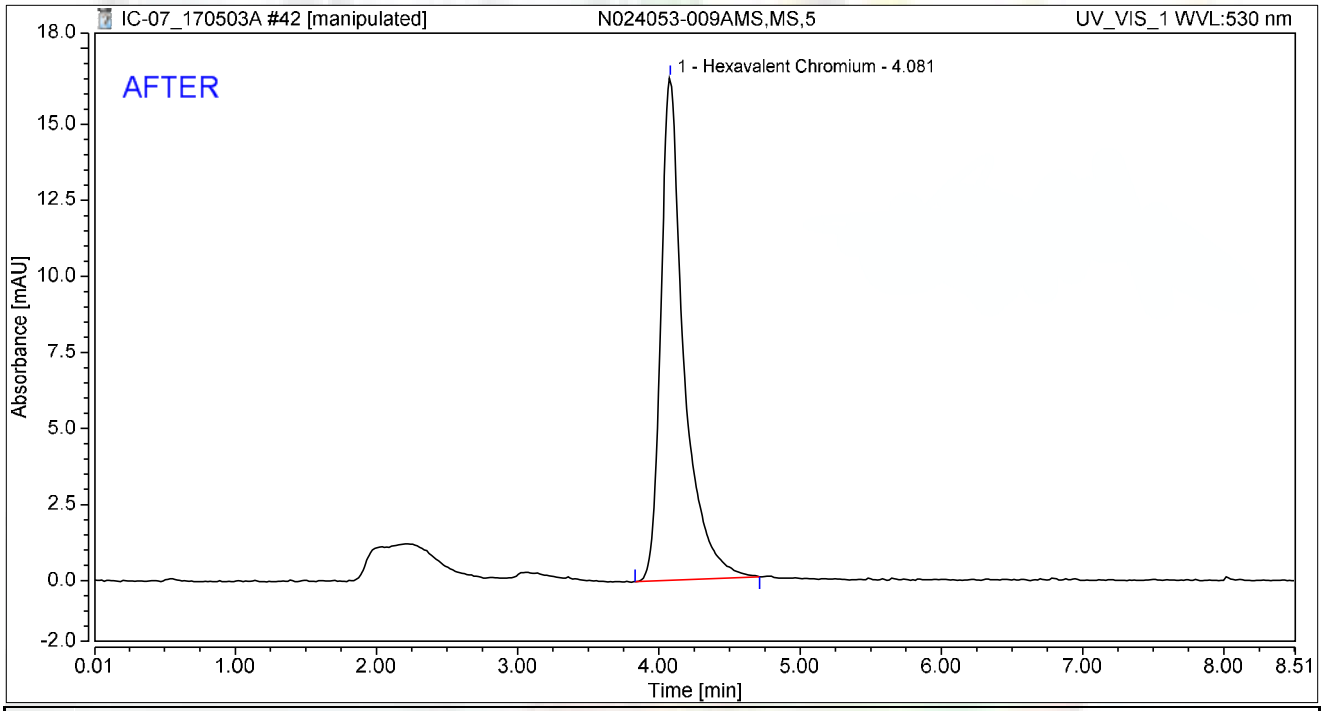
Chromatogram and Results

Injection Details

Injection Name:	**N024053-009AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	3.129	16.527	100.00	100.00	12.8312
Total:			**3.129**	**16.527**	**100.00**	**100.00**	

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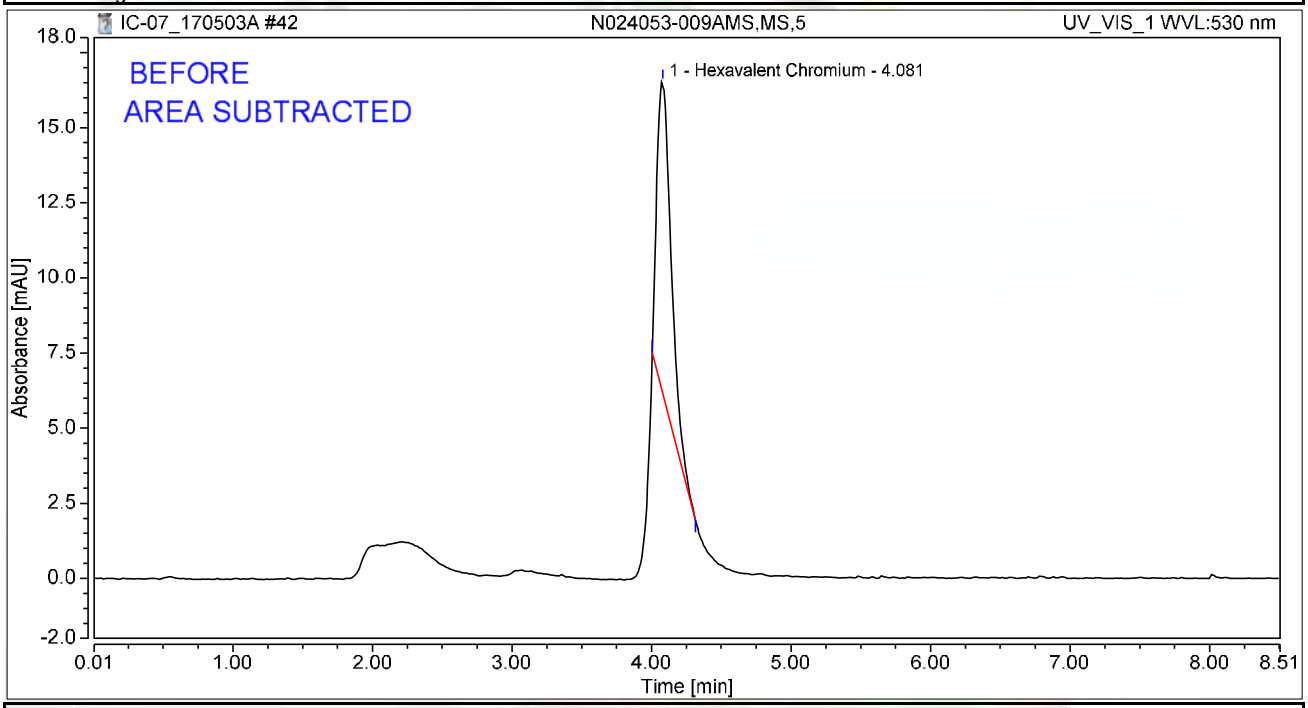
Chromatogram and Results

Injection Details

Injection Name:	**N024053-009AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	1.227	10.370	100.00	100.00	5.0312
Total:			**1.227**	**10.370**	**100.00**	**100.00**	

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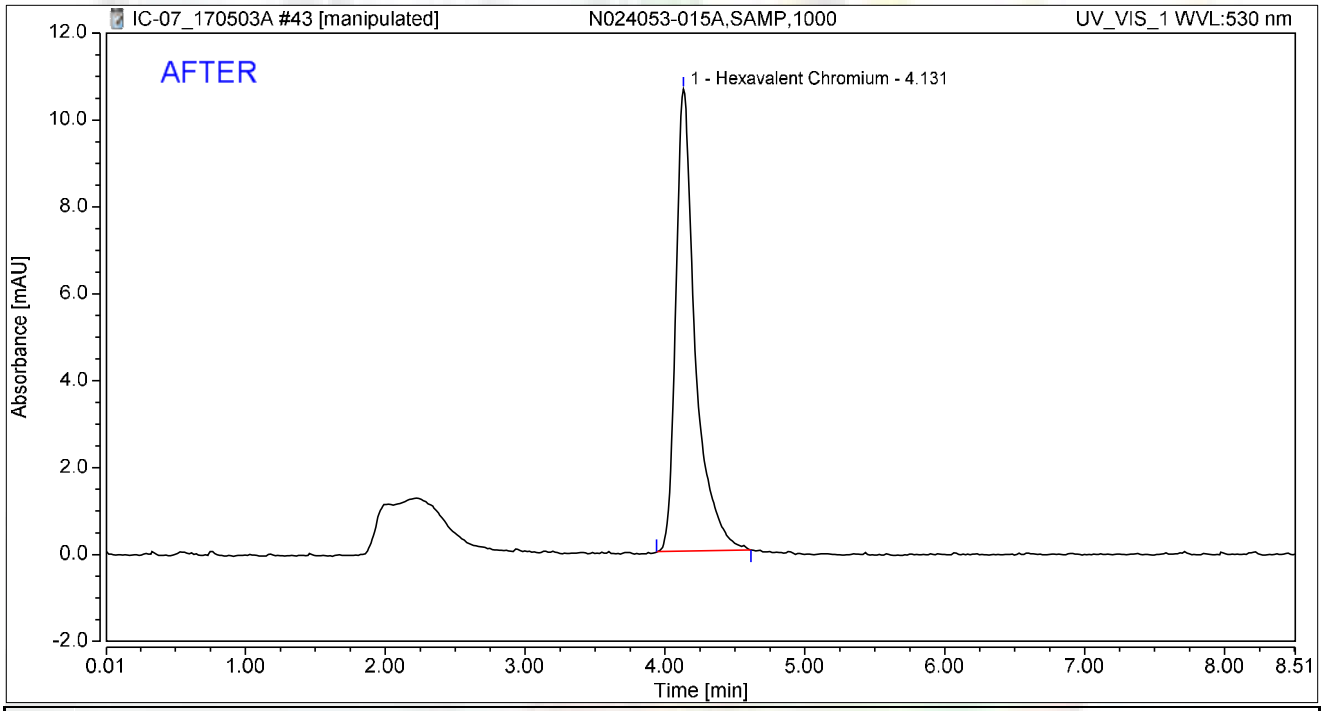
Chromatogram and Results

Injection Details

Injection Name:	**N024053-015A,SAMP,1000**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.719	10.629	100.00	100.00	7.0466
Total:			**1.719**	**10.629**	**100.00**	**100.00**	

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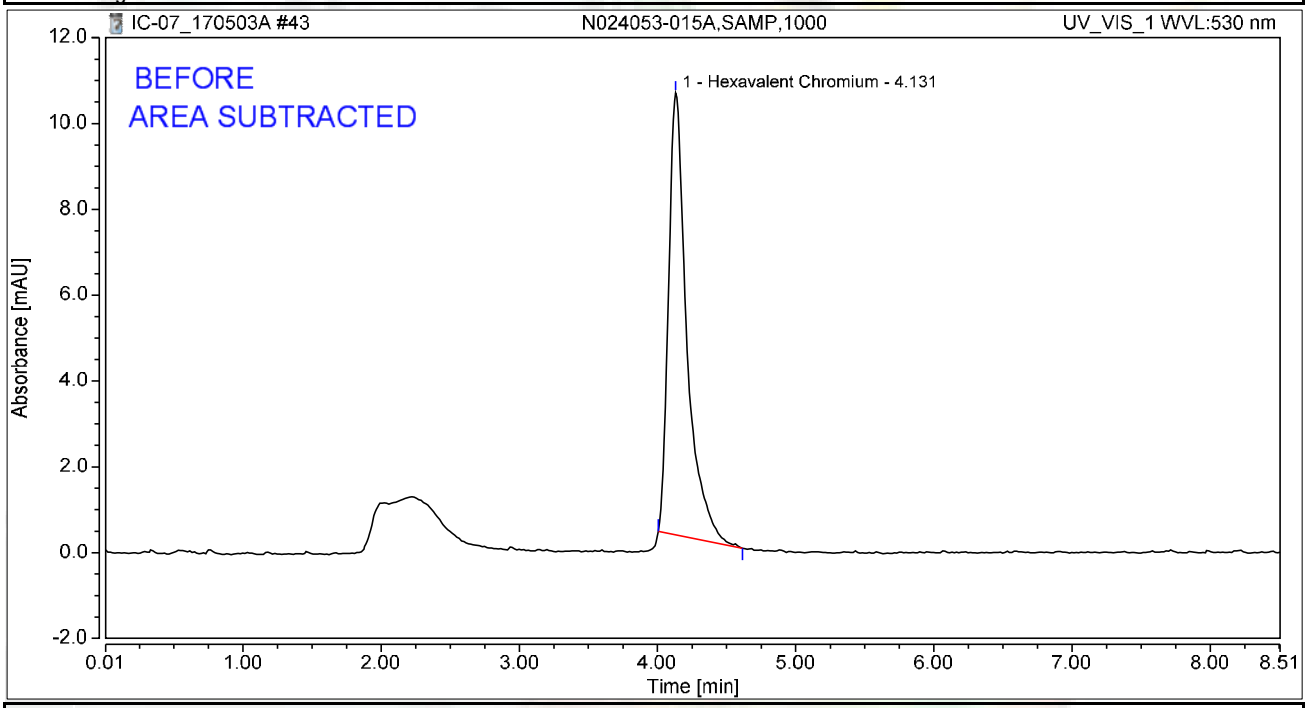
Chromatogram and Results

Injection Details

Injection Name:	**N024053-015A,SAMP,1000**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.583	10.292	100.00	100.00	6.4893
Total:			**1.583**	**10.292**	**100.00**	**100.00**	

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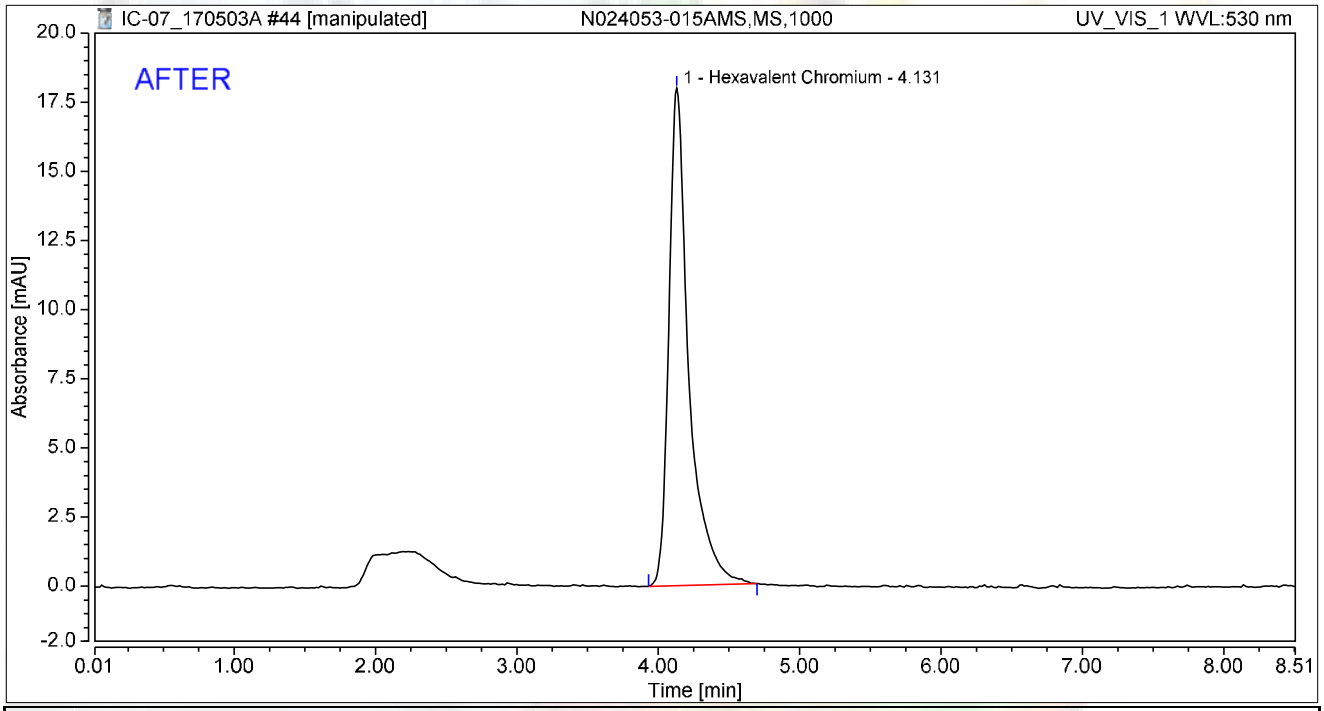
Chromatogram and Results

Injection Details

Injection Name:	**N024053-015AMS,MS,1000**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.944	17.985	100.00	100.00	12.0698
Total:			**2.944**	**17.985**	**100.00**	**100.00**	

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My first report/Integration

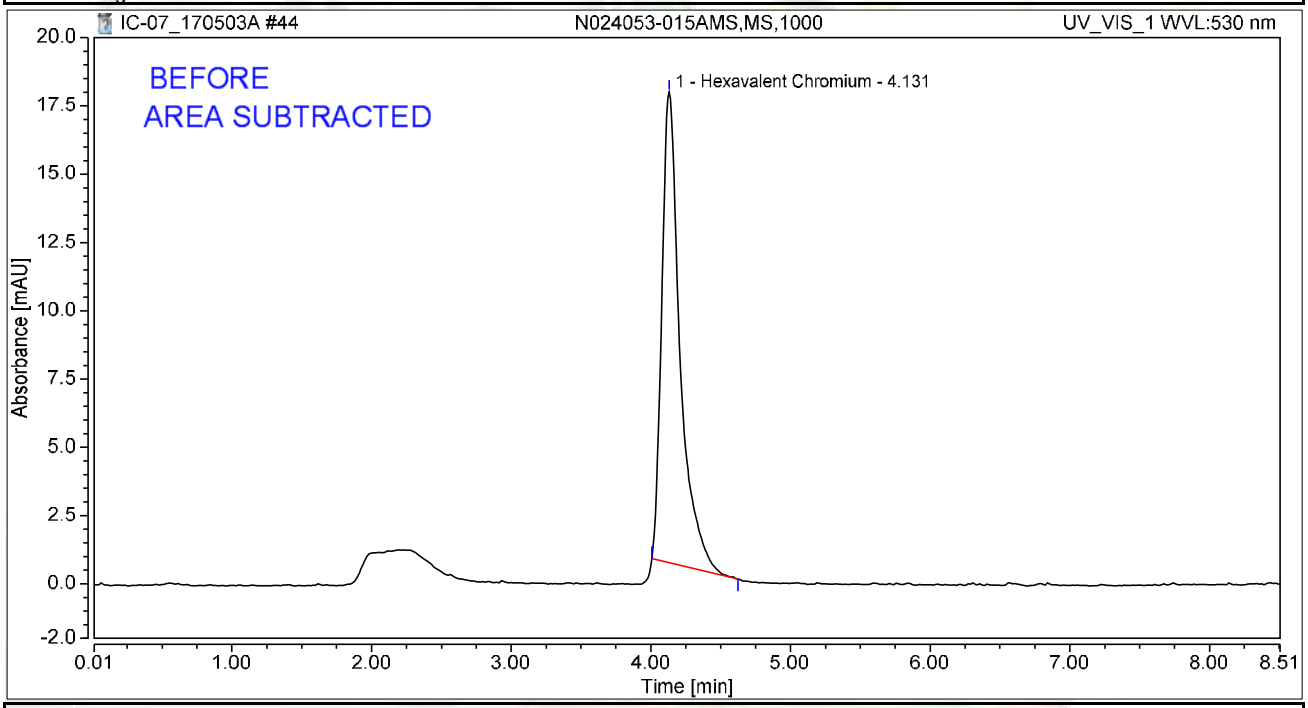
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024053-015AMS,MS,1000**	*Run Time (min):*	**8.49**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.613	17.231	100.00	100.00	10.7120
Total:			**2.613**	**17.231**	**100.00**	**100.00**	

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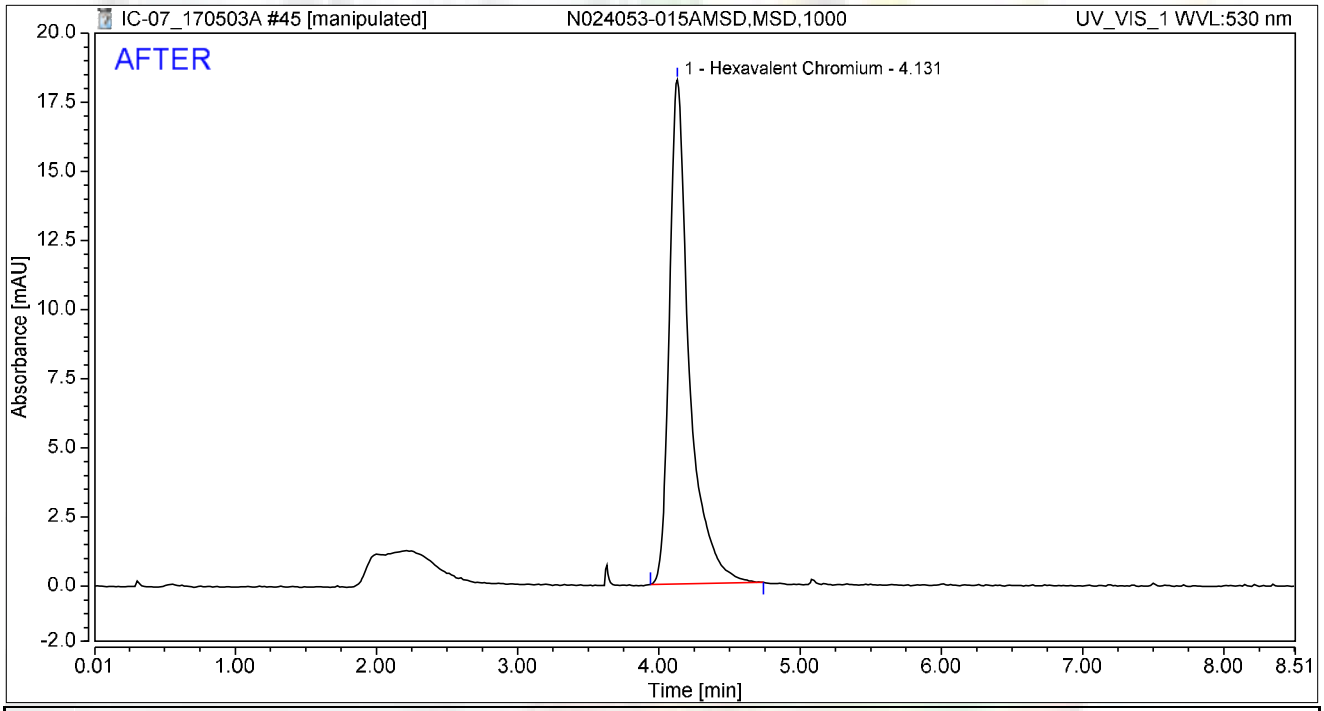
Chromatogram and Results

Injection Details

Injection Name:	**N024053-015AMSD,MSD,1000**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.986	18.242	100.00	100.00	12.2421
Total:			**2.986**	**18.242**	**100.00**	**100.00**	

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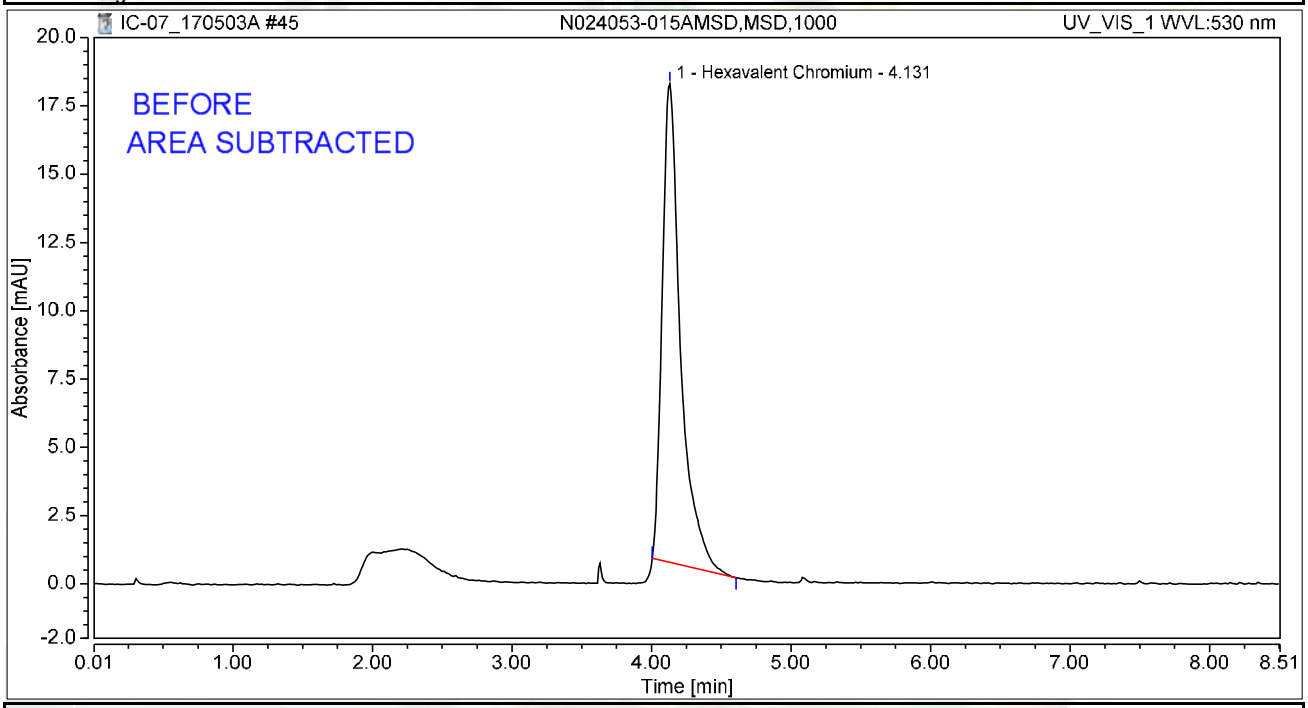
Chromatogram and Results

Injection Details

Injection Name:	**N024053-015AMSD,MSD,1000**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 14:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.667	17.520	100.00	100.00	10.9344
Total:			**2.667**	**17.520**	**100.00**	**100.00**	

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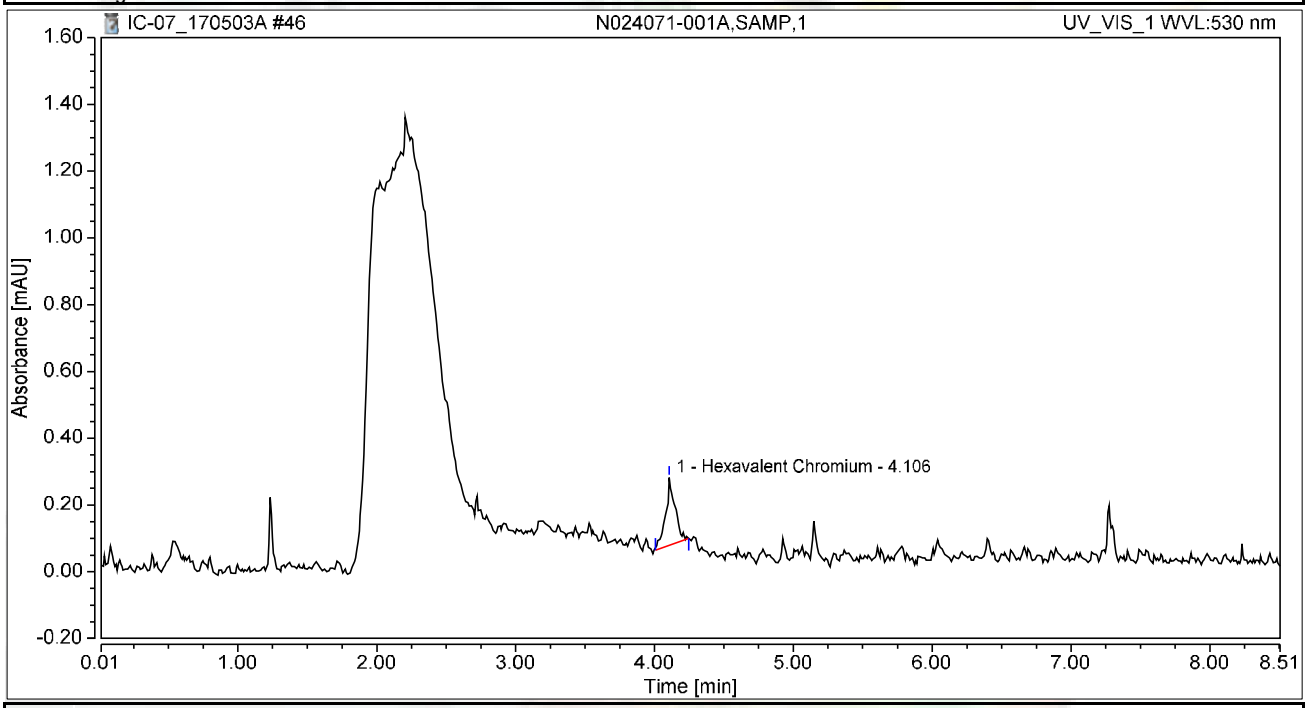
Chromatogram and Results

Injection Details

Injection Name:	**N024071-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

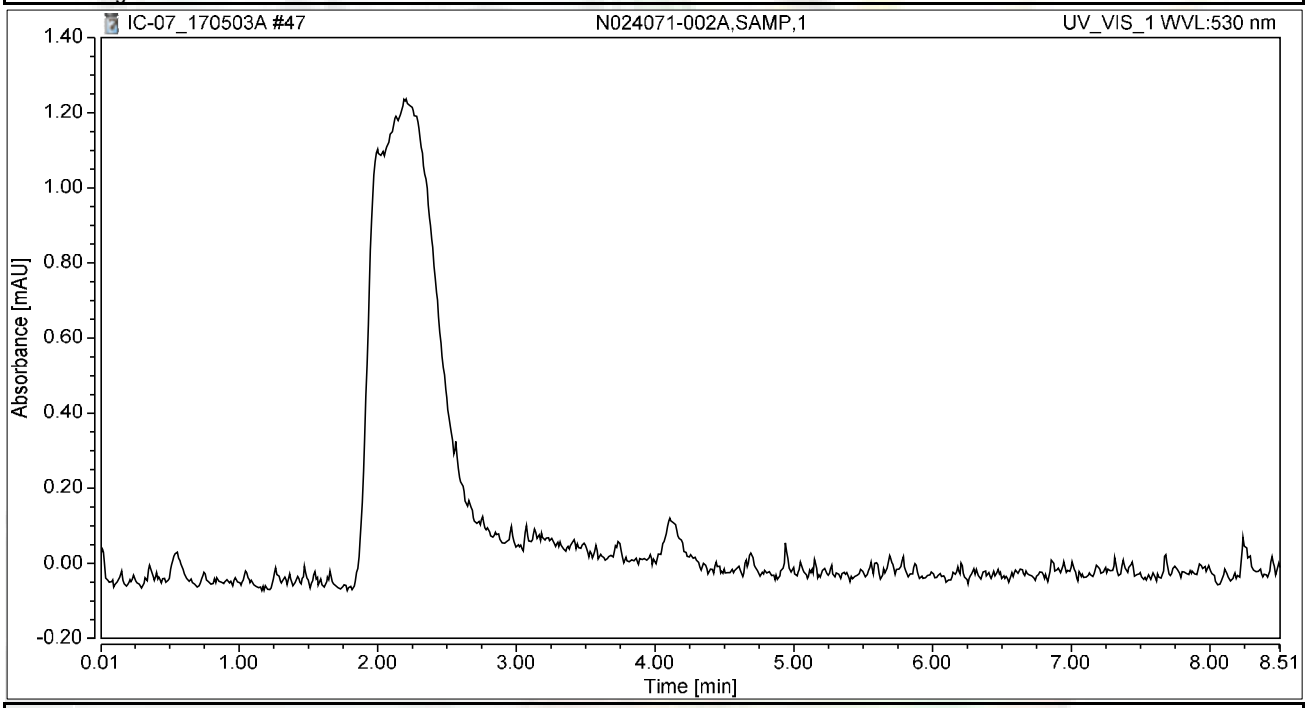
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.016	0.202	100.00	100.00	0.0650
Total:			**0.016**	**0.202**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024071-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

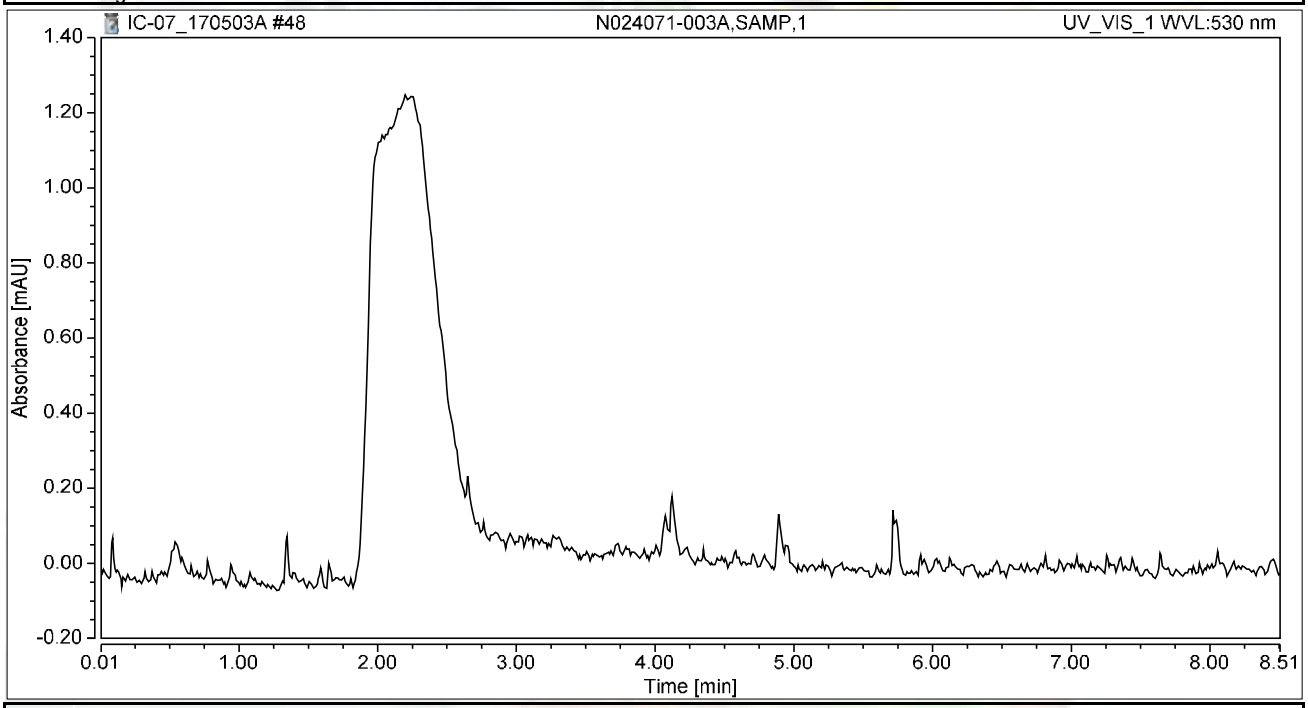
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024071-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

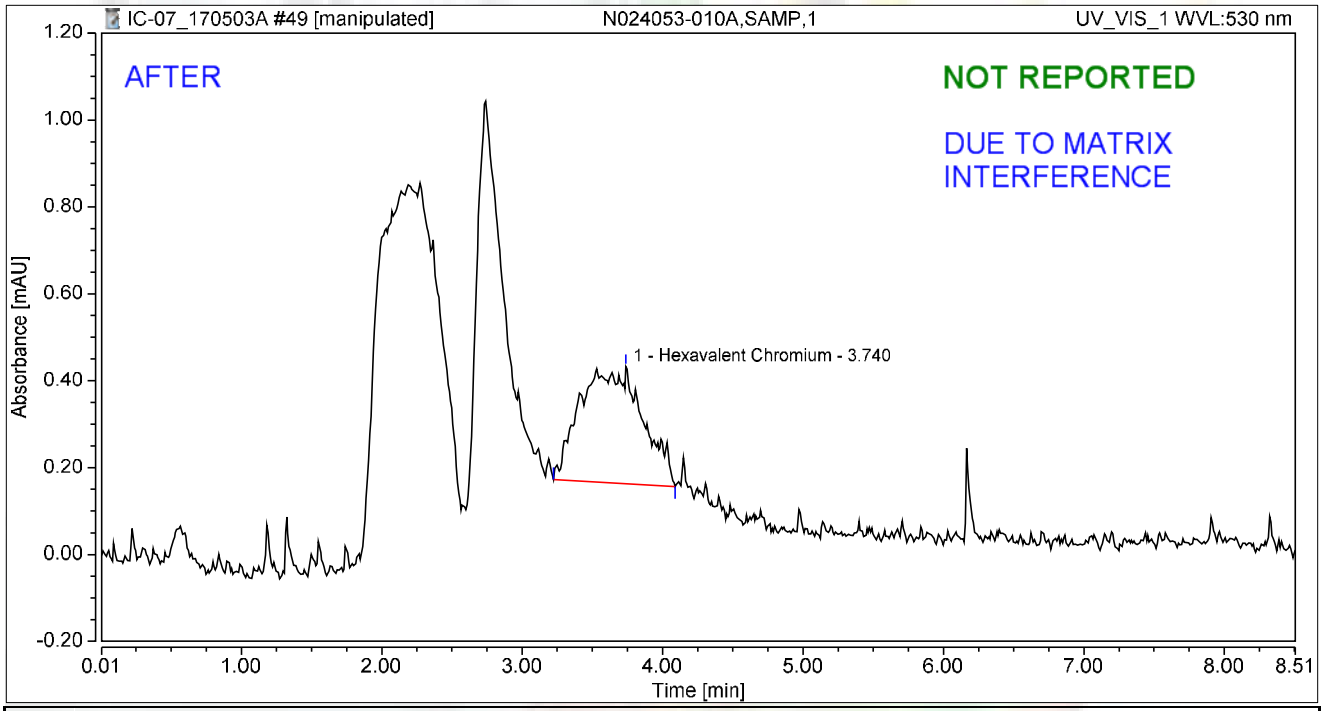
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.740	0.137	0.270	100.00	100.00	0.5602
Total:			**0.137**	**0.270**	**100.00**	**100.00**	

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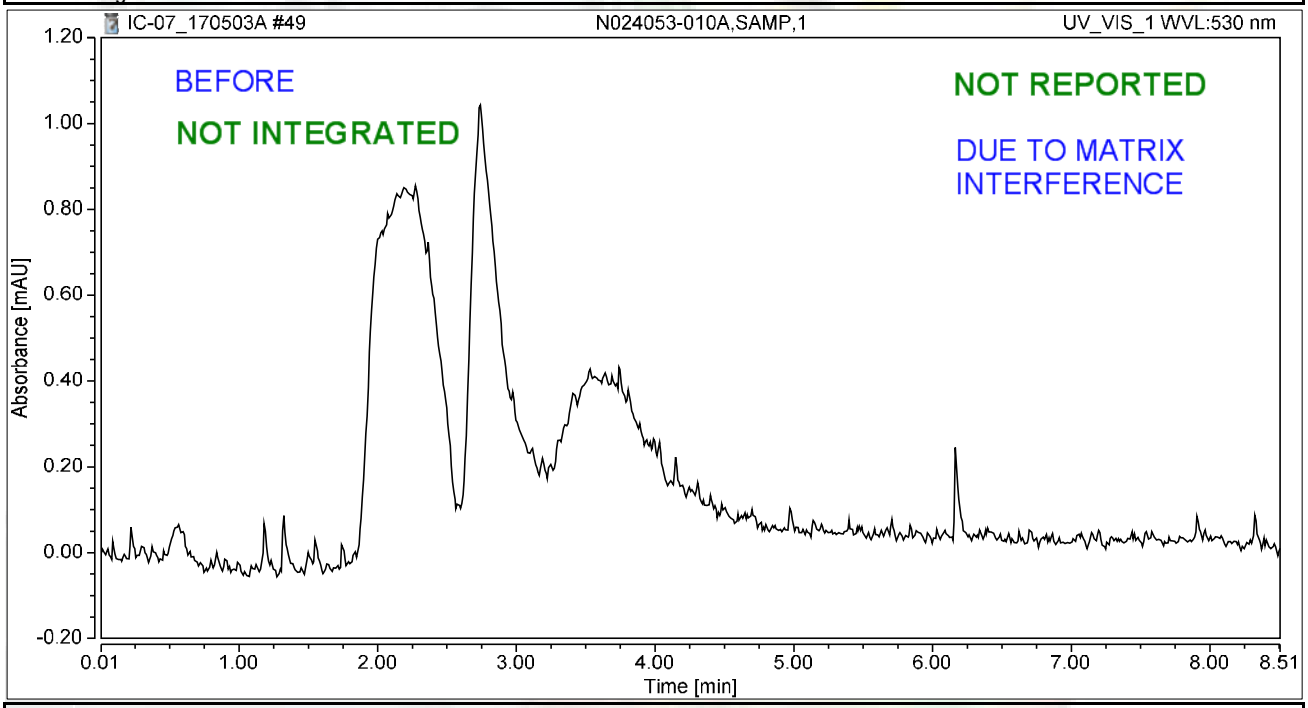
Chromatogram and Results

Injection Details

Injection Name:	**N024053-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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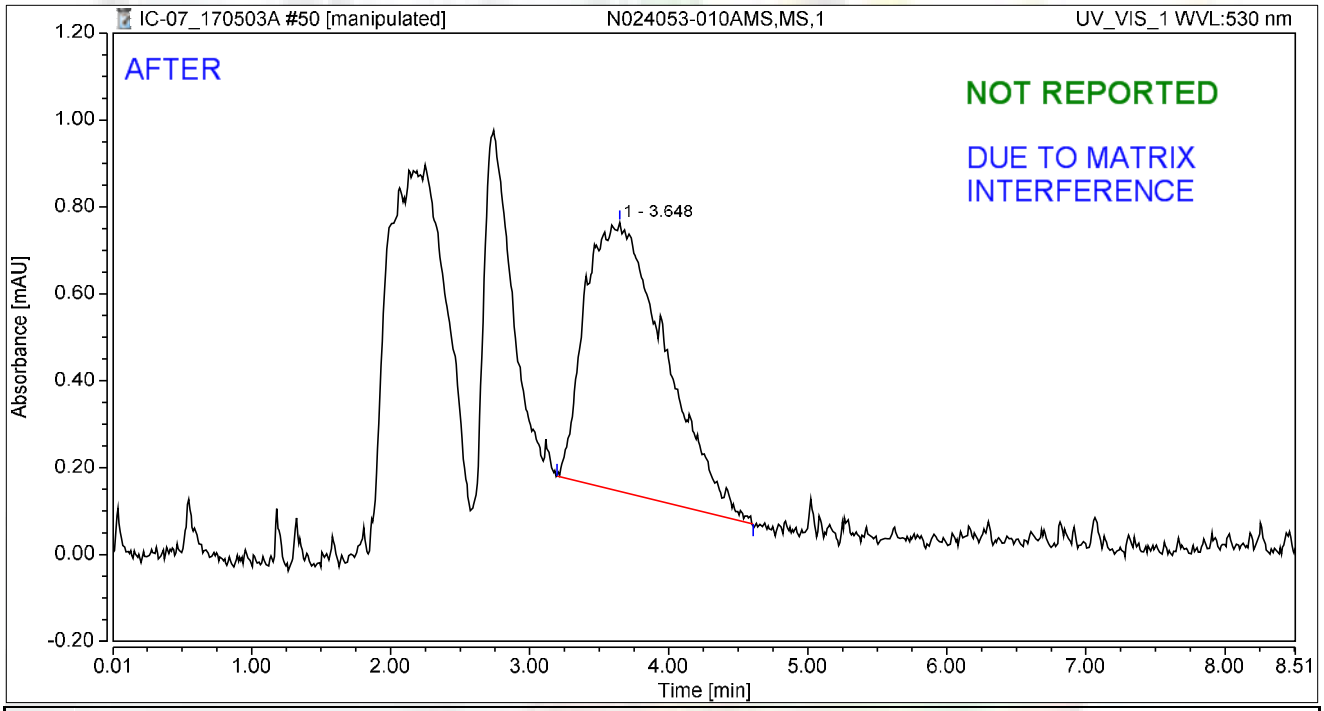
Chromatogram and Results

Injection Details

Injection Name:	**N024053-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.648	0.415	0.619	100.00	100.00	n.a.
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.415**	**0.619**	**100.00**	**100.00**	

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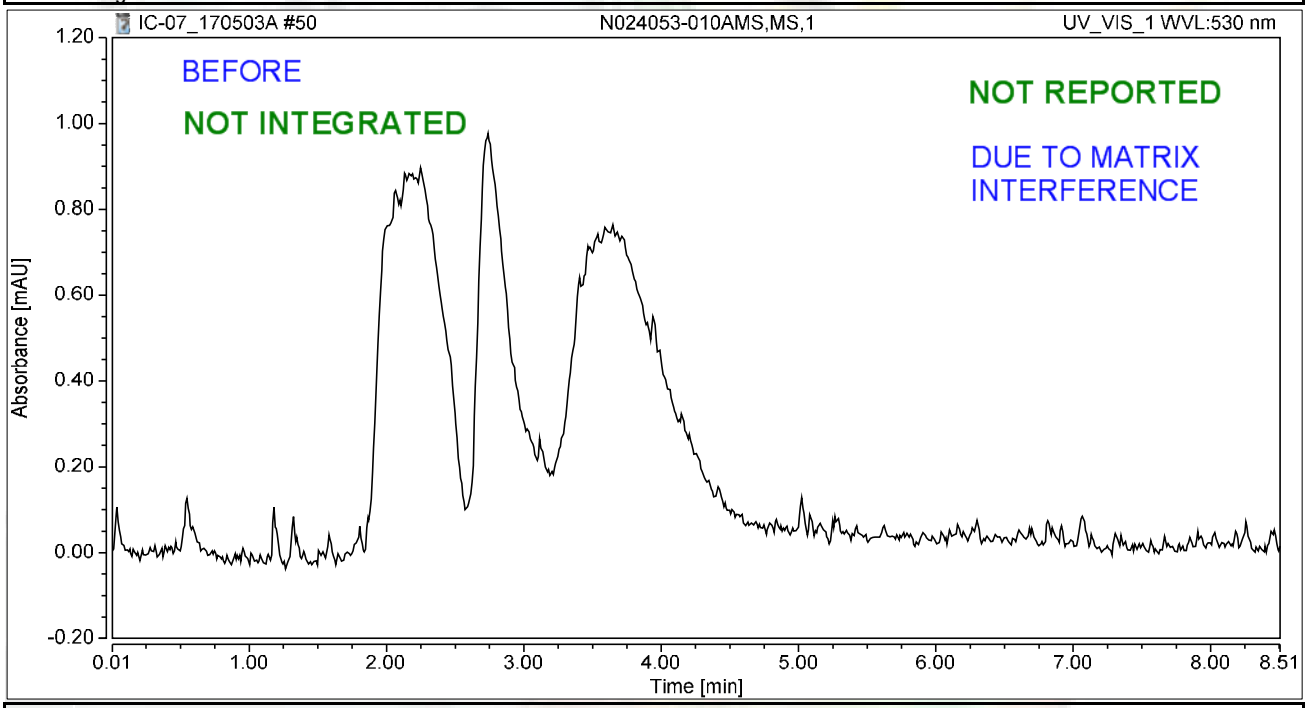
Chromatogram and Results

Injection Details

Injection Name:	**N024053-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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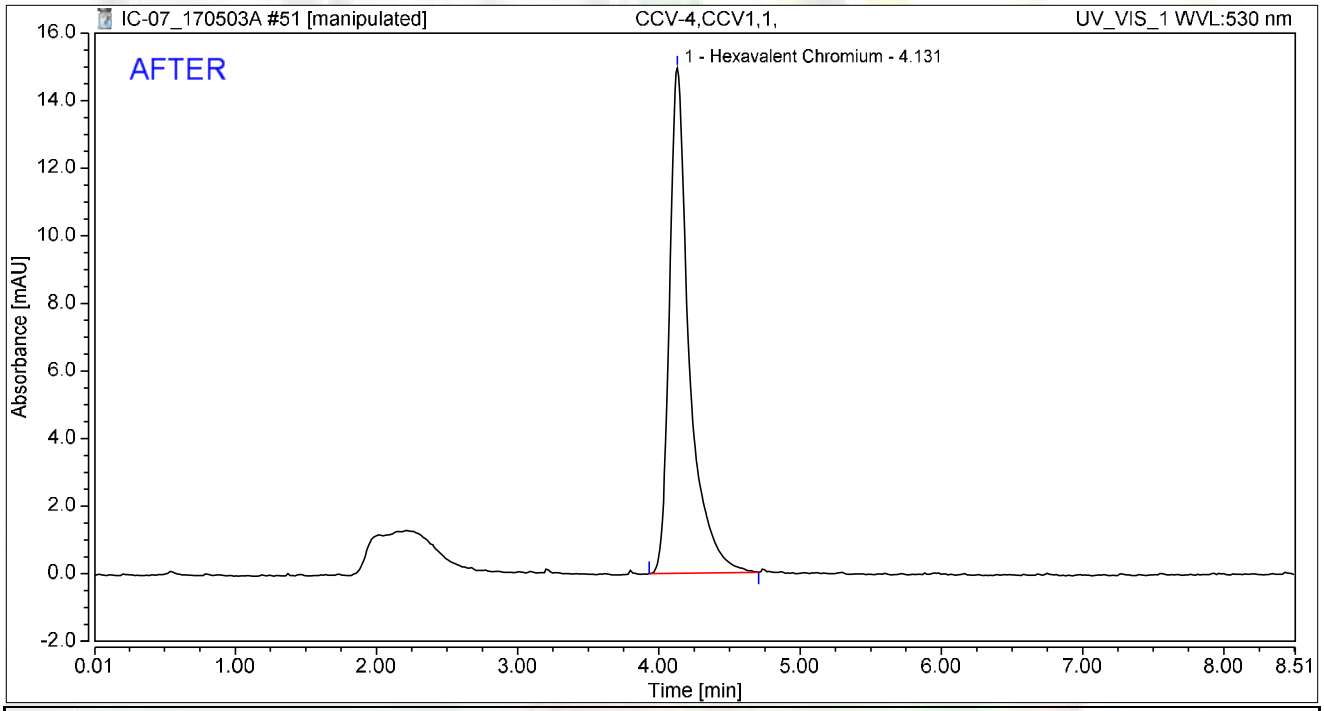
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.433	14.953	100.00	100.00	9.9772
Total:			**2.433**	**14.953**	**100.00**	**100.00**	

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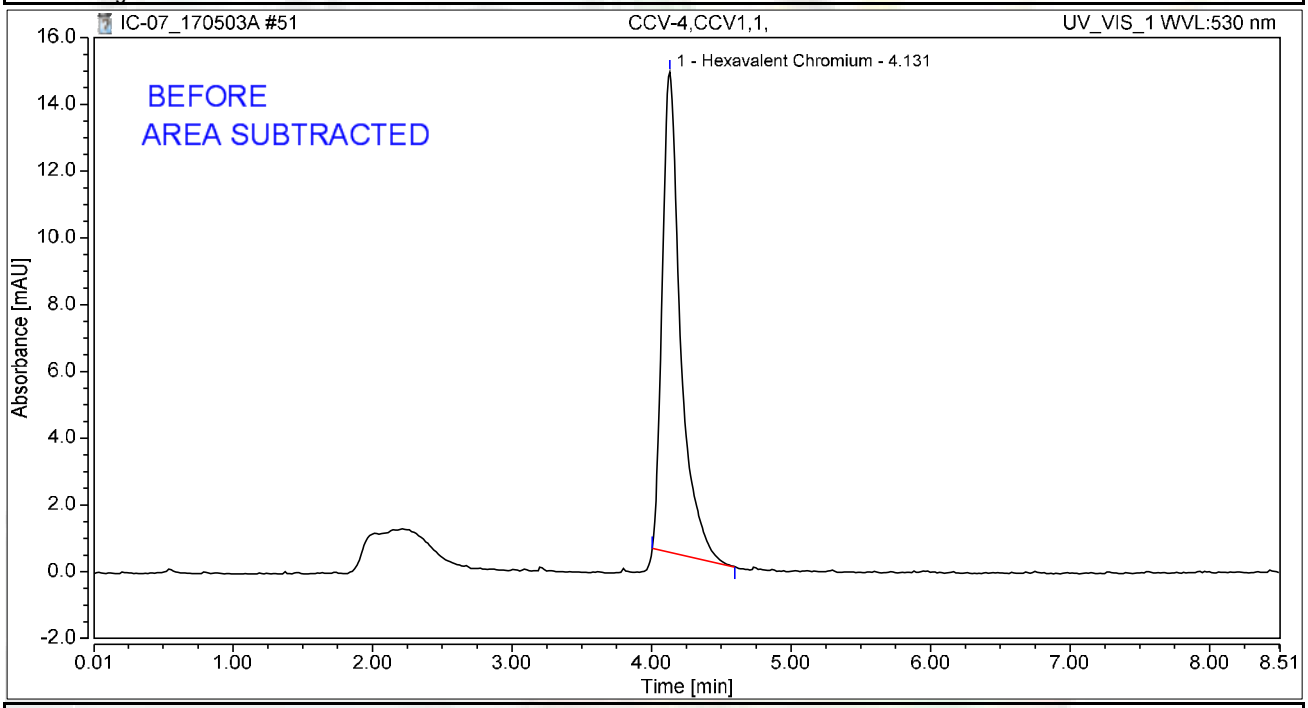
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.181	14.382	100.00	100.00	8.9443
Total:			**2.181**	**14.382**	**100.00**	**100.00**	

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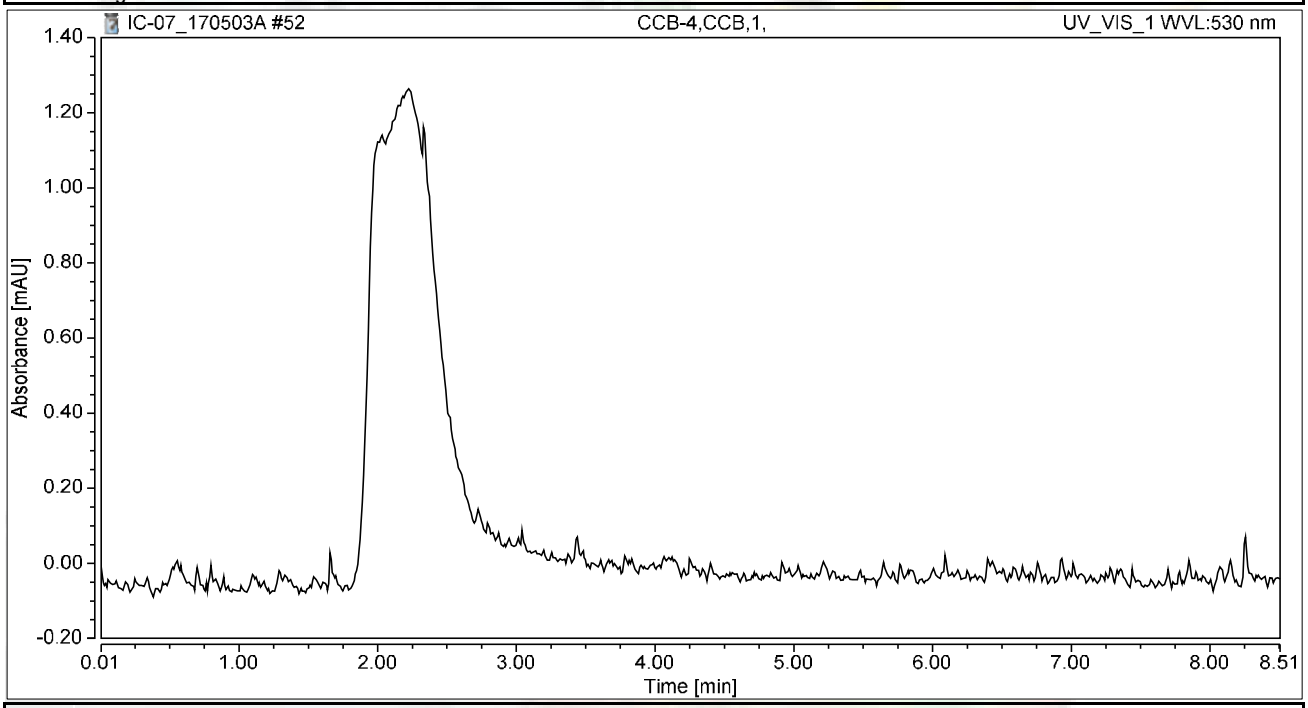
Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 15:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

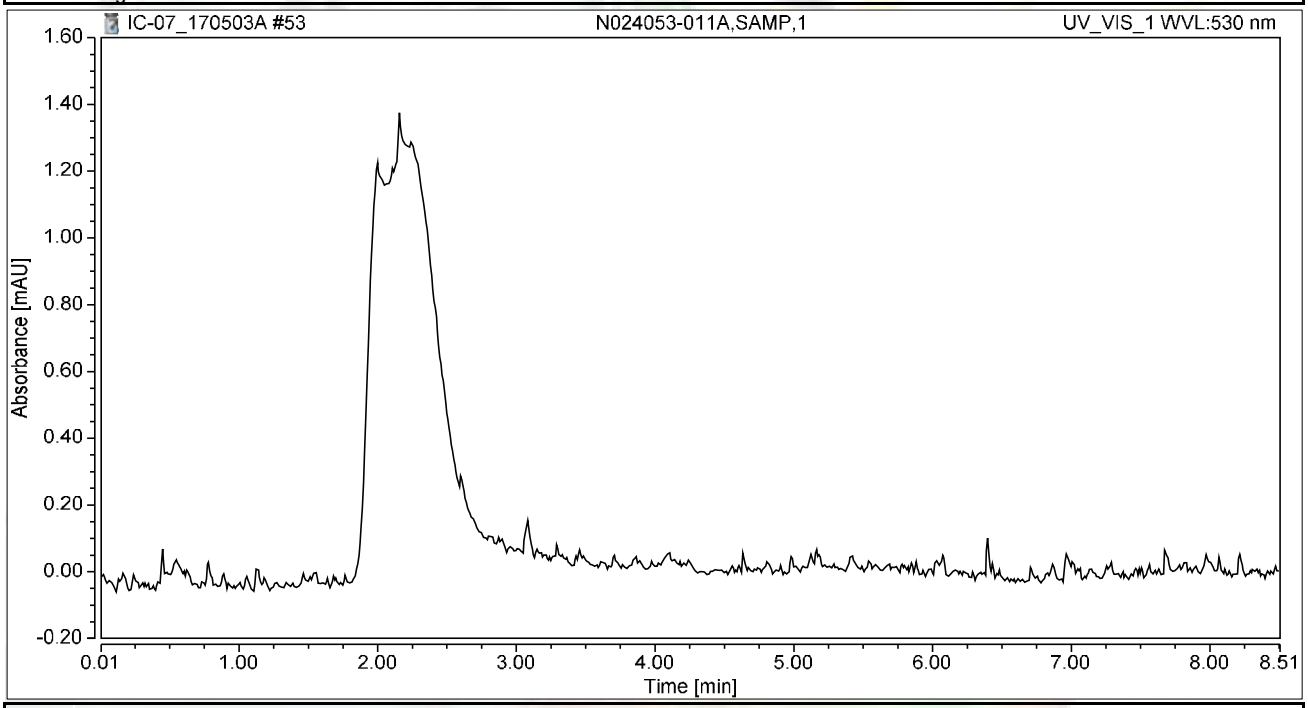
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

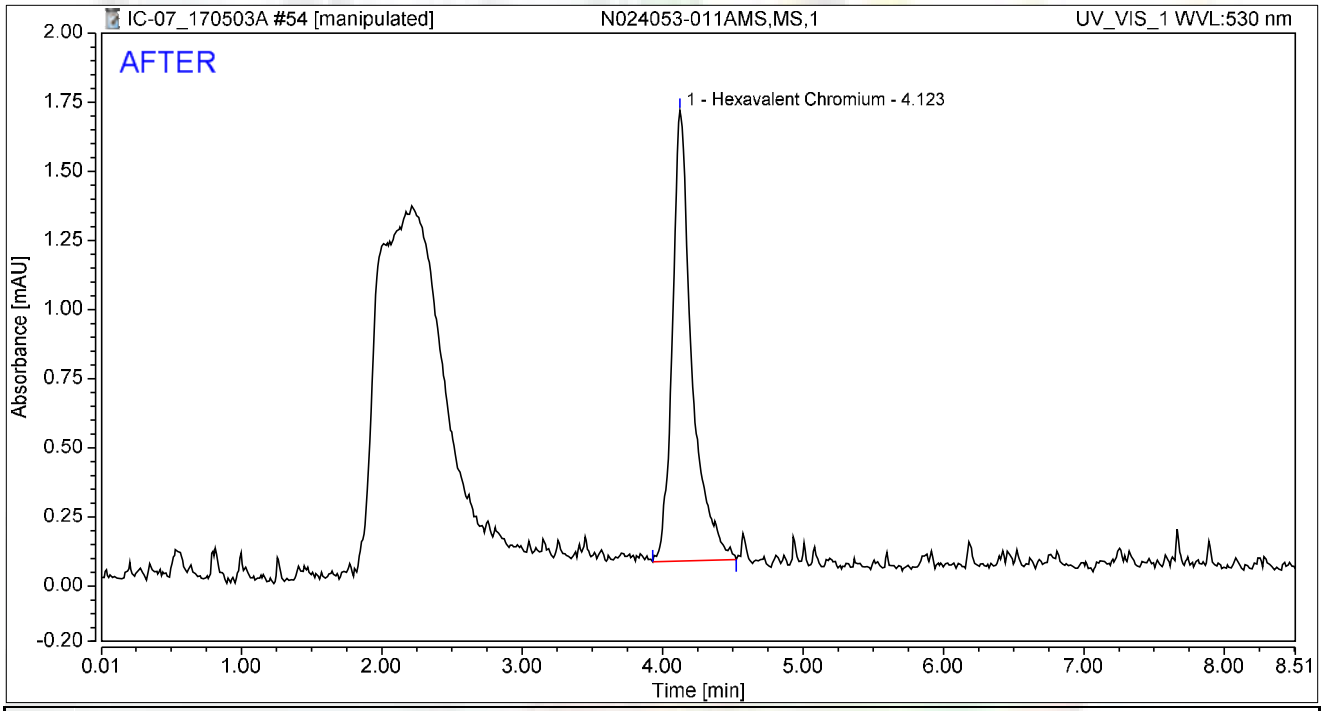
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.263	1.629	100.00	100.00	1.0769
Total:			**0.263**	**1.629**	**100.00**	**100.00**	

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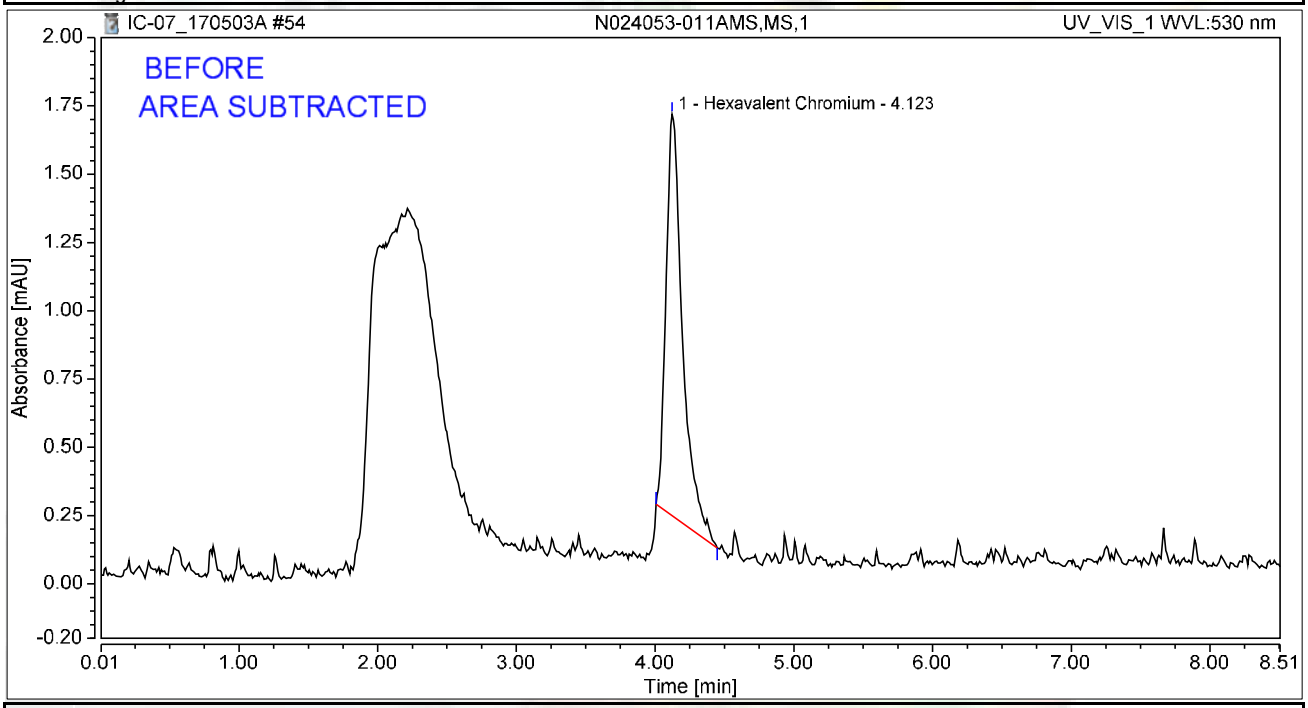
Chromatogram and Results

Injection Details

Injection Name:	**N024053-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.203	1.470	100.00	100.00	0.8340
Total:			**0.203**	**1.470**	**100.00**	**100.00**	

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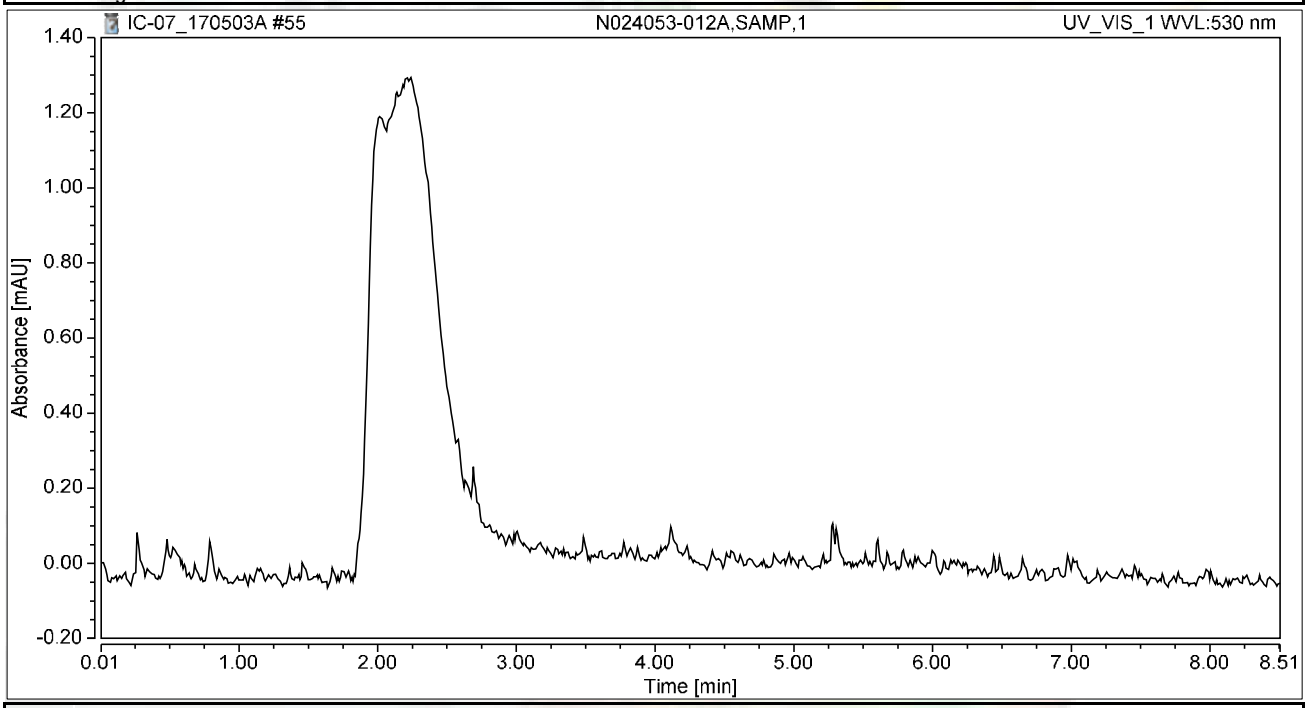
Chromatogram and Results

Injection Details

Injection Name:	**N024053-012A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

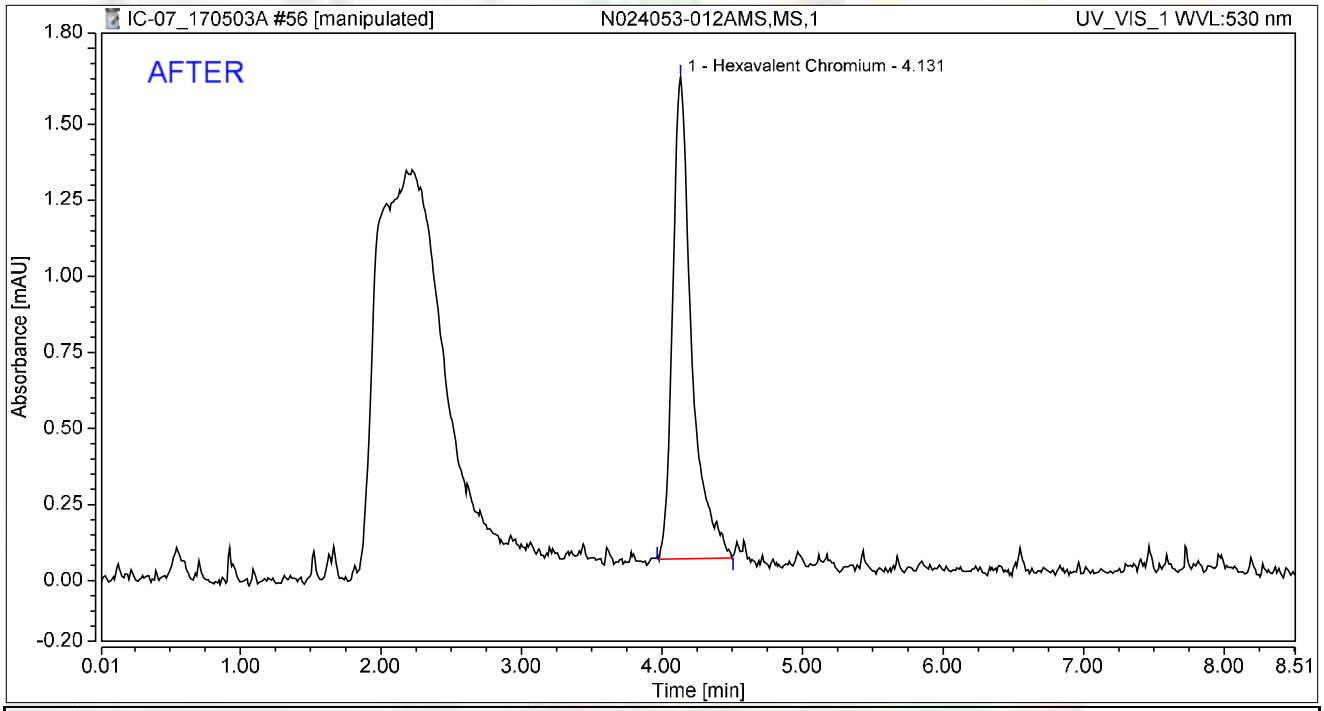
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-012AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.248	1.584	100.00	100.00	1.0159
Total:			**0.248**	**1.584**	**100.00**	**100.00**	

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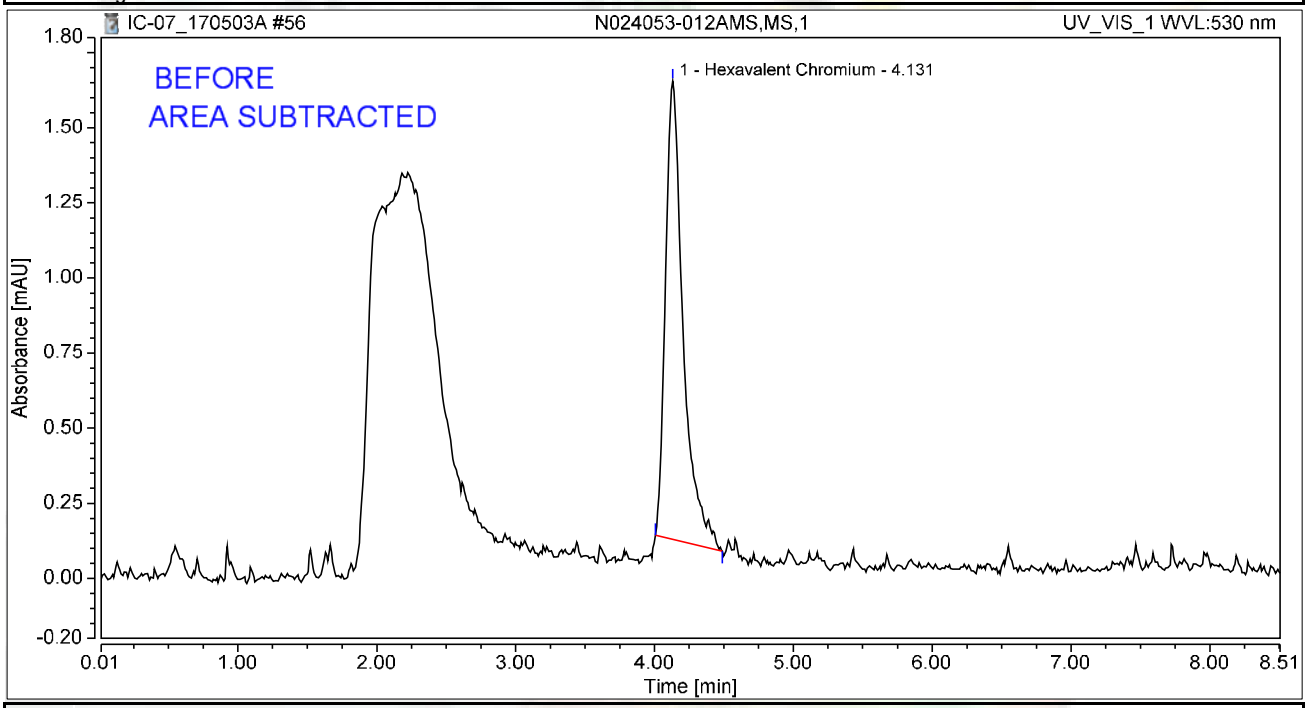
Chromatogram and Results

Injection Details

Injection Name:	**N024053-012AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.225	1.526	100.00	100.00	0.9227
Total:			**0.225**	**1.526**	**100.00**	**100.00**	

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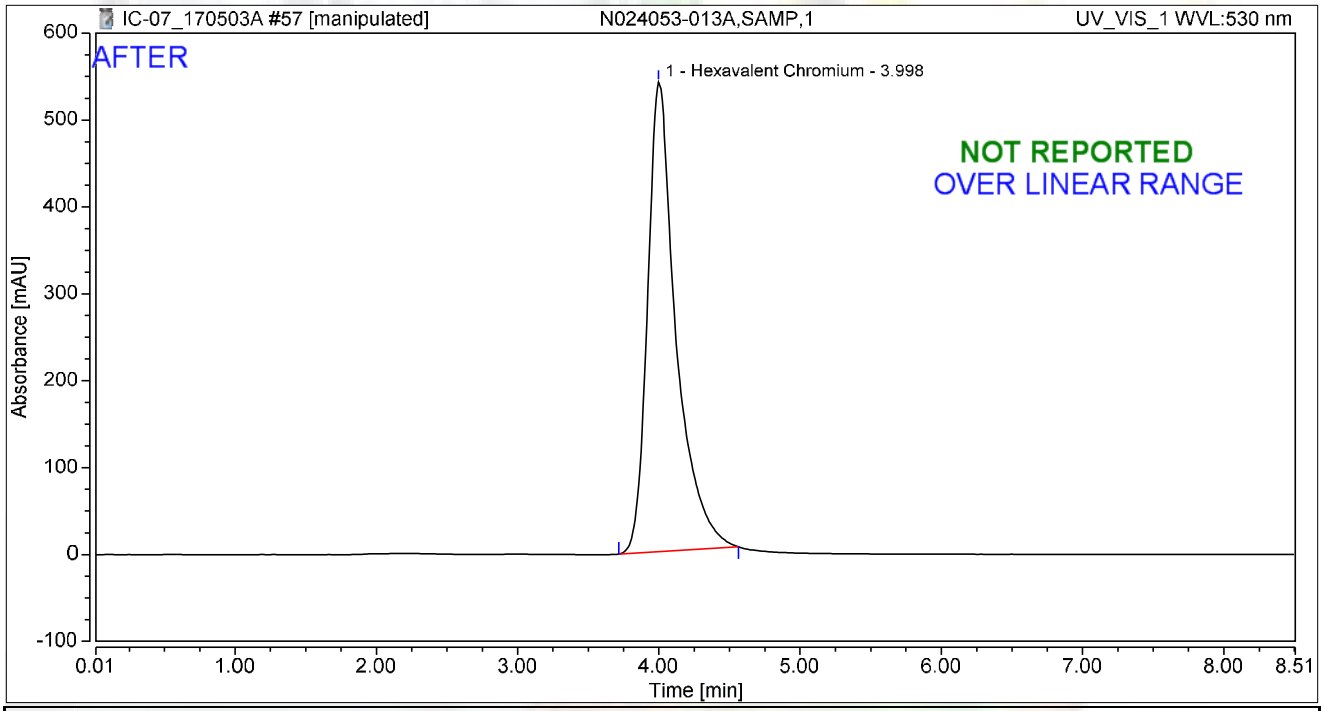
Chromatogram and Results

Injection Details

Injection Name:	**N024053-013A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	126.054	540.195	100.00	100.00	516.8524
Total:			**126.054**	**540.195**	**100.00**	**100.00**	

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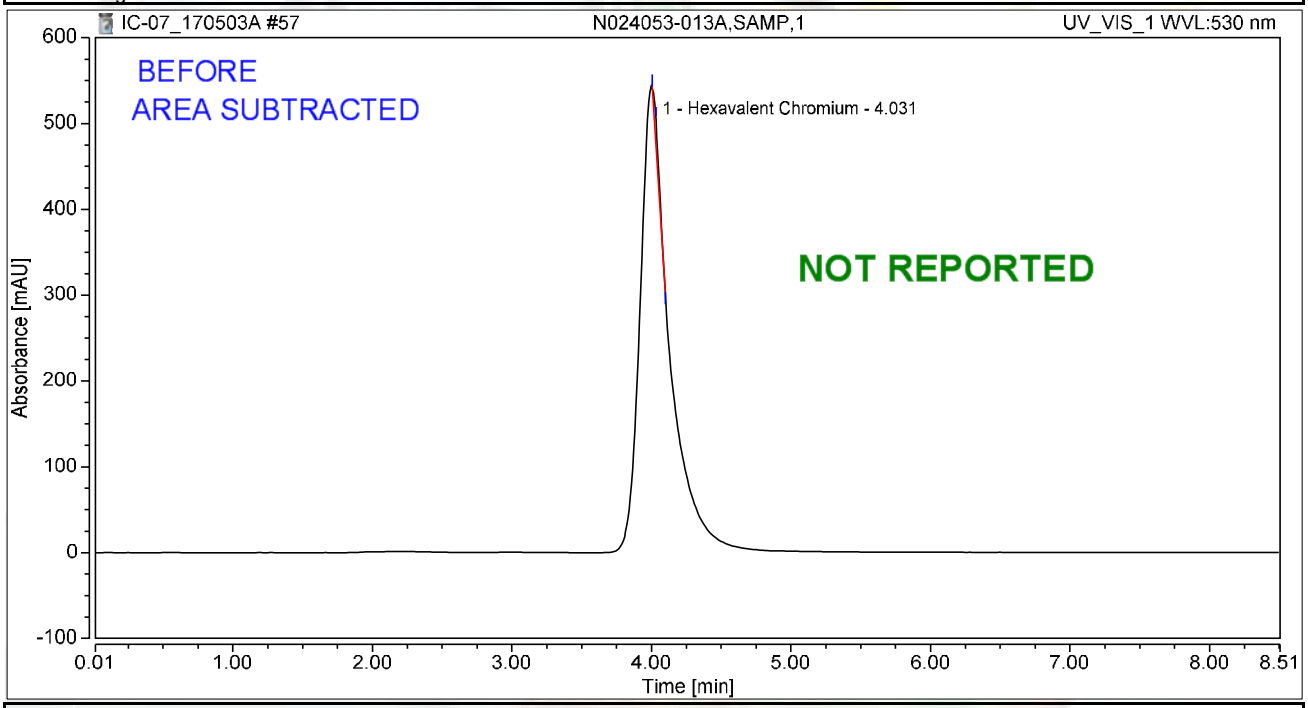
Chromatogram and Results

Injection Details

Injection Name:	**N024053-013A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**47**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	1.383	27.440	100.00	100.00	5.6686
Total:			**1.383**	**27.440**	**100.00**	**100.00**	

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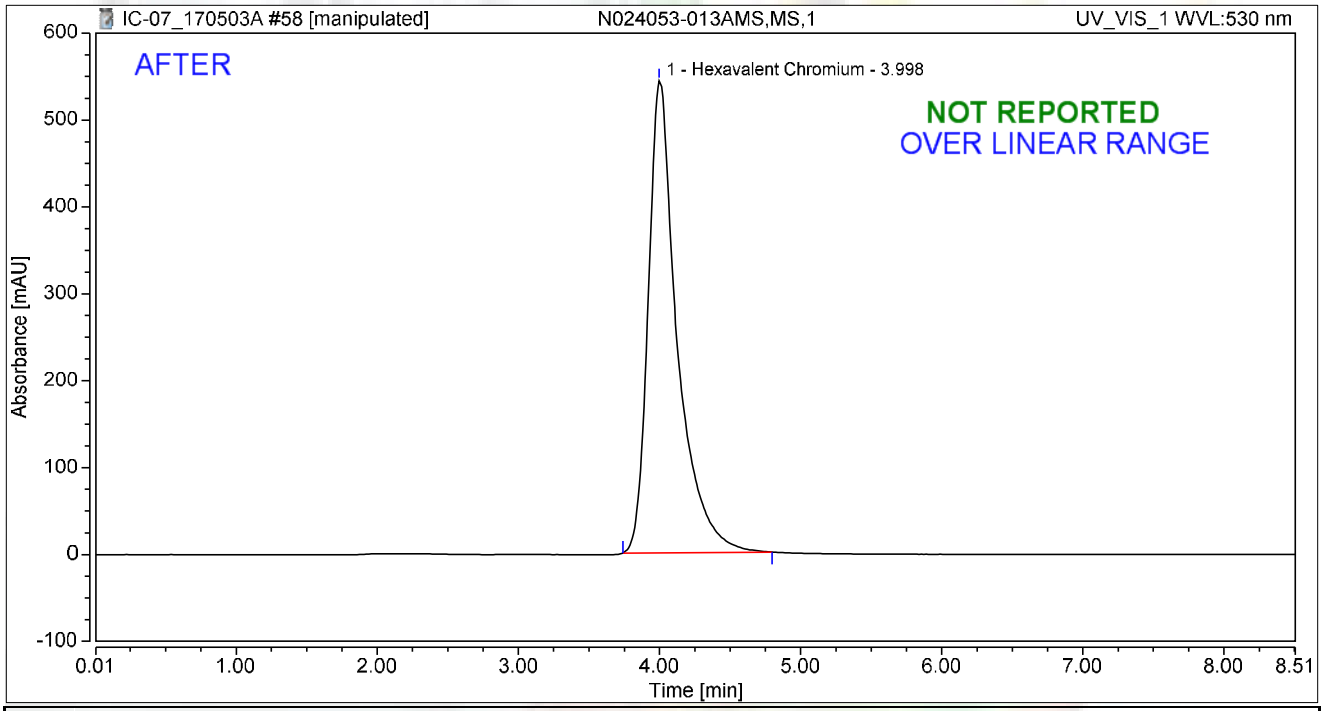
Chromatogram and Results

Injection Details

Injection Name:	**N024053-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

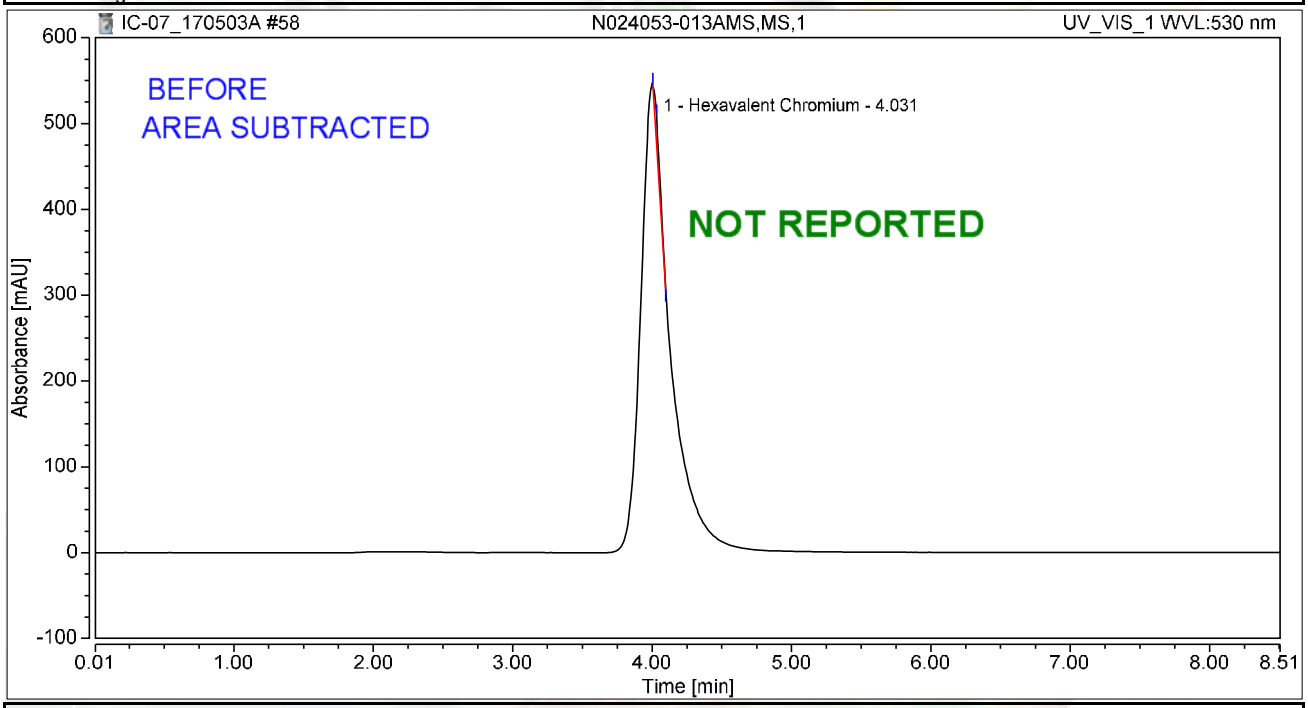
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.998	129.234	543.497	100.00	100.00	529.8916
Total:			**129.234**	**543.497**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**48**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

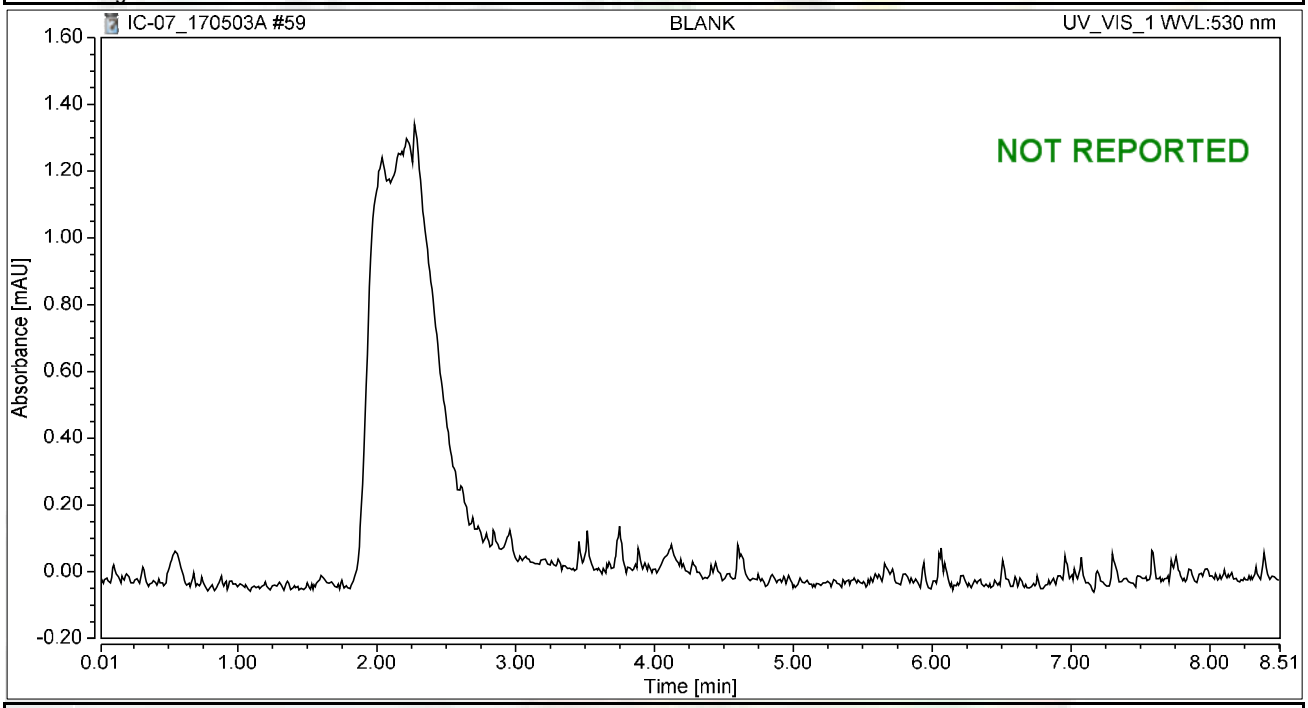
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	1.432	28.085	100.00	100.00	5.8703
Total:			**1.432**	**28.085**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**49**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

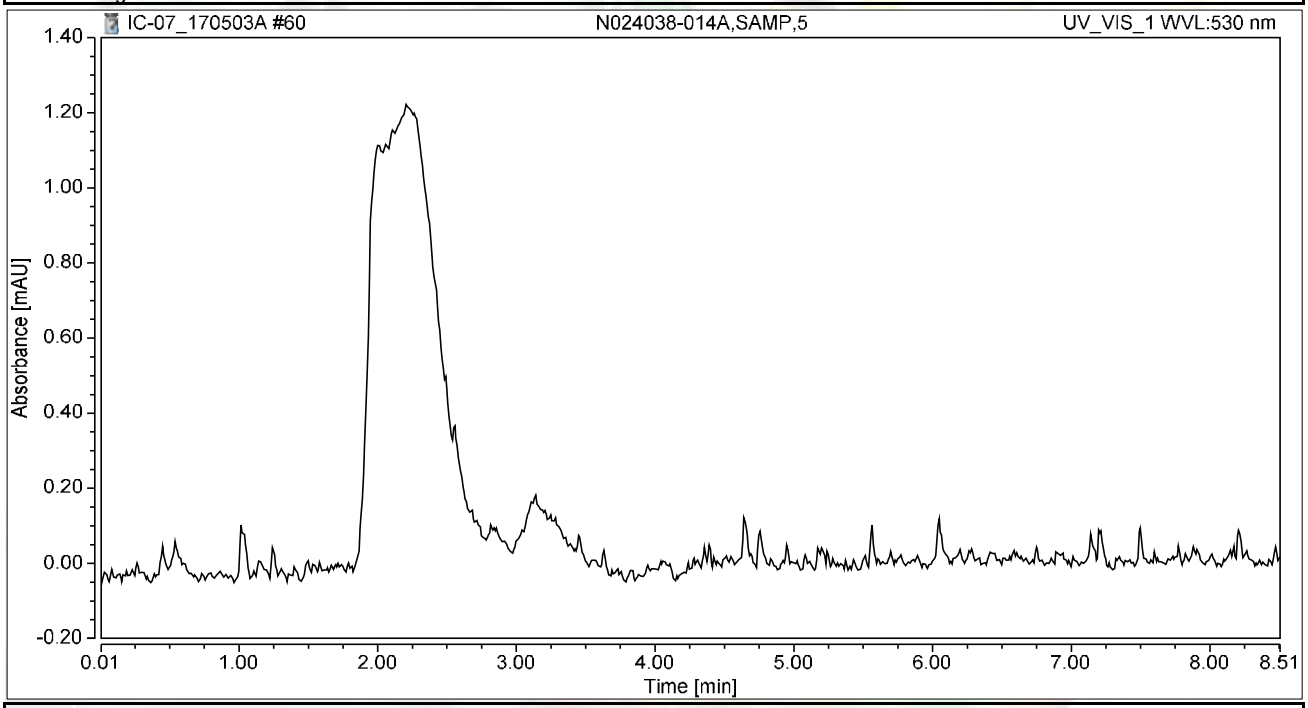
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024038-014A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

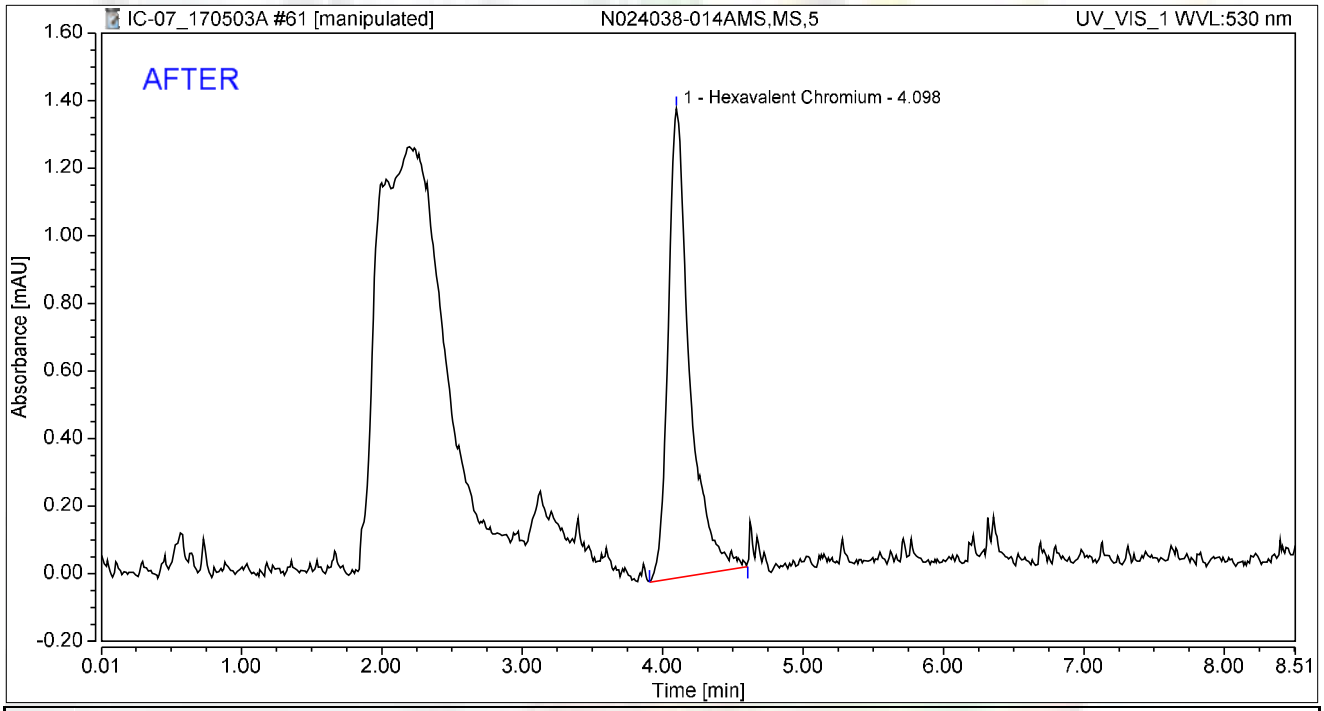
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024038-014AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.246	1.389	100.00	100.00	1.0089
Total:			**0.246**	**1.389**	**100.00**	**100.00**	

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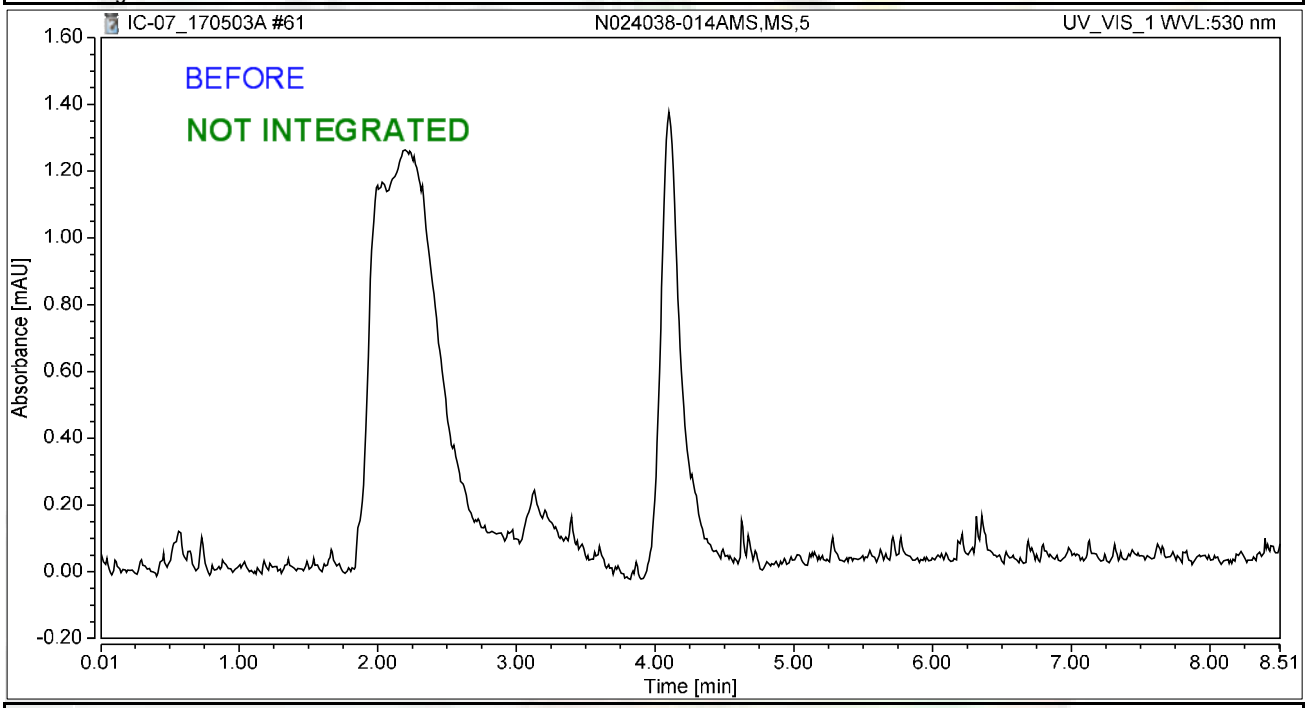
Chromatogram and Results

Injection Details

Injection Name:	**N024038-014AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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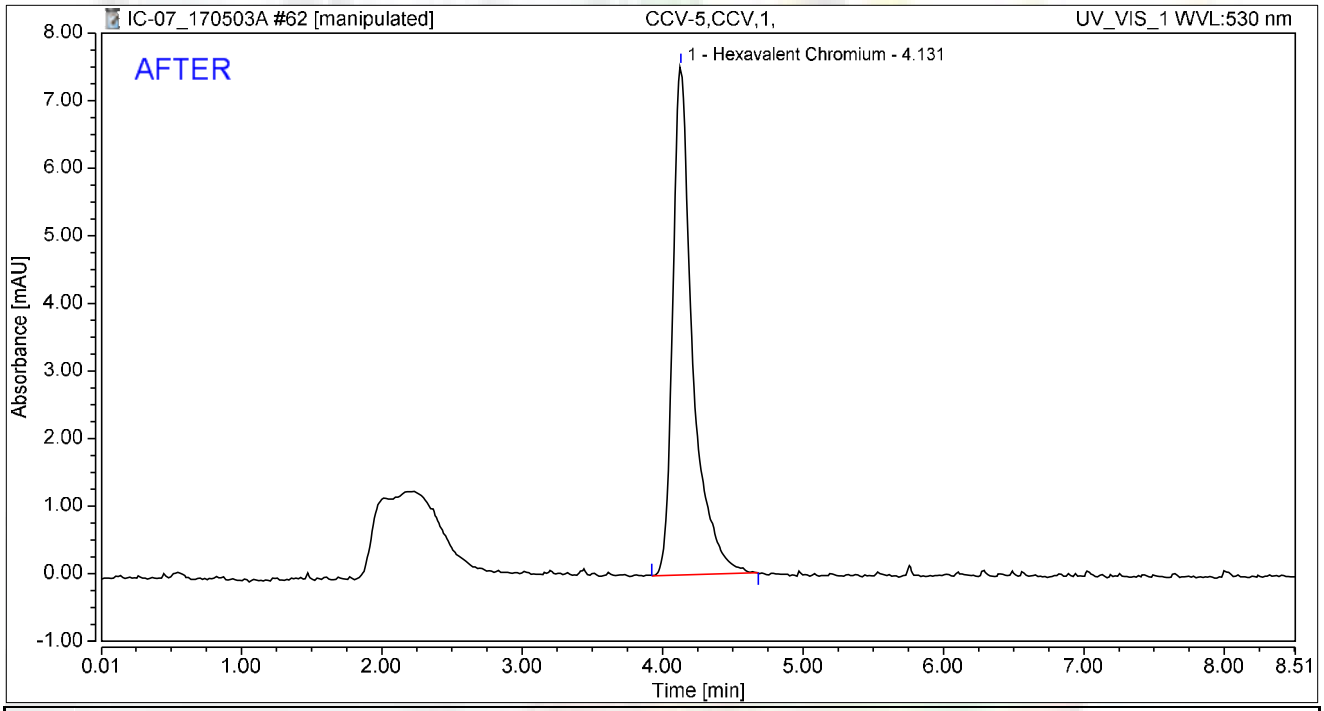
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.232	7.534	100.00	100.00	5.0496
Total:			**1.232**	**7.534**	**100.00**	**100.00**	

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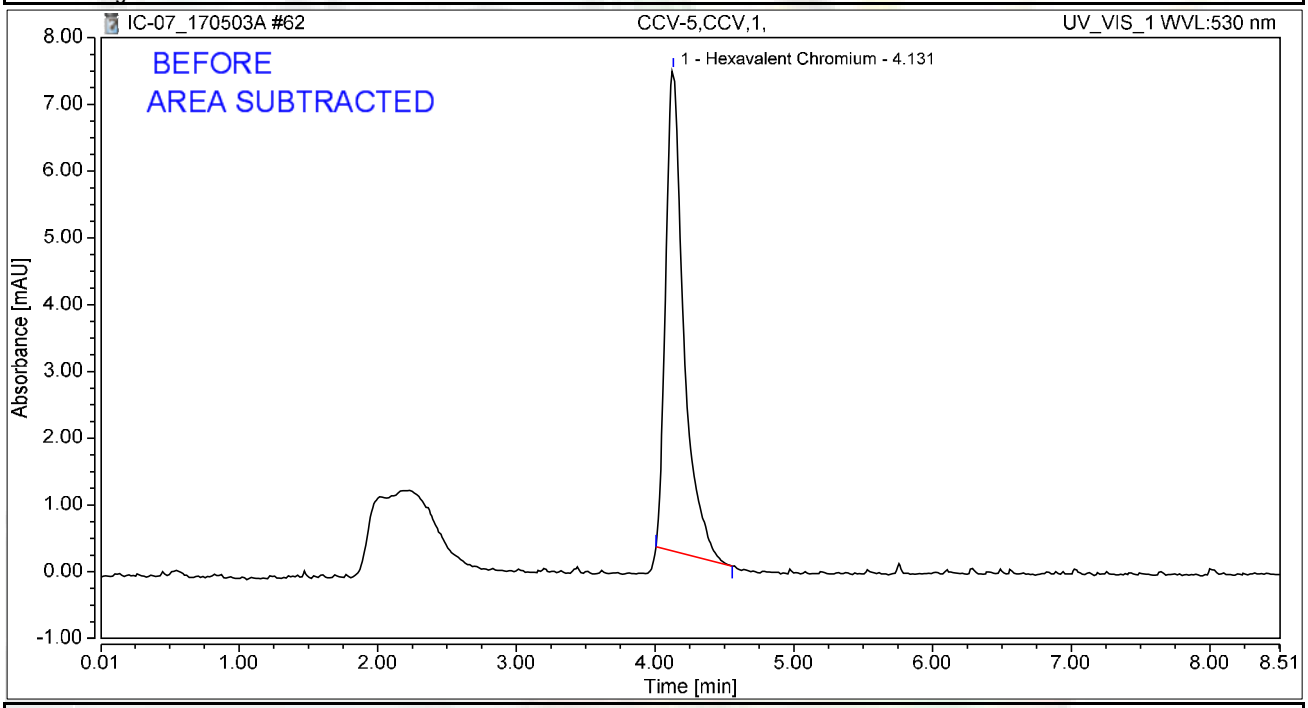
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.091	7.210	100.00	100.00	4.4739
Total:			**1.091**	**7.210**	**100.00**	**100.00**	

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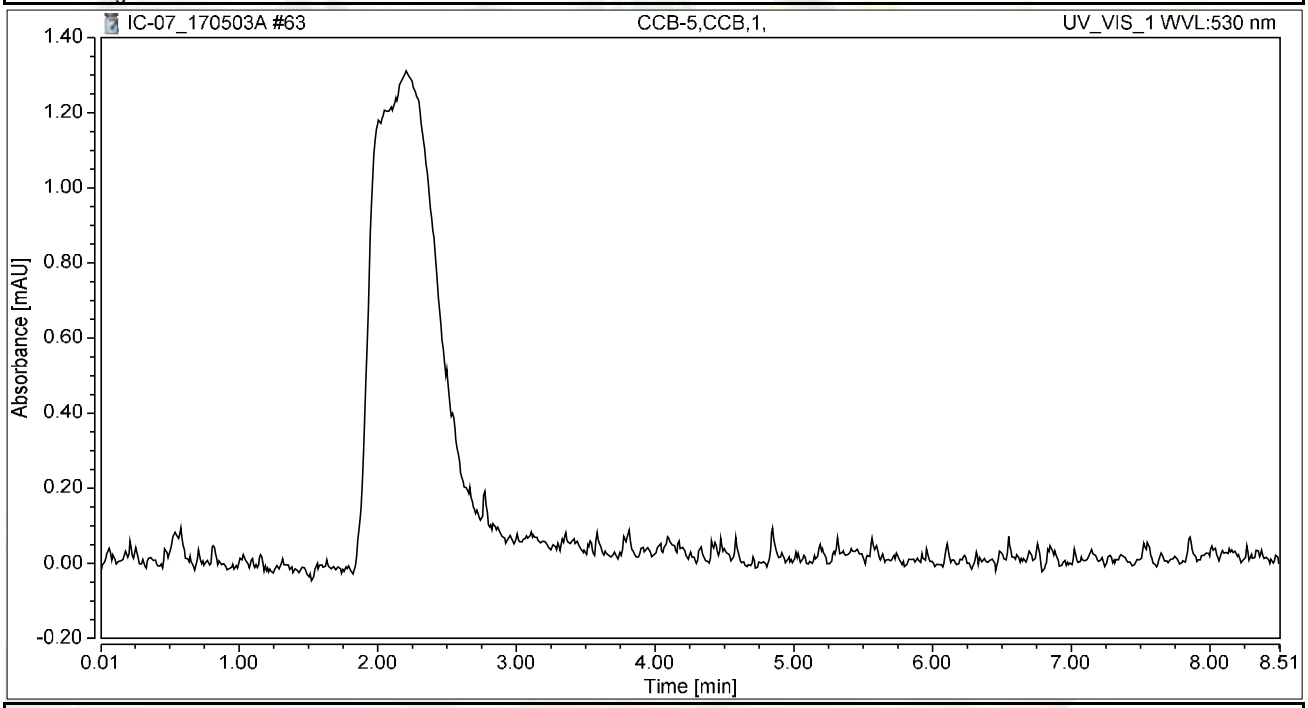
Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

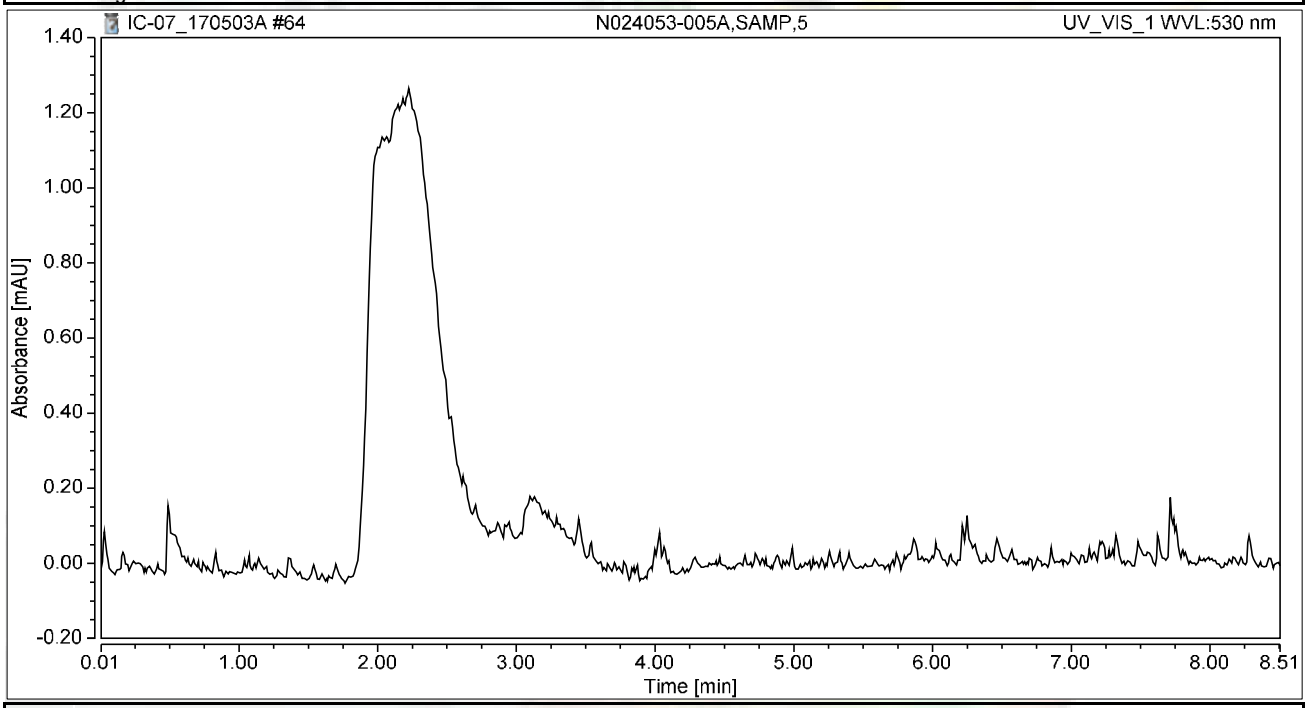
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-005A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

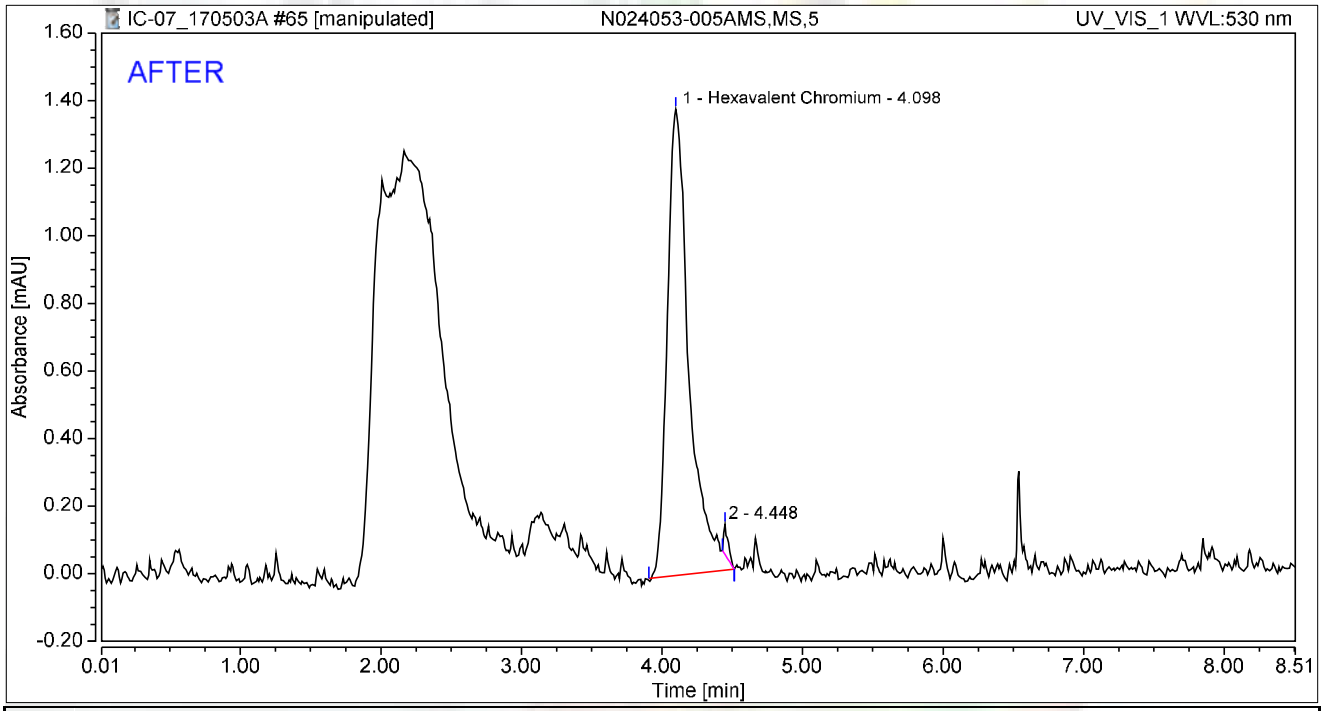
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-005AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.246	1.381	98.66	93.94	1.0102
2		4.448	0.003	0.089	1.34	6.06	n.a.
Total:			**0.250**	**1.470**	**100.00**	**100.00**	

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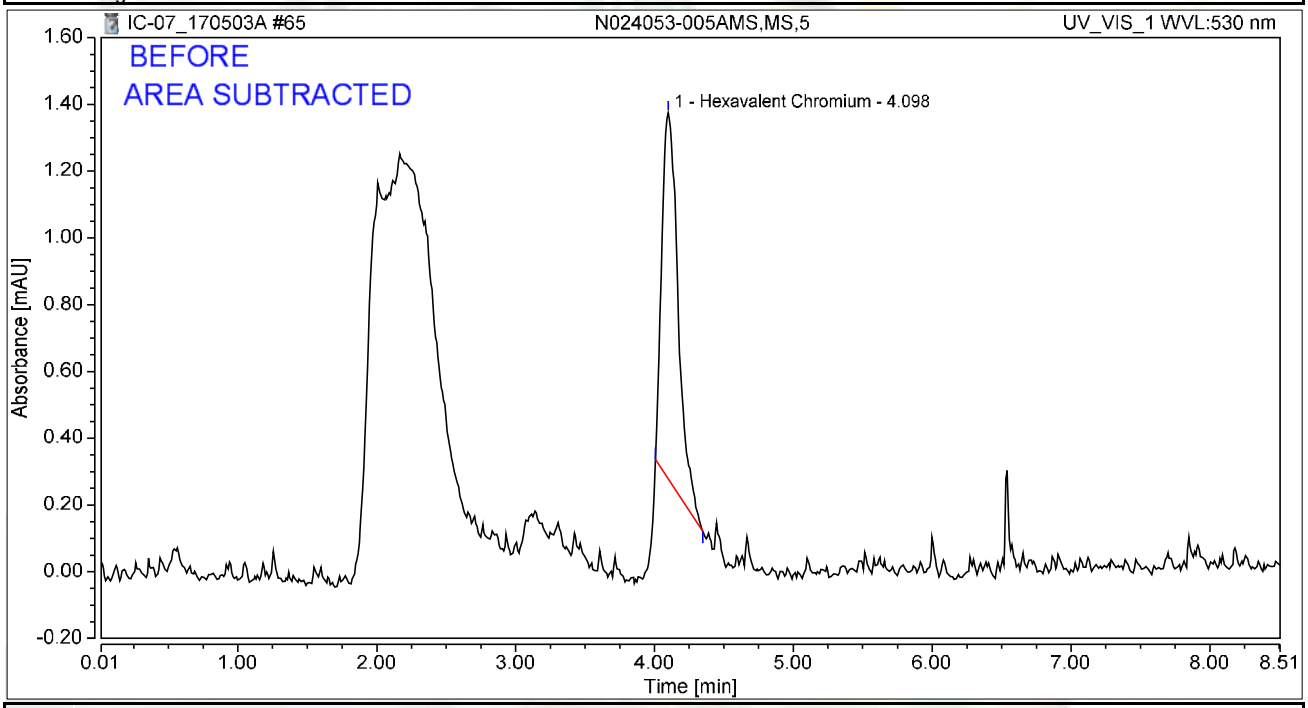
Chromatogram and Results

Injection Details

Injection Name:	**N024053-005AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.150	1.097	100.00	100.00	0.6154
Total:			**0.150**	**1.097**	**100.00**	**100.00**	

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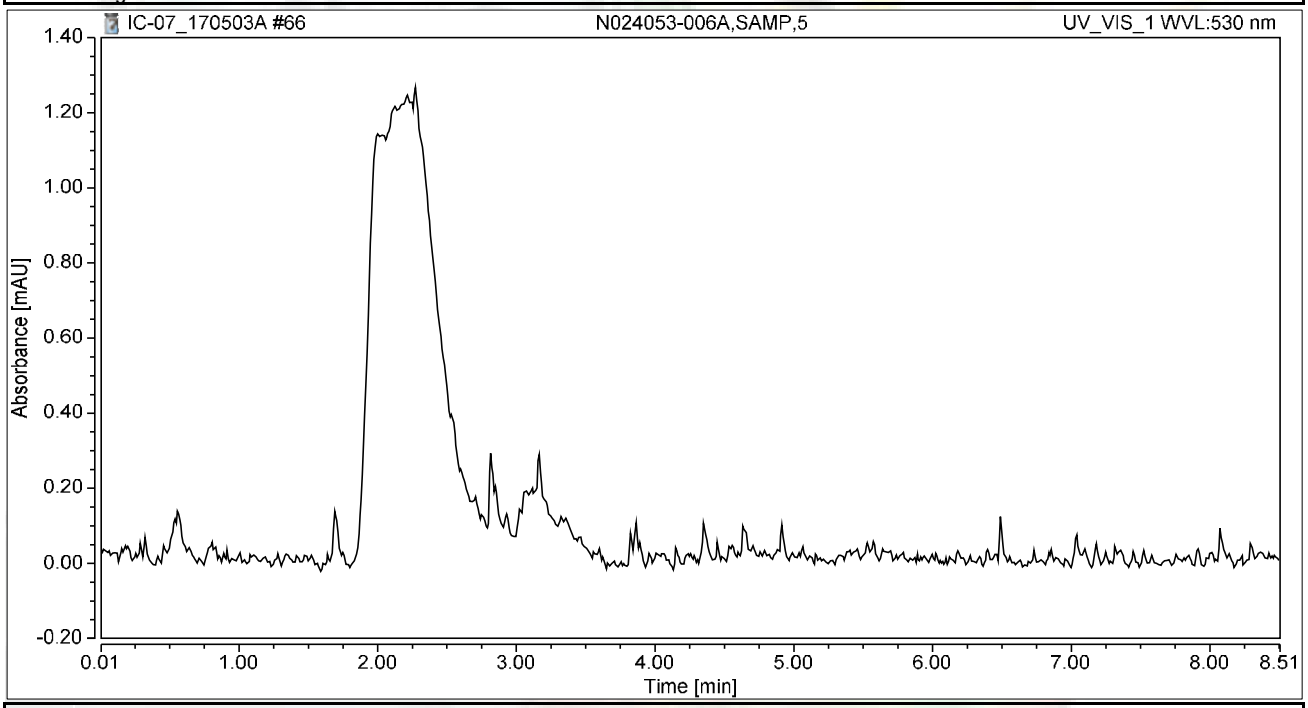
Chromatogram and Results

Injection Details

Injection Name:	**N024053-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

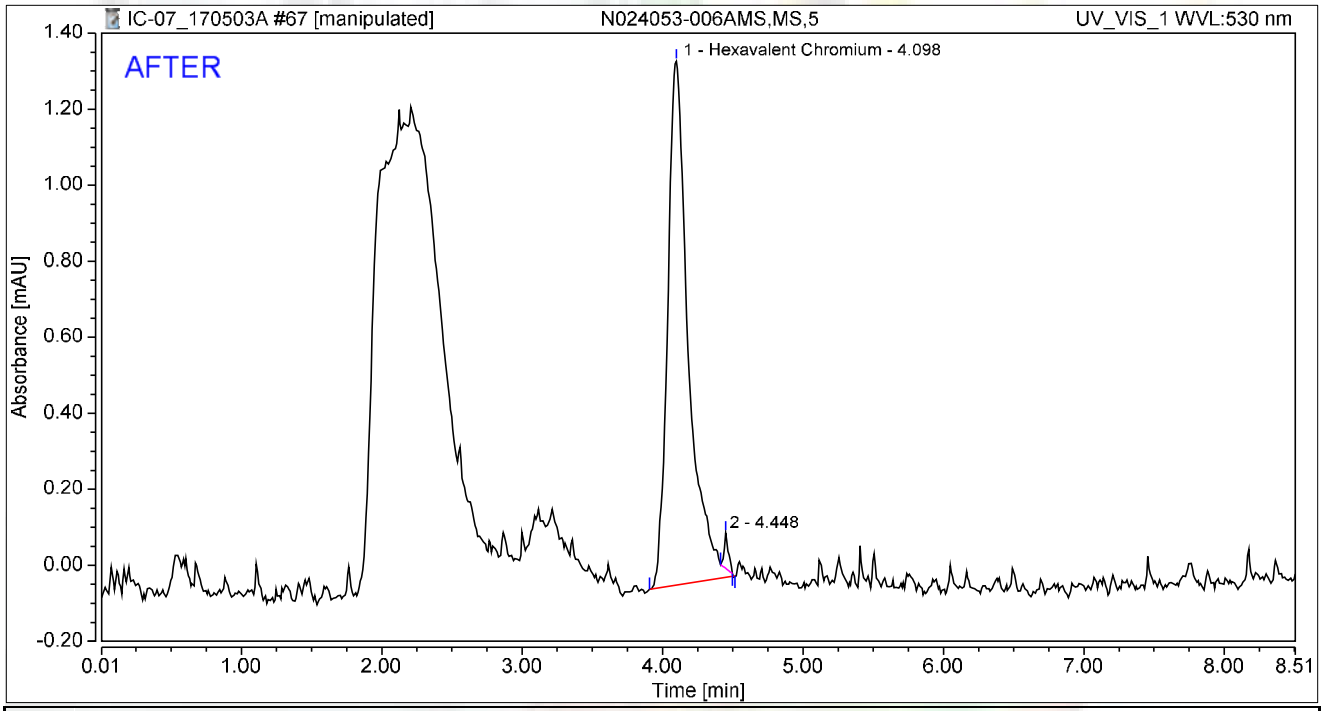
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.235	1.378	98.65	93.73	0.9652
2		4.448	0.003	0.092	1.35	6.27	n.a.
Total:			**0.239**	**1.470**	**100.00**	**100.00**	

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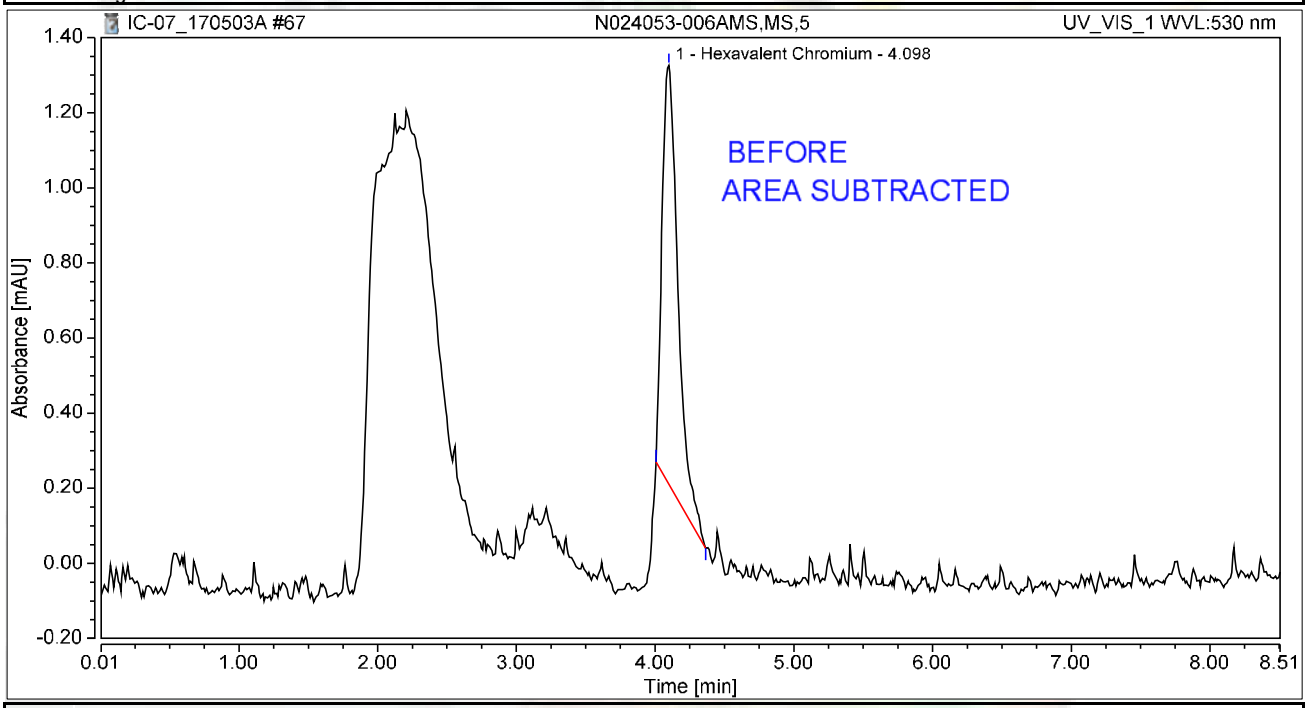
Chromatogram and Results

Injection Details

Injection Name:	**N024053-006AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.149	1.114	100.00	100.00	0.6100
Total:			**0.149**	**1.114**	**100.00**	**100.00**	

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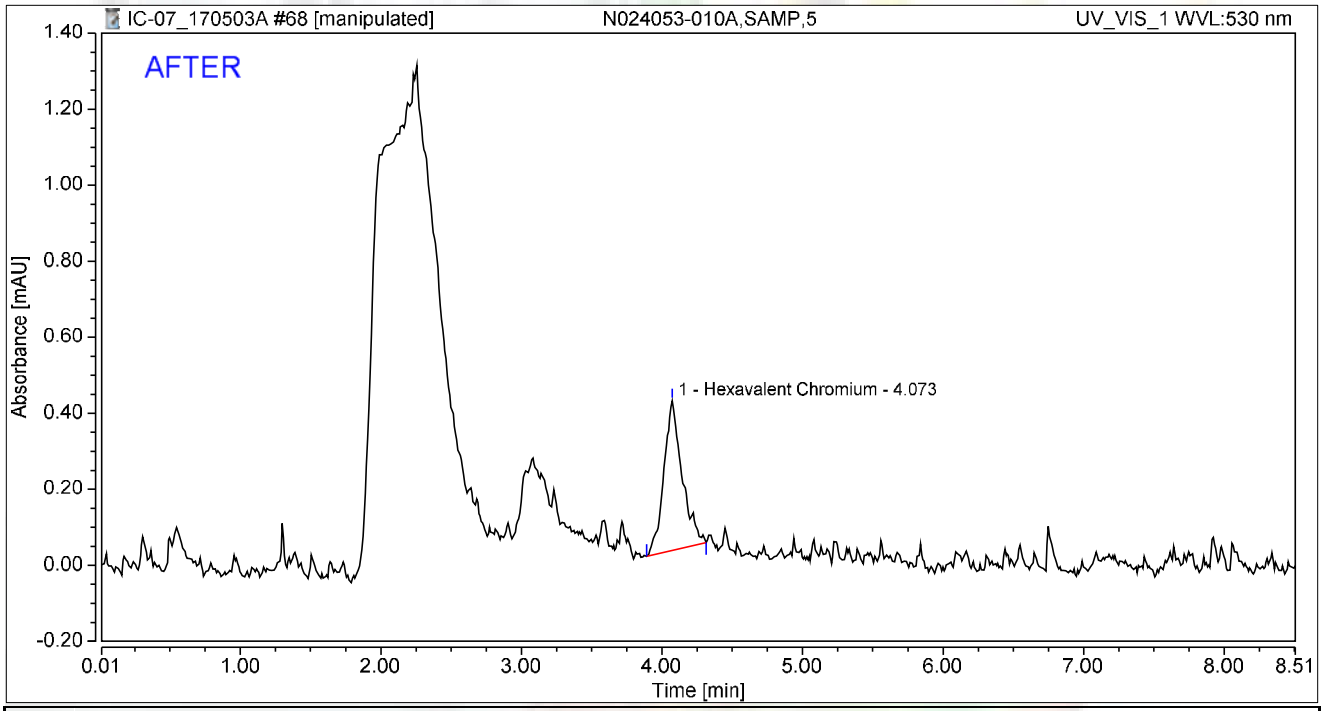
Chromatogram and Results

Injection Details

Injection Name:	**N024053-010A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.059	0.394	100.00	100.00	0.2421
Total:			**0.059**	**0.394**	**100.00**	**100.00**	

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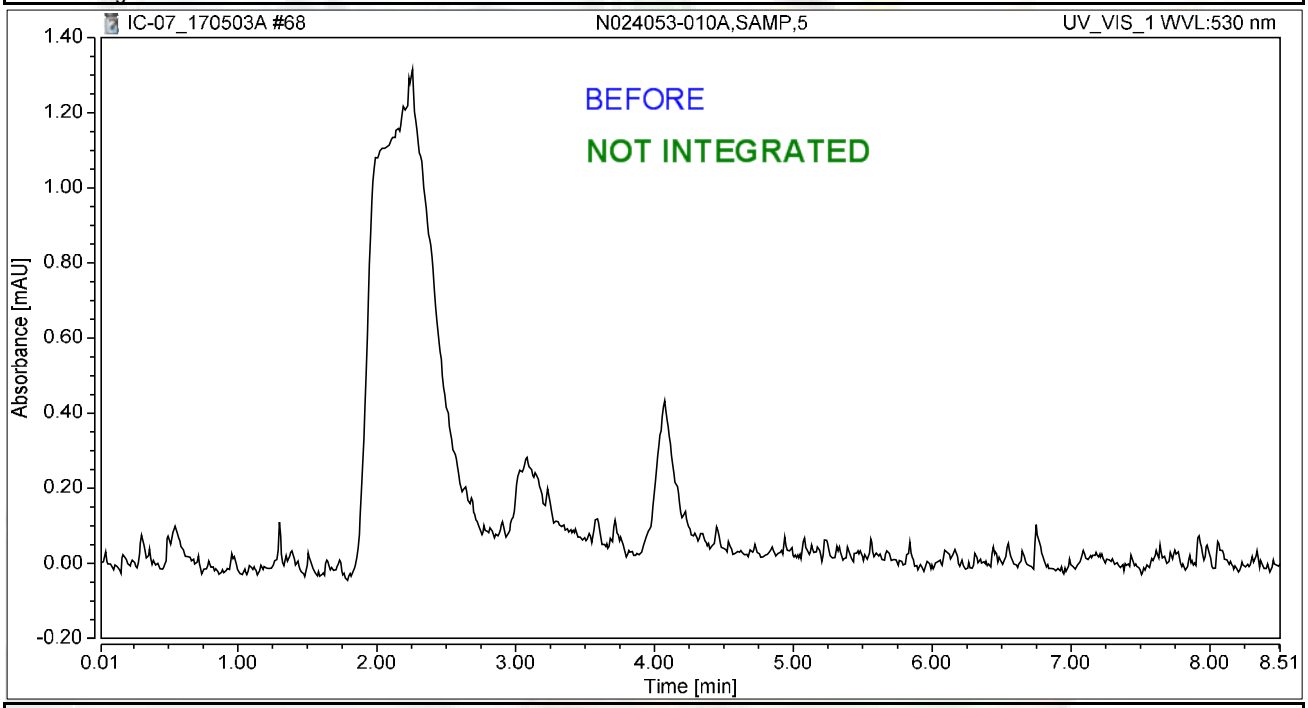
Chromatogram and Results

Injection Details

Injection Name:	**N024053-010A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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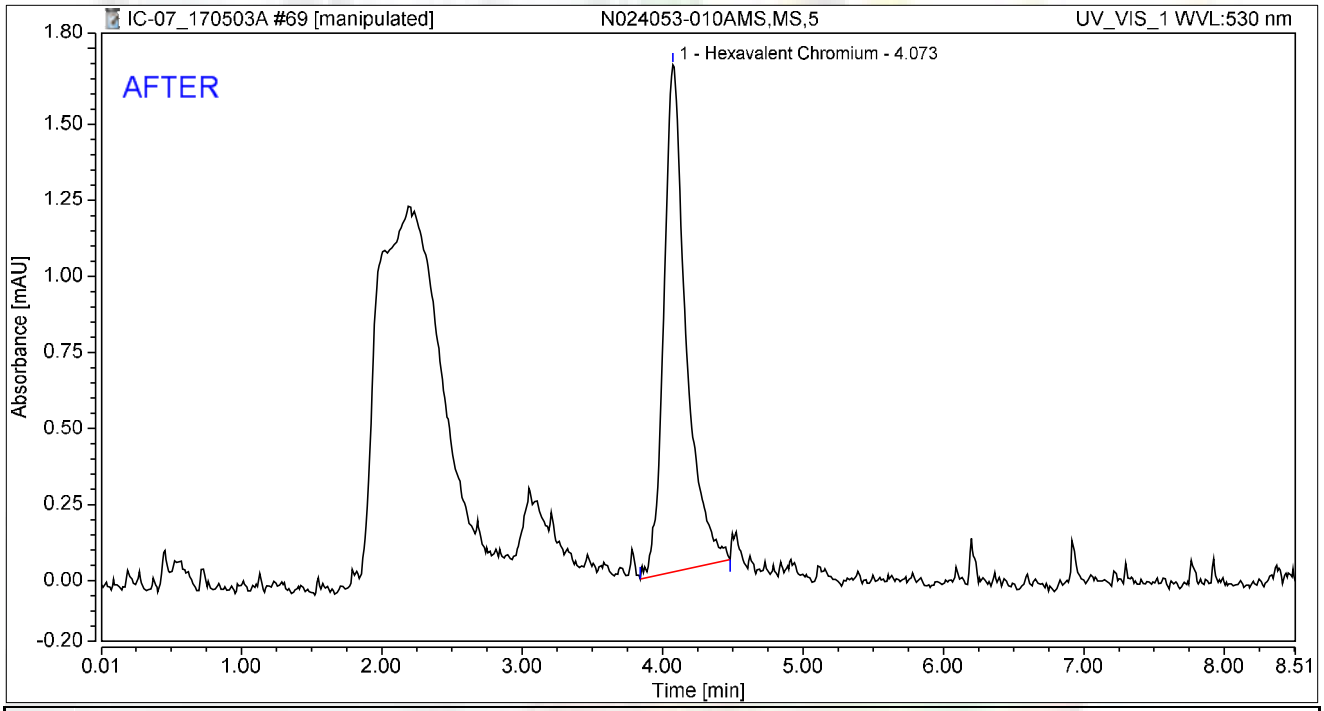
Chromatogram and Results

Injection Details

Injection Name:	**N024053-010AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.308	1.668	100.00	100.00	1.2615
Total:			**0.308**	**1.668**	**100.00**	**100.00**	

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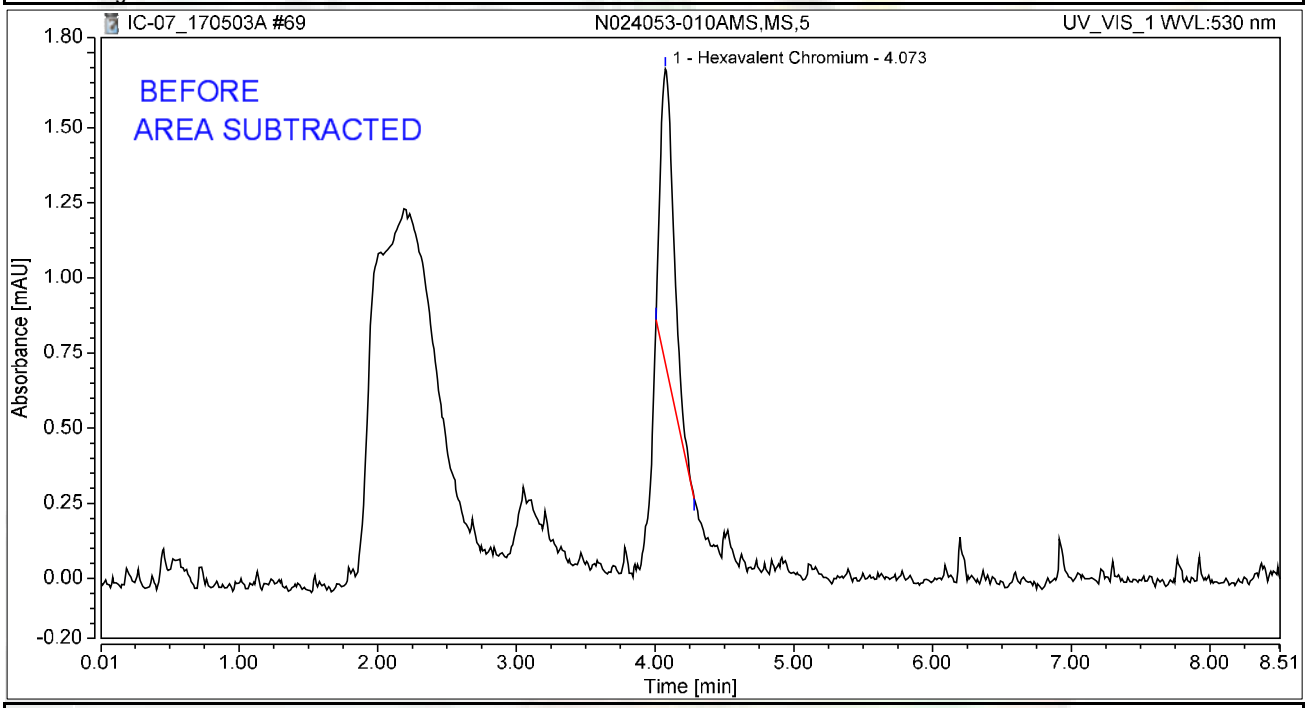
Chromatogram and Results

Injection Details

Injection Name:	**N024053-010AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 18:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.111	0.978	100.00	100.00	0.4567
Total:			**0.111**	**0.978**	**100.00**	**100.00**	

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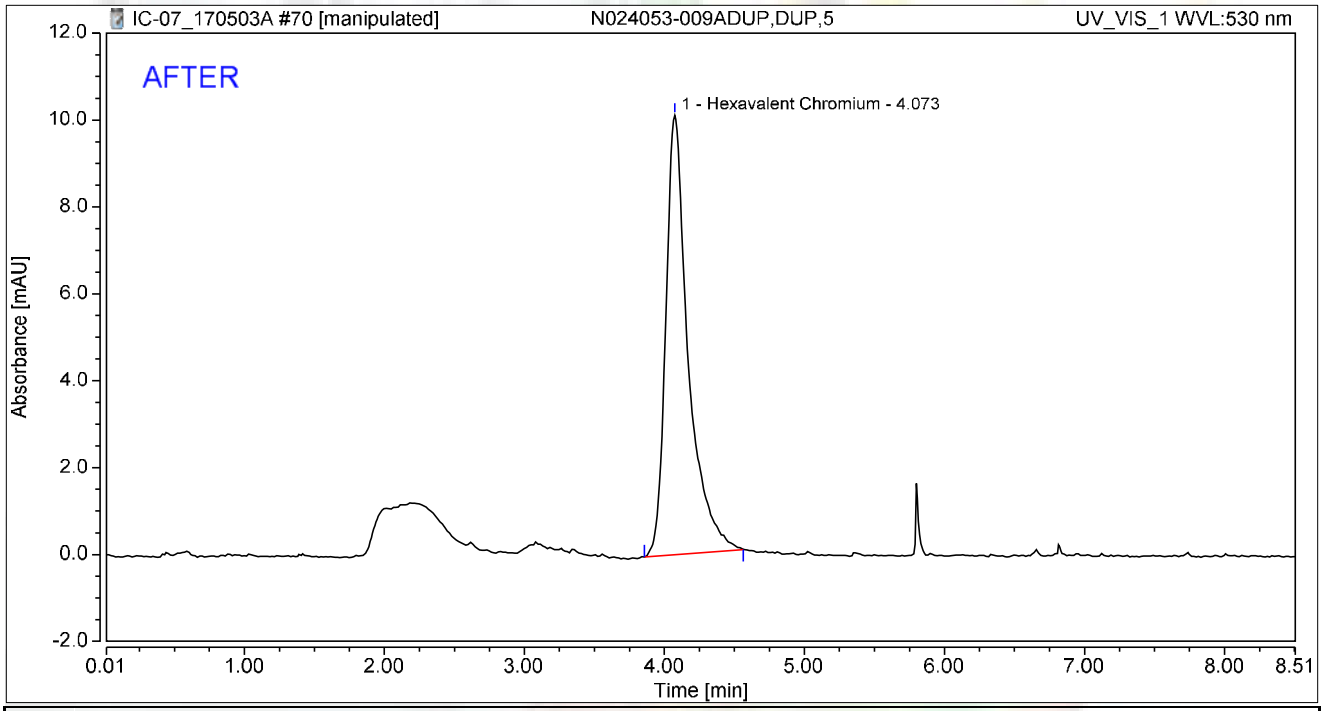
Chromatogram and Results

Injection Details

Injection Name:	**N024053-009ADUP,DUP,5**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	1.876	10.115	100.00	100.00	7.6909
Total:			**1.876**	**10.115**	**100.00**	**100.00**	

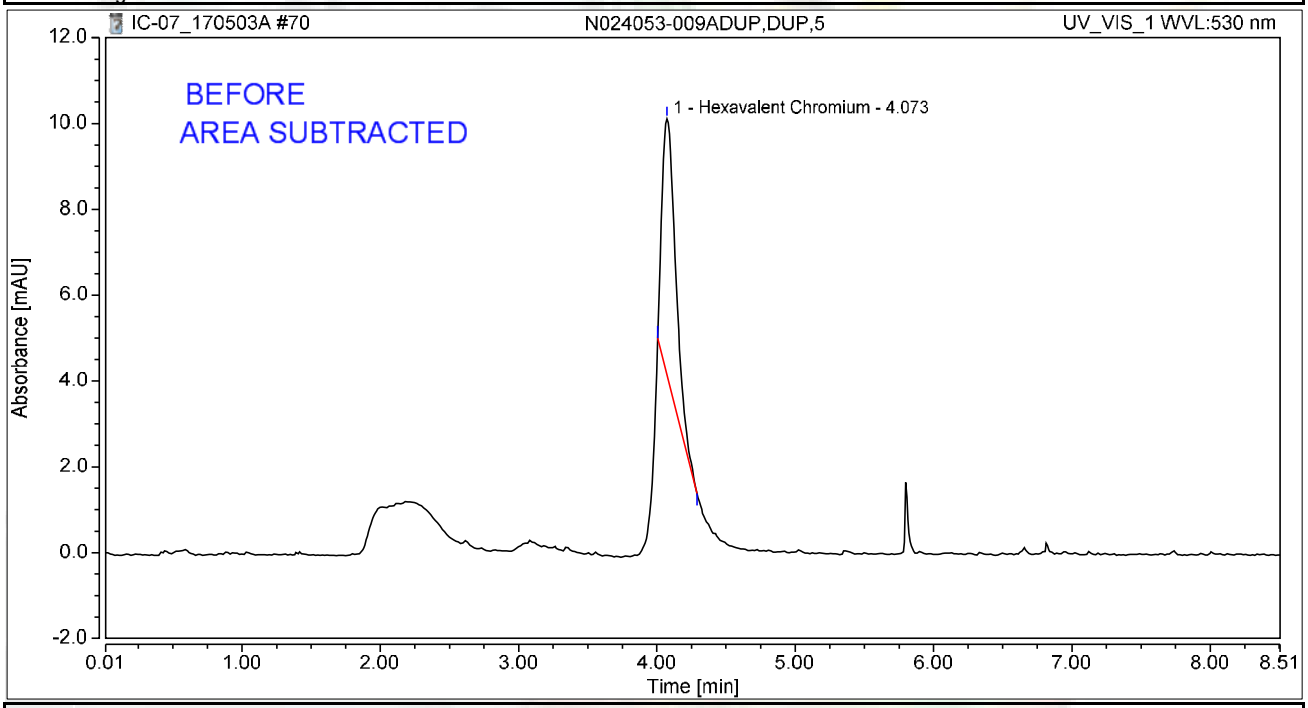
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-009ADUP,DUP,5**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.684	5.963	100.00	100.00	2.8033
Total:			**0.684**	**5.963**	**100.00**	**100.00**	

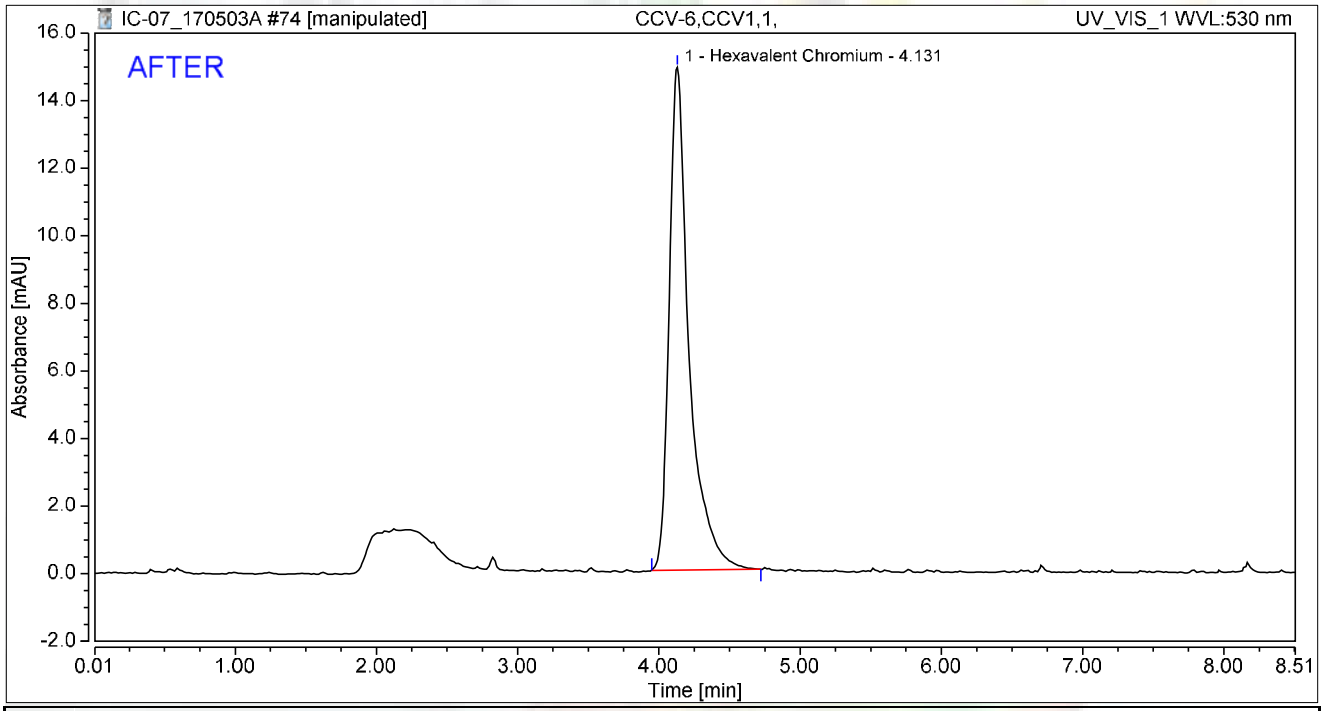
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.434	14.883	100.00	100.00	9.9788
Total:			**2.434**	**14.883**	**100.00**	**100.00**	

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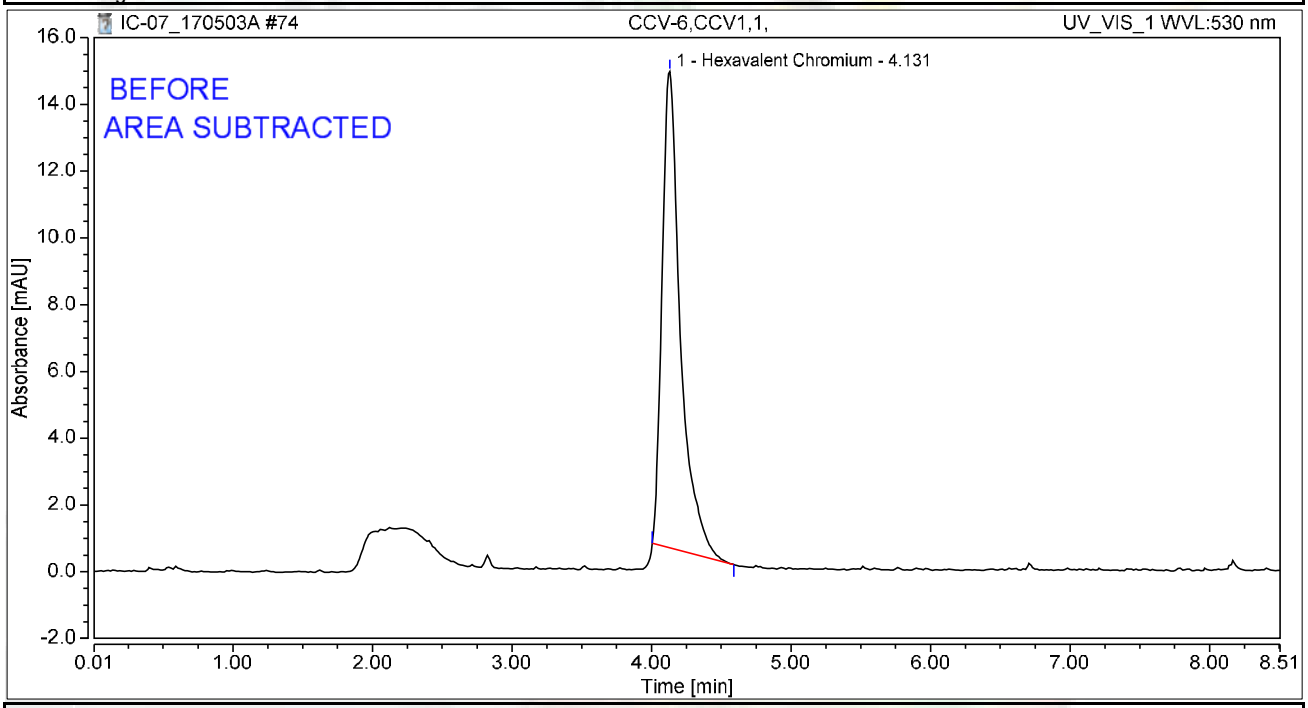
5/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.175	14.278	100.00	100.00	8.9180
Total:			**2.175**	**14.278**	**100.00**	**100.00**	

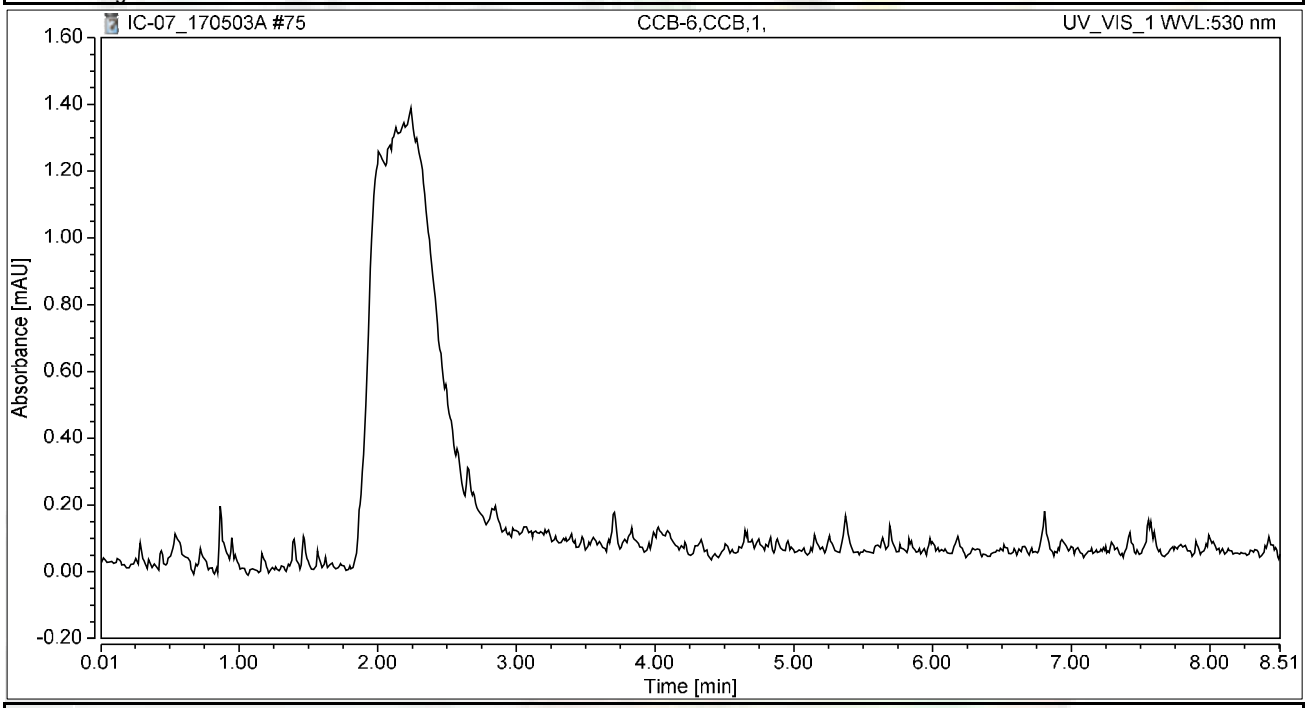
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA



INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 9:15 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 9:26 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/03/17 9:35 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/03/17 9:45 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/03/17 9:54 AM	Reported
17	MB-R115040	MBLK	1	Hexavalent Chromium	05/03/17 10:04 AM	Reported
18	LCS-R115040	LCS	1	Hexavalent Chromium	05/03/17 10:13 AM	Reported
19	N024053-001A	SAMP	1	Hexavalent Chromium	05/03/17 10:43 AM	Reported
20	N024053-001AMS	MS	1	Hexavalent Chromium	05/03/17 10:54 AM	Reported
21	N024053-002A	SAMP	1	Hexavalent Chromium	05/03/17 11:03 AM	Reported
22	N024053-002AMS	MS	1	Hexavalent Chromium	05/03/17 11:13 AM	Reported
23	N024053-003A	SAMP	1	Hexavalent Chromium	05/03/17 11:22 AM	Reported
24	N024053-003AMS	MS	1	Hexavalent Chromium	05/03/17 11:32 AM	Reported
25	N024053-004A	SAMP	1	Hexavalent Chromium	05/03/17 11:41 AM	Reported
26	N024053-004AMS	MS	1	Hexavalent Chromium	05/03/17 11:51 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/03/17 12:00 PM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/03/17 12:09 PM	Reported
29	N024053-005A	SAMP	1	Hexavalent Chromium	05/03/17 12:19 PM	Not Reported
30	N024053-005AMS	MS	1	Hexavalent Chromium	05/03/17 12:28 PM	Not Reported
31	N024053-006A	SAMP	1	Hexavalent Chromium	05/03/17 12:38 PM	Not Reported
32	N024053-006AMS	MS	1	Hexavalent Chromium	05/03/17 12:47 PM	Not Reported
33	N024053-007A	SAMP	1	Hexavalent Chromium	05/03/17 12:57 PM	Reported
34	N024053-007AMS	MS	1	Hexavalent Chromium	05/03/17 1:06 PM	Reported
35	N024053-008A	SAMP	1	Hexavalent Chromium	05/03/17 1:16 PM	Not Reported
36	N024053-008AMS	MS	1	Hexavalent Chromium	05/03/17 1:25 PM	Not Reported
37	N024053-008A	SAMP	5	Hexavalent Chromium	05/03/17 1:35 PM	Reported
38	N024053-008AMS	MS	5	Hexavalent Chromium	05/03/17 1:44 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/03/17 1:54 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/03/17 2:03 PM	Reported
41	N024053-009A	SAMP	5	Hexavalent Chromium	05/03/17 2:12 PM	Reported
42	N024053-009AMS	MS	5	Hexavalent Chromium	05/03/17 2:22 PM	Not Reported

INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024053-015A	SAMP	1000	Hexavalent Chromium	05/03/17 2:31 PM	Reported
44	N024053-015AMS	MS	1000	Hexavalent Chromium	05/03/17 2:41 PM	Reported
45	N024053-015AMSD	MSD	1000	Hexavalent Chromium	05/03/17 2:50 PM	Reported
46	N024071-001A	SAMP	1	Hexavalent Chromium	05/03/17 3:00 PM	Reported
47	N024071-002A	SAMP	1	Hexavalent Chromium	05/03/17 3:09 PM	Reported
48	N024071-003A	SAMP	1	Hexavalent Chromium	05/03/17 3:19 PM	Reported
49	N024053-010A	SAMP	1	Hexavalent Chromium	05/03/17 3:28 PM	Not Reported
50	N024053-010AMS	MS	1	Hexavalent Chromium	05/03/17 3:38 PM	Not Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/03/17 3:47 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/03/17 3:57 PM	Reported
53	N024053-011A	SAMP	1	Hexavalent Chromium	05/03/17 4:06 PM	Reported
54	N024053-011AMS	MS	1	Hexavalent Chromium	05/03/17 4:15 PM	Reported
55	N024053-012A	SAMP	1	Hexavalent Chromium	05/03/17 4:25 PM	Reported
56	N024053-012AMS	MS	1	Hexavalent Chromium	05/03/17 4:34 PM	Reported
57	N024053-013A	SAMP	1	Hexavalent Chromium	05/03/17 4:44 PM	Not Reported
58	N024053-013AMS	MS	1	Hexavalent Chromium	05/03/17 4:53 PM	Not Reported
59	BLANK	BLANK	1	Hexavalent Chromium	05/03/17 5:07 PM	Not Reported
60	N024038-014A	SAMP	5	Hexavalent Chromium	05/03/17 5:24 PM	Reported
61	N024038-014AMS	MS	5	Hexavalent Chromium	05/03/17 5:36 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	05/03/17 5:45 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	05/03/17 5:55 PM	Reported
64	N024053-005A	SAMP	5	Hexavalent Chromium	05/03/17 6:04 PM	Reported
65	N024053-005AMS	MS	5	Hexavalent Chromium	05/03/17 6:14 PM	Reported
66	N024053-006A	SAMP	5	Hexavalent Chromium	05/03/17 6:23 PM	Reported
67	N024053-006AMS	MS	5	Hexavalent Chromium	05/03/17 6:33 PM	Reported
68	N024053-010A	SAMP	5	Hexavalent Chromium	05/03/17 6:42 PM	Reported
69	N024053-010AMS	MS	5	Hexavalent Chromium	05/03/17 6:52 PM	Reported
70	N024053-009ADUP	DUP	5	Hexavalent Chromium	05/03/17 7:01 PM	Reported
71	LCS-R115041	LCS	1	Hexavalent Chromium	05/03/17 7:10 PM	Reported
72	MB-R115041	MBLK	1	Hexavalent Chromium	05/03/17 7:20 PM	Reported
73	N024054-001A	SAMP	5	Hexavalent Chromium	05/03/17 7:29 PM	Reported
74	CCV-6	CCV1	1	Hexavalent Chromium	05/03/17 7:39 PM	Reported
75	CCB-6	CCB	1	Hexavalent Chromium	05/03/17 7:48 PM	Reported
76	N024054-001AMS	MS	5	Hexavalent Chromium	05/03/17 7:58 PM	Not Reported
77	N024054-001AMSD	MSD	5	Hexavalent Chromium	05/03/17 8:07 PM	Not Reported
78	N024054-002A	SAMP	1	Hexavalent Chromium	05/03/17 8:17 PM	Not Reported
79	N024054-002AMS	MS	1	Hexavalent Chromium	05/03/17 8:26 PM	Not Reported
80	N024054-003A	SAMP	10	Hexavalent Chromium	05/03/17 8:36 PM	Not Reported
81	N024054-003AMS	MS	10	Hexavalent Chromium	05/03/17 8:45 PM	Not Reported
82	N024054-001ADUP	DUP	5	Hexavalent Chromium	05/03/17 8:55 PM	Not Reported
83	N024085-001A	SAMP	2000	Hexavalent Chromium	05/03/17 9:04 PM	Reported
84	N024085-002A	SAMP	2000	Hexavalent Chromium	05/03/17 9:13 PM	Reported

INJECTION LOG: 170503A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
85	N024085-003A	SAMP	2000	Hexavalent Chromium	05/03/17 9:23 PM	Reported
86	CCV-7	CCV	1	Hexavalent Chromium	05/03/17 9:32 PM	Reported
87	CCB-7	CCB	1	Hexavalent Chromium	05/03/17 9:42 PM	Reported
88	N024085-004A	SAMP	1000	Hexavalent Chromium	05/03/17 9:52 PM	Reported
89	N024085-005A	SAMP	200	Hexavalent Chromium	05/03/17 10:01 PM	Reported
90	N024085-006A	SAMP	200	Hexavalent Chromium	05/03/17 10:10 PM	Reported
91	N024085-007A	SAMP	200	Hexavalent Chromium	05/03/17 10:20 PM	Reported
92	N023952-003A	SAMP	1	Hexavalent Chromium	05/03/17 10:29 PM	Not Reported
93	N023952-003AMS	MS	1	Hexavalent Chromium	05/03/17 10:39 PM	Not Reported
94	N023952-004A	SAMP	5	Hexavalent Chromium	05/03/17 10:48 PM	Not Reported
95	N023952-004AMS	MS	5	Hexavalent Chromium	05/03/17 10:58 PM	Not Reported
96	N024053-013A	SAMP	100	Hexavalent Chromium	05/03/17 11:07 PM	Reported
97	N024053-013AMS	MS	100	Hexavalent Chromium	05/03/17 11:16 PM	Reported
98	CCV-8	CCV1	1	Hexavalent Chromium	05/03/17 11:26 PM	Reported
99	CCB-8	CCB	1	Hexavalent Chromium	05/03/17 11:35 PM	Reported
100	N024053-013AMSD	MSD	100	Hexavalent Chromium	05/03/17 11:45 PM	Reported
101	N024053-013ADUP	DUP	100	Hexavalent Chromium	05/03/17 11:54 PM	Reported
102	N024053-014A	SAMP	100	Hexavalent Chromium	05/04/17 12:04 AM	Reported
103	N024053-014AMS	MS	100	Hexavalent Chromium	05/04/17 12:13 AM	Reported
104	CCV-9	CCV	1	Hexavalent Chromium	05/04/17 12:23 AM	Reported
105	CCB-9	CCB	1	Hexavalent Chromium	05/04/17 12:32 AM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170503A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**04/May/17 14:22:22**
No. of Injections:	**108**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/03/2017 09:15	Finished	
13	BLANK	2	1000	Unknown		05/03/2017 09:26	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/03/2017 09:35	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/03/2017 09:45	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/03/2017 09:54	Finished	CCB R170419B
17	MB-H2O,MBLK,1	6	1000	Unknown		05/03/2017 10:04	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/03/2017 10:13	Finished	LCS, IWST-170330B
19	N024053-001A,SAMF	9	1000	Unknown		05/03/2017 10:43	Finished	SAMP, 10mL
20	N024053-001AMS,MS	10	1000	Unknown		05/03/2017 10:54	Finished	MS (1ppb), IWST-170330B,2>1
21	N024053-002A,SAMF	11	1000	Unknown		05/03/2017 11:03	Finished	SAMP, 10mL
22	N024053-002AMS,MS	12	1000	Unknown		05/03/2017 11:13	Finished	MS (1ppb), IWST-170330B,2>1
23	N024053-003A,SAMF	13	1000	Unknown		05/03/2017 11:22	Finished	SAMP, 10mL
24	N024053-003AMS,MS	14	1000	Unknown		05/03/2017 11:32	Finished	MS (1ppb), IWST-170330B,2>1
25	N024053-004A,SAMF	15	1000	Unknown		05/03/2017 11:41	Finished	SAMP, 10mL
26	N024053-004AMS,MS	16	1000	Unknown		05/03/2017 11:51	Finished	MS (1ppb), IWST-170330B,2>1
27	CCV-2,CCV1,1,	17	1000	Unknown		05/03/2017 12:00	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	18	1000	Unknown		05/03/2017 12:09	Finished	CCB R170419B
29	N024053-005A,SAMF	19	1000	Unknown		05/03/2017 12:19	Finished	SAMP, 10mL
30	N024053-005AMS,MS	20	1000	Unknown		05/03/2017 12:28	Finished	MS (1ppb), IWST-170330B,2>1
31	N024053-006A,SAMF	21	1000	Unknown		05/03/2017 12:38	Finished	SAMP, 10mL
32	N024053-006AMS,MS	22	1000	Unknown		05/03/2017 12:47	Finished	MS (1ppb), IWST-170330B,2>1
33	N024053-007A,SAMF	23	1000	Unknown		05/03/2017 12:57	Finished	SAMP, 10mL
34	N024053-007AMS,MS	24	1000	Unknown		05/03/2017 13:06	Finished	MS (1ppb), IWST-170330B,2>1
35	N024053-008A,SAMF	25	1000	Unknown		05/03/2017 13:16	Finished	SAMP, 10mL
36	N024053-008AMS,MS	26	1000	Unknown		05/03/2017 13:25	Finished	MS (1ppb), IWST-170330B,2>1
37	N024053-008A,SAMF	27	1000	Unknown		05/03/2017 13:35	Finished	SAMP,2>10mL
38	N024053-008AMS,MS	28	1000	Unknown		05/03/2017 13:44	Finished	MS (1ppb), IWST-170330B,2>1
39	CCV-3,CCV,1,	29	1000	Unknown		05/03/2017 13:54	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	30	1000	Unknown		05/03/2017 14:03	Finished	CCB R170419B
41	N024053-009A,SAMF	31	1000	Unknown		05/03/2017 14:12	Finished	SAMP,2>10mL
42	N024053-009AMS,MS	32	1000	Unknown		05/03/2017 14:22	Finished	MS (5ppb), IWST-170330B,2>1
43	N024053-015A,SAMF	33	1000	Unknown		05/03/2017 14:31	Finished	SAMP,0.01>10mL
44	N024053-015AMS,MS	34	1000	Unknown		05/03/2017 14:41	Finished	MS (5ppb), IWST-170330B,0.0
45	N024053-015AMSD,M	35	1000	Unknown		05/03/2017 14:50	Finished	MSD (5ppb), IWST-170330B,0.
46	N024071-001A,SAMF	36	1000	Unknown		05/03/2017 15:00	Finished	SAMP, 10mL
47	N024071-002A,SAMF	37	1000	Unknown		05/03/2017 15:09	Finished	SAMP, 10mL
48	N024071-003A,SAMF	38	1000	Unknown		05/03/2017 15:19	Finished	SAMP, 10mL
49	N024053-010A,SAMF	39	1000	Unknown		05/03/2017 15:28	Finished	SAMP,10mL
50	N024053-010AMS,MS	40	1000	Unknown		05/03/2017 15:38	Finished	MS (1ppb), IWST-170330B,10
51	CCV-4,CCV1,1,	41	1000	Unknown		05/03/2017 15:47	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	42	1000	Unknown		05/03/2017 15:57	Finished	CCB R170419B
53	N024053-011A,SAMF	43	1000	Unknown		05/03/2017 16:06	Finished	SAMP,10mL
54	N024053-011AMS,MS	44	1000	Unknown		05/03/2017 16:15	Finished	MS (1ppb), IWST-170330B,10
55	N024053-012A,SAMF	45	1000	Unknown		05/03/2017 16:25	Finished	SAMP,10mL
56	N024053-012AMS,MS	46	1000	Unknown		05/03/2017 16:34	Finished	MS (1ppb), IWST-170330B,10
57	N024053-013A,SAMF	47	1000	Unknown		05/03/2017 16:44	Finished	SAMP,10mL
58	N024053-013AMS,MS	48	1000	Unknown		05/03/2017 16:53	Finished	MS (1ppb), IWST-170330B,10
59	BLANK	49	1000	Unknown		05/03/2017 17:07	Finished	
60	N024038-014A,SAMF	1	1000	Unknown		05/03/2017 17:24	Finished	SAMP,2>10mL

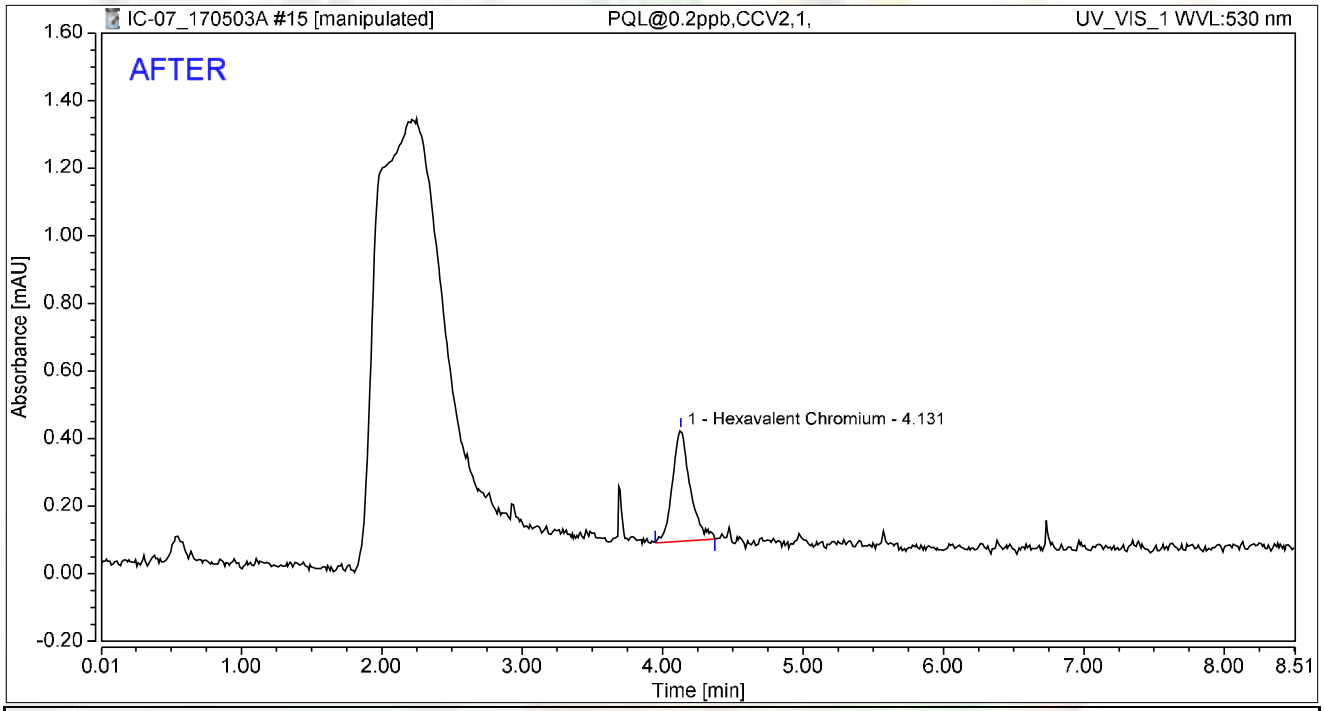
61	N024038-014AMS,MS	2	1000	Unknown		05/03/2017 17:36	Finished	MS (1ppb), IWST-170330B,2>1
62	CCV-5,CCV,1,	3	1000	Unknown		05/03/2017 17:45	Finished	CCV @5ppb, IWST-170330B
63	CCB-5,CCB,1,	4	1000	Unknown		05/03/2017 17:55	Finished	CCB R170414A
64	N024053-005A,SAMP	5	1000	Unknown		05/03/2017 18:04	Finished	SAMP,2>10mL
65	N024053-005AMS,MS	6	1000	Unknown		05/03/2017 18:14	Finished	MS (1ppb), IWST-170330B,2>1
66	N024053-006A,SAMP	7	1000	Unknown		05/03/2017 18:23	Finished	SAMP,2>10mL
67	N024053-006AMS,MS	8	1000	Unknown		05/03/2017 18:33	Finished	MS (1ppb), IWST-170330B,2>1
68	N024053-010A,SAMP	9	1000	Unknown		05/03/2017 18:42	Finished	SAMP,2>10mL
69	N024053-010AMS,MS	10	1000	Unknown		05/03/2017 18:52	Finished	MS (1ppb), IWST-170330B,2>1
70	N024053-009ADUP,D	11	1000	Unknown		05/03/2017 19:01	Finished	DUP,2>10mL
71	LCS-2,LCS,1	12	1000	Unknown		05/03/2017 19:10	Finished	LCS, IWST-170330B
72	MB-2,MBLK,1	13	1000	Unknown		05/03/2017 19:20	Finished	MB R170419B
73	N024054-001A,SAMP	14	1000	Unknown		05/03/2017 19:29	Finished	SAMP,10mL
74	CCV-6,CCV1,1,	15	1000	Unknown		05/03/2017 19:39	Finished	CCV @10ppb, IWST-170330B
75	CCB-6,CCB,1,	16	1000	Unknown		05/03/2017 19:48	Finished	CCB R170414A
76	N024054-001AMS,MS	17	1000	Unknown		05/03/2017 19:58	Finished	MS (5ppb), IWST-170330B,10
77	N024054-001AMSD,M	18	1000	Unknown		05/03/2017 20:07	Finished	MSD (5ppb), IWST-170330B,10
78	N024054-002A,SAMP	19	1000	Unknown		05/03/2017 20:17	Finished	SAMP,10mL
79	N024054-002AMS,MS	20	1000	Unknown		05/03/2017 20:26	Finished	MS (1ppb), IWST-170330B,10
80	N024054-003A,SAMP	21	1000	Unknown		05/03/2017 20:36	Finished	SAMP,1>10mL
81	N024054-003AMS,MS	22	1000	Unknown		05/03/2017 20:45	Finished	MS (5ppb), IWST-170330B,1>1
82	N024054-001ADUP,D	23	1000	Unknown		05/03/2017 20:55	Finished	DUP,10mL
83	N024085-001A,SAMP	24	1000	Unknown		05/03/2017 21:04	Finished	SAMP,0.005>10mL
84	N024085-002A,SAMP	25	1000	Unknown		05/03/2017 21:13	Finished	SAMP,0.005>10mL
85	N024085-003A,SAMP	26	1000	Unknown		05/03/2017 21:23	Finished	SAMP,0.005>10mL
86	CCV-7,CCV,1,	27	1000	Unknown		05/03/2017 21:32	Finished	CCV @5ppb, IWST-170330B
87	CCB-7,CCB,1,	28	1000	Unknown		05/03/2017 21:42	Finished	CCB R170419B
88	N024085-004A,SAMP	29	1000	Unknown		05/03/2017 21:52	Finished	SAMP,0.01>10mL
89	N024085-005A,SAMP	30	1000	Unknown		05/03/2017 22:01	Finished	SAMP,0.05>10mL
90	N024085-006A,SAMP	31	1000	Unknown		05/03/2017 22:10	Finished	SAMP,0.05>10mL
91	N024085-007A,SAMP	32	1000	Unknown		05/03/2017 22:20	Finished	SAMP,0.05>10mL
92	N023952-003A,SAMP	33	1000	Unknown		05/03/2017 22:29	Finished	SAMP,10mL
93	N023952-003AMS,MS	34	1000	Unknown		05/03/2017 22:39	Finished	MS (5ppb), IWST-170330B,10
94	N023952-004A,SAMP	35	1000	Unknown		05/03/2017 22:48	Finished	SAMP,2>10mL
95	N023952-004AMS,MS	36	1000	Unknown		05/03/2017 22:58	Finished	MS (5ppb), IWST-170330B,2>1
96	N024053-013A,SAMP	37	1000	Unknown		05/03/2017 23:07	Finished	SAMP,0.1>10mL
97	N024053-013AMS,MS	38	1000	Unknown		05/03/2017 23:16	Finished	MS (5ppb), IWST-170330B,0.1
98	CCV-8,CCV1,1,	39	1000	Unknown		05/03/2017 23:26	Finished	CCV @10ppb, IWST-170330B
99	CCB-8,CCB,1,	40	1000	Unknown		05/03/2017 23:35	Finished	CCB R170419B
100	N024053-013AMSD,M	41	1000	Unknown		05/03/2017 23:45	Finished	MS (5ppb), IWST-170330B,0.1
101	N024053-013ADUP,D	42	1000	Unknown		05/03/2017 23:54	Finished	MS (5ppb), IWST-170330B,0.1
102	N024053-014A,SAMP	43	1000	Unknown		05/04/2017 00:04	Finished	MS (5ppb), IWST-170330B,0.1
103	N024053-014AMS,MS	44	1000	Unknown		05/04/2017 00:13	Finished	MS (5ppb), IWST-170330B,0.1
104	CCV-9,CCV,1,	45	1000	Unknown		05/04/2017 00:23	Finished	CCV @5ppb, IWST-170330B
105	CCB-9,CCB,1,	46	1000	Unknown		05/04/2017 00:32	Finished	CCB R170414A
106	SHUTDOWN	47	1000	Unknown		05/04/2017 00:42	Finished	
107	Eluent: R170502A	48	1000	Unknown		n.a.	Finished	Eluent
108	PCR: R170502B	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.048	0.329	100.00	100.00	0.1979
Total:			**0.048**	**0.329**	**100.00**	**100.00**	

rba 5/7/2017

Reviewed by: Nancy 5/10/2017

My first report/Integration

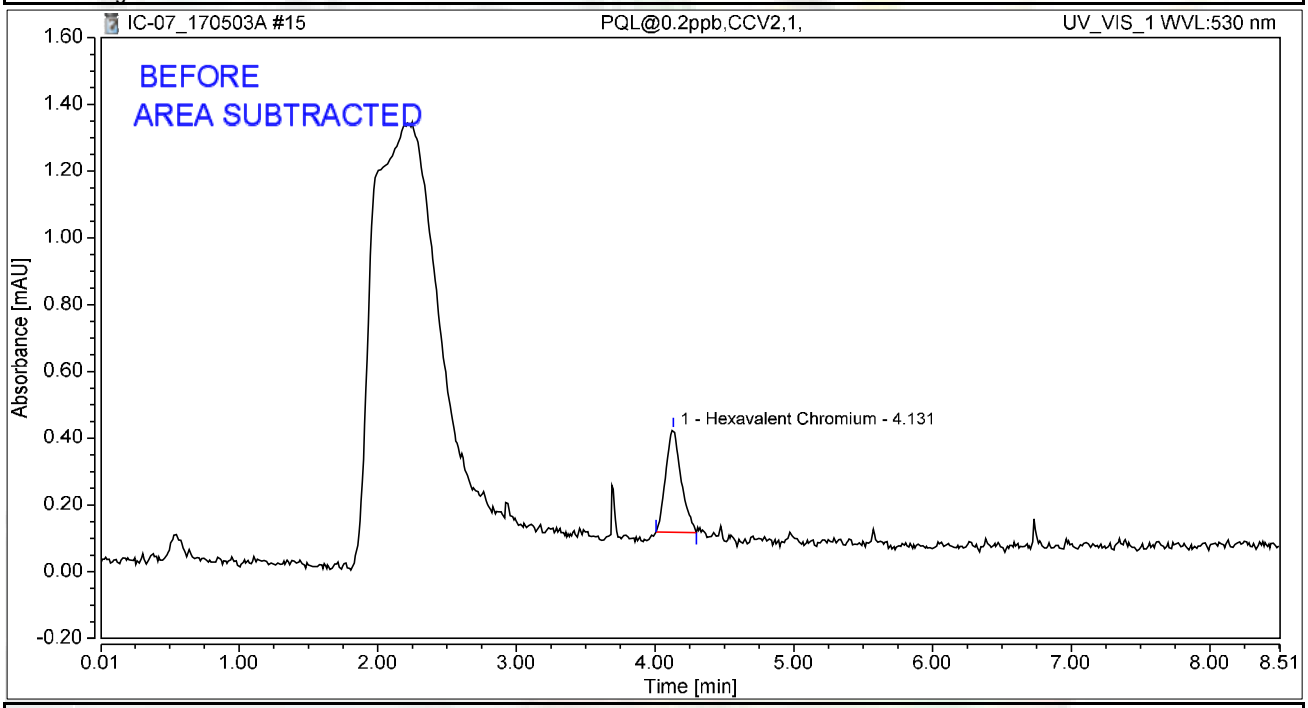
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 09:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.040	0.306	100.00	100.00	0.1628
Total:			**0.040**	**0.306**	**100.00**	**100.00**	

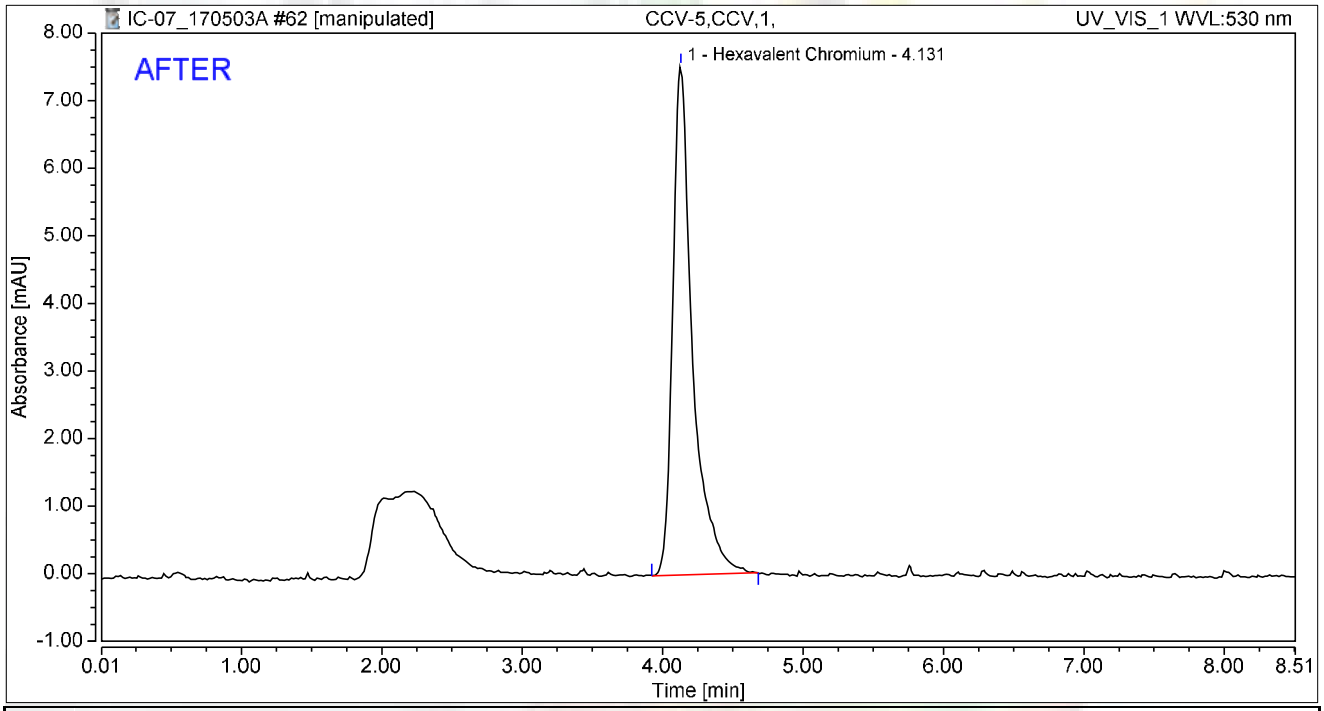
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.232	7.534	100.00	100.00	5.0496
Total:			**1.232**	**7.534**	**100.00**	**100.00**	

rba 5/7/2017

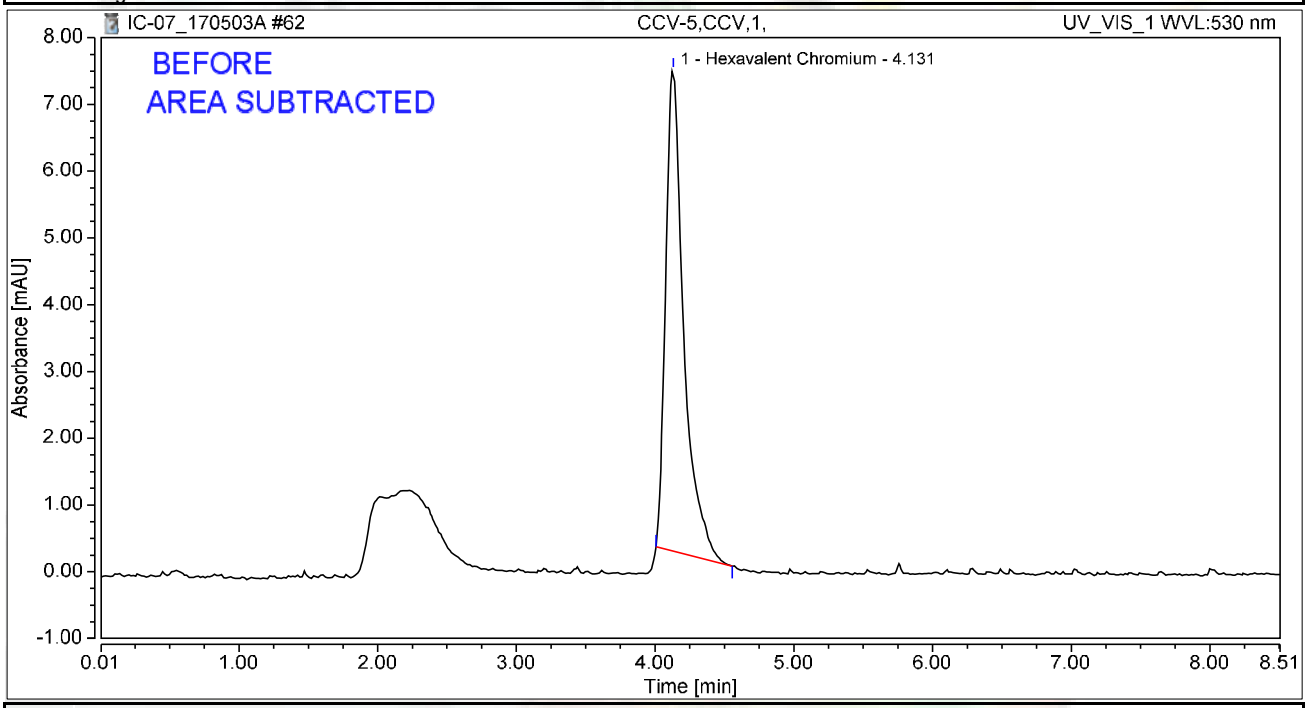
Reviewed by: Nancy 5/10/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.091	7.210	100.00	100.00	4.4739
Total:			**1.091**	**7.210**	**100.00**	**100.00**	

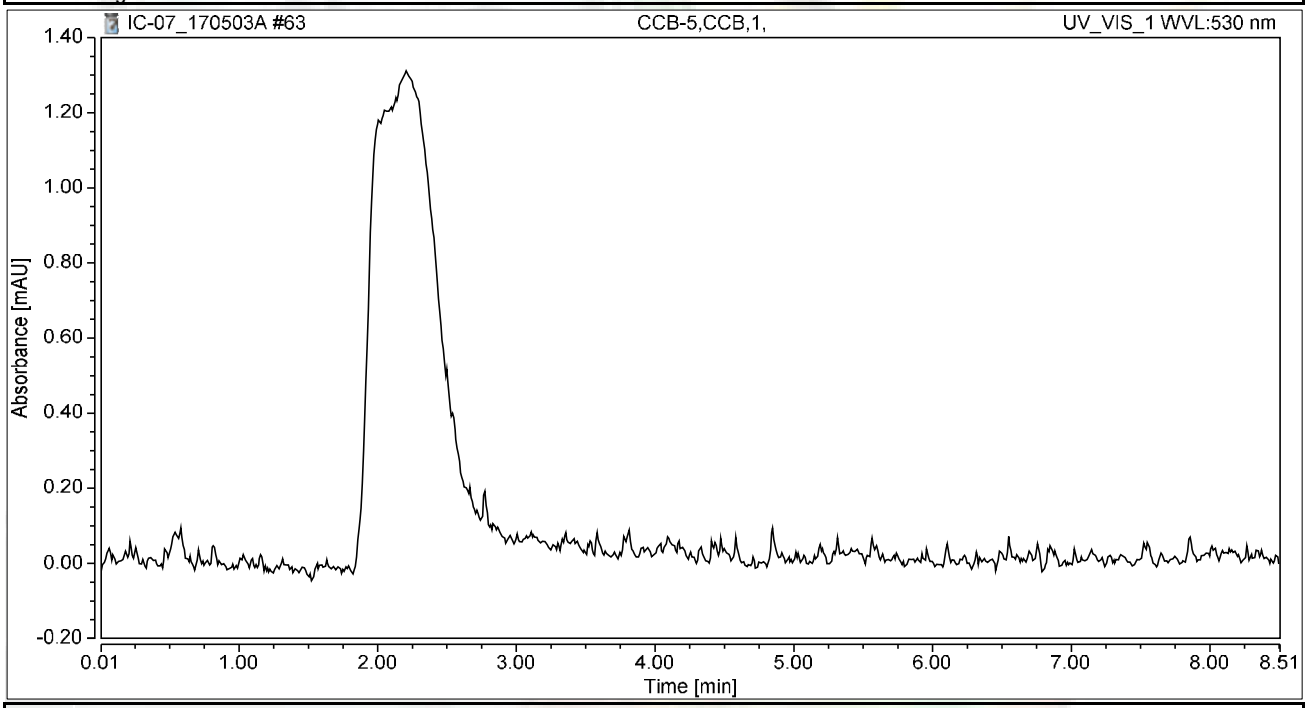
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 17:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

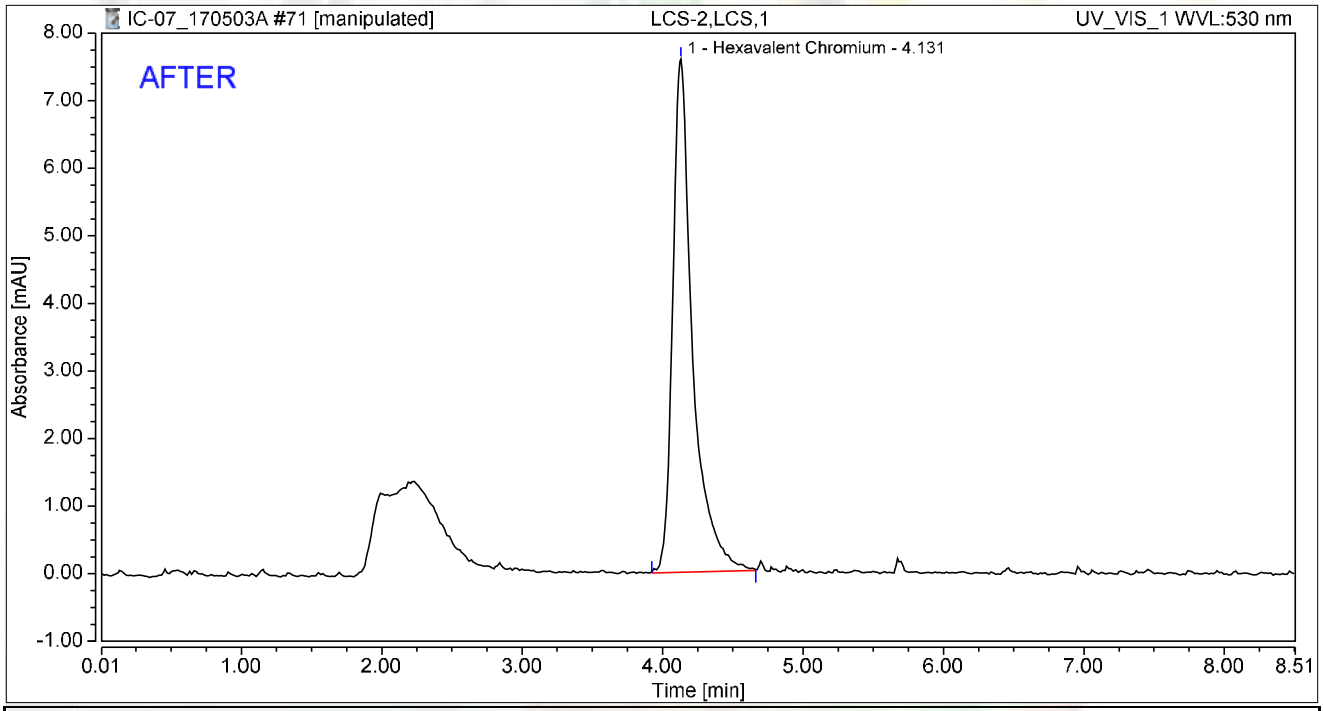
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.249	7.594	100.00	100.00	5.1192
Total:			**1.249**	**7.594**	**100.00**	**100.00**	

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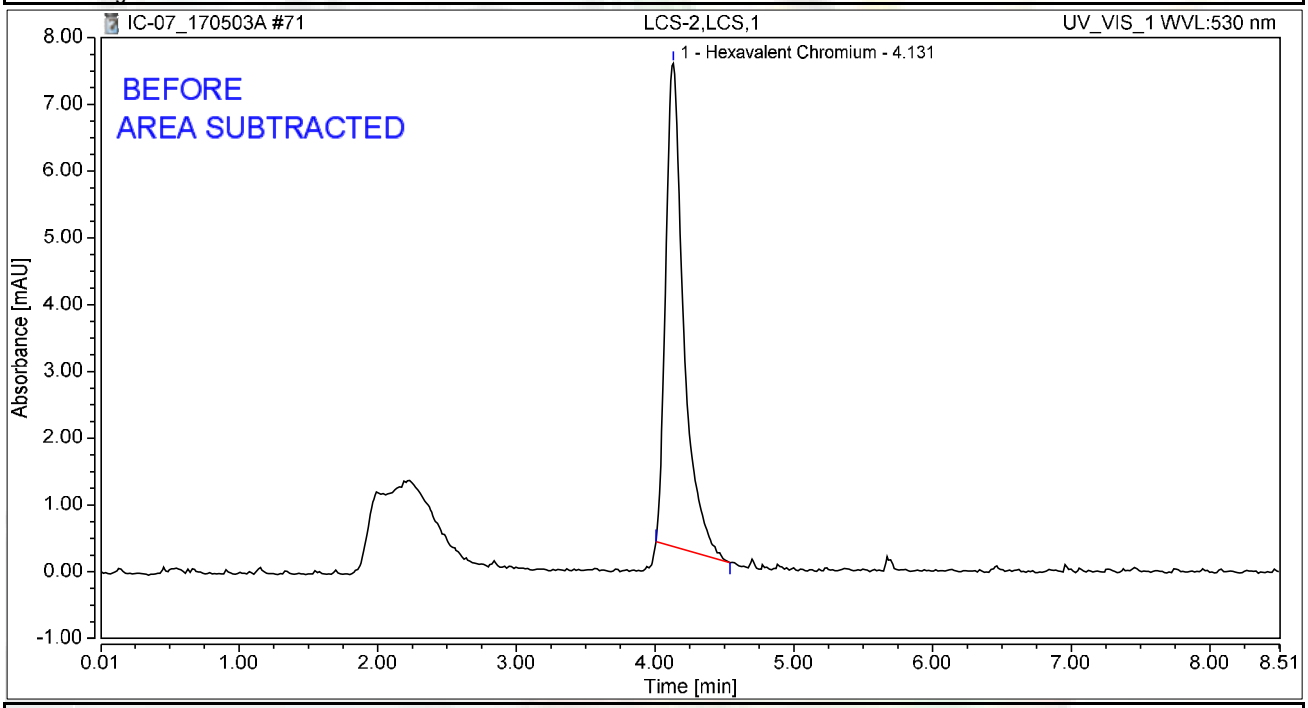
Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.088	7.232	100.00	100.00	4.4599
Total:			**1.088**	**7.232**	**100.00**	**100.00**	

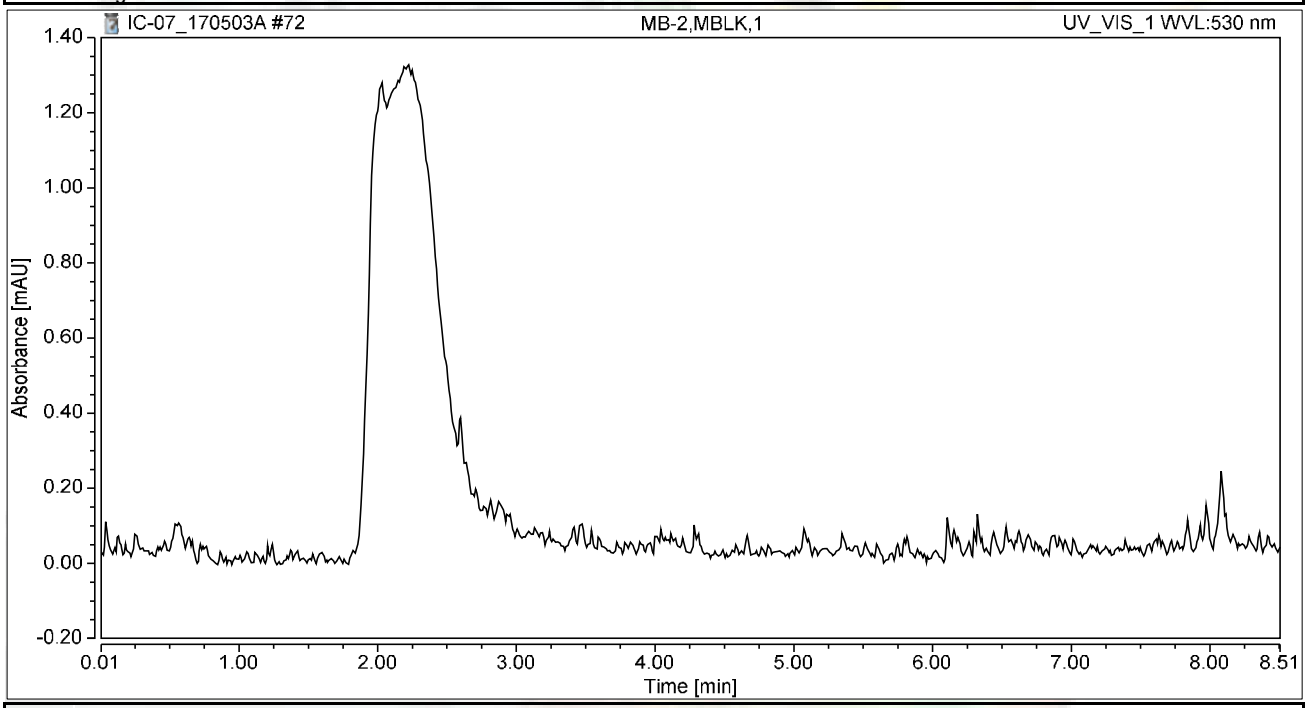
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

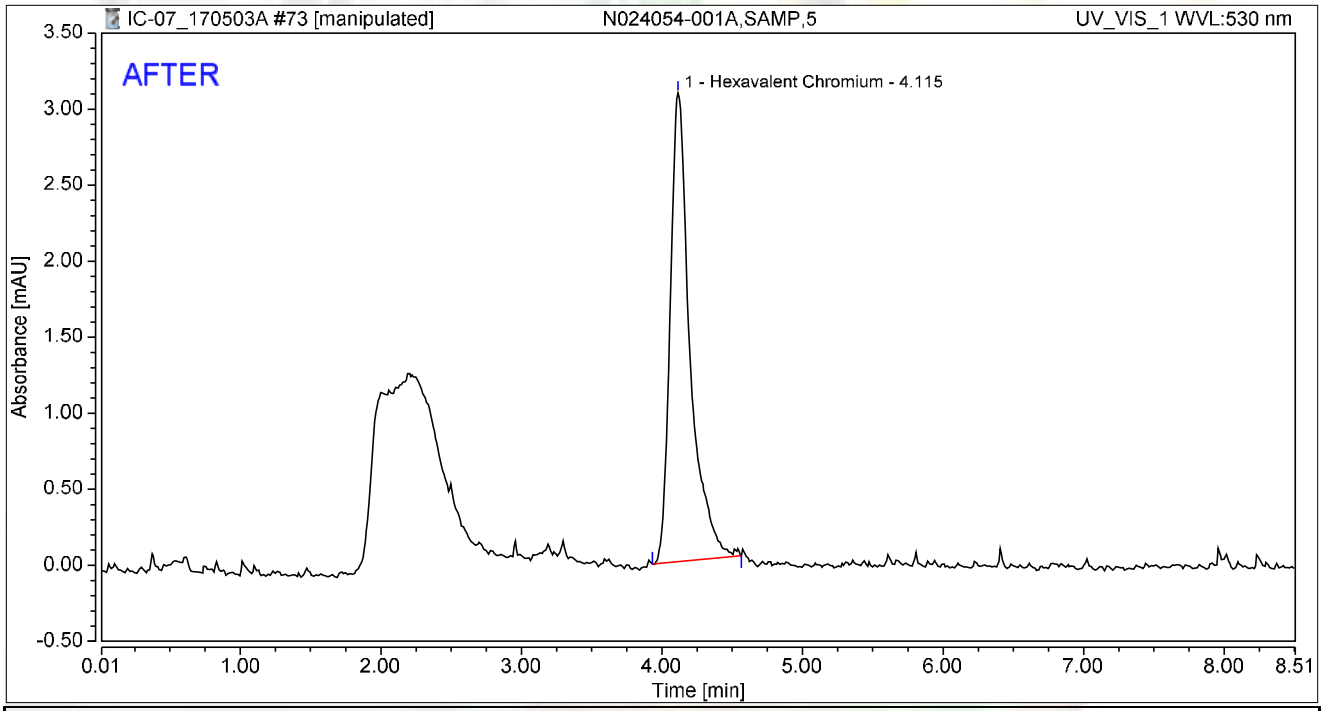
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024054-001A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.504	3.081	100.00	100.00	2.0656
Total:			**0.504**	**3.081**	**100.00**	**100.00**	

rba 5/7/2017

Reviewed by: Nancy 5/12/2017
My first report/Integration

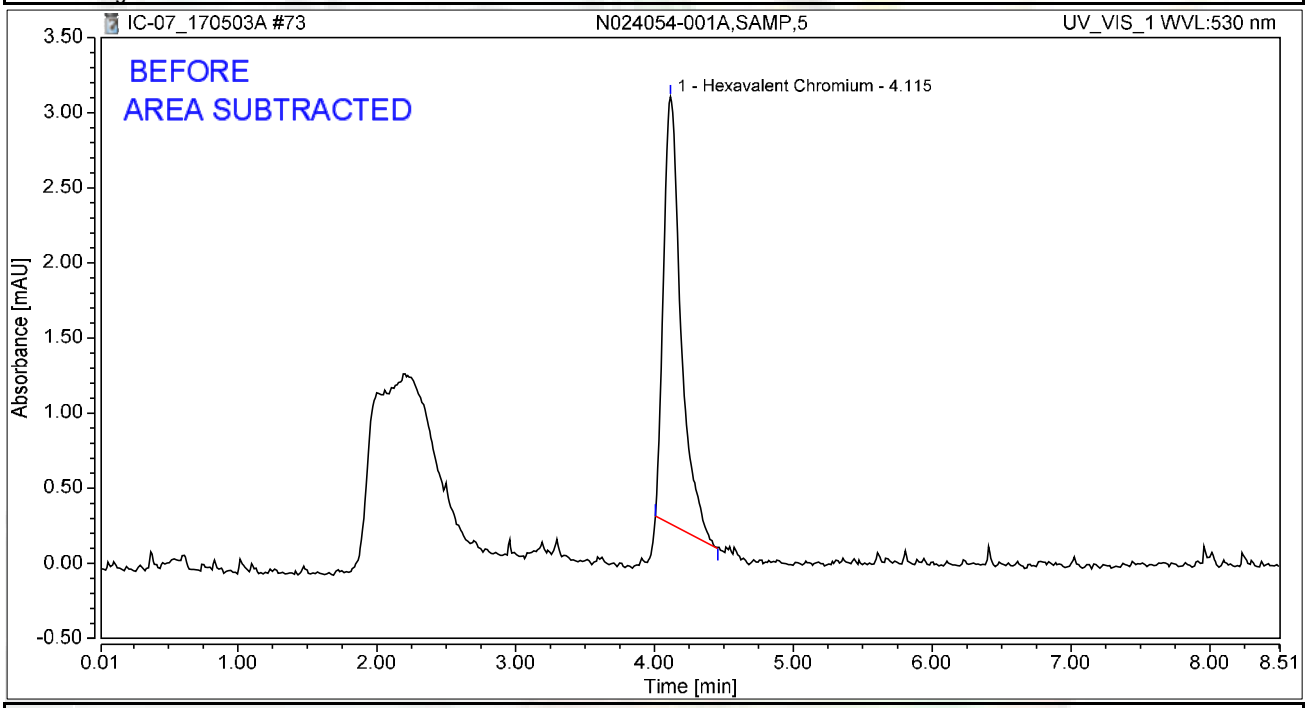
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024054-001A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.417	2.841	100.00	100.00	1.7085
Total:			**0.417**	**2.841**	**100.00**	**100.00**	

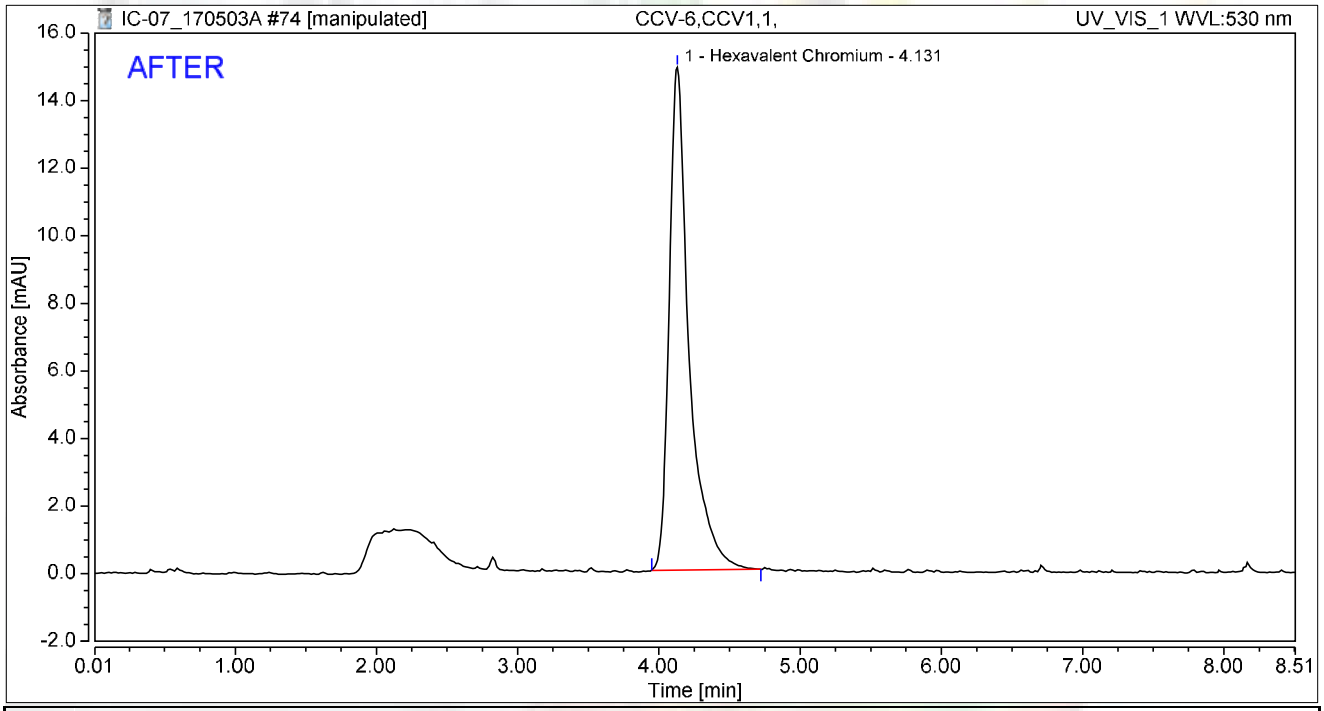
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.434	14.883	100.00	100.00	9.9788
Total:			**2.434**	**14.883**	**100.00**	**100.00**	

rba 5/7/2017

My first report integration

Reviewed by: Nancy 5/10/2017

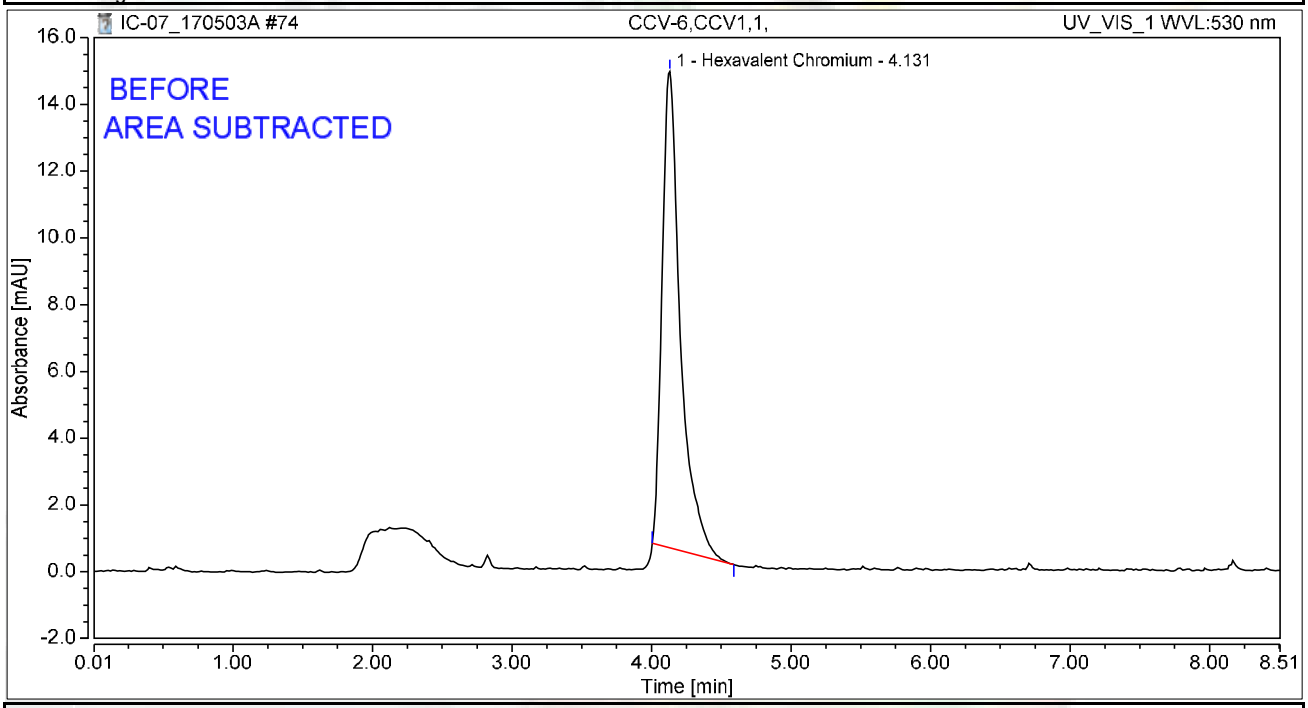
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.175	14.278	100.00	100.00	8.9180
Total:			**2.175**	**14.278**	**100.00**	**100.00**	

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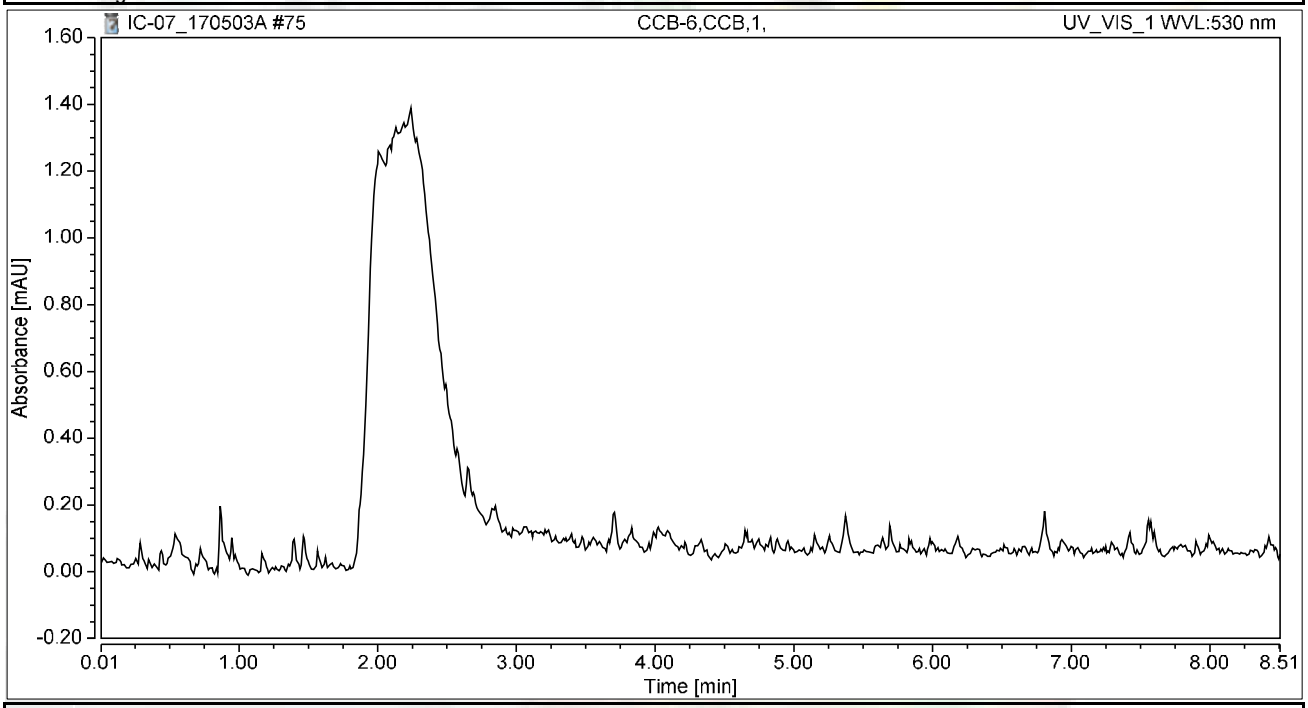
Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

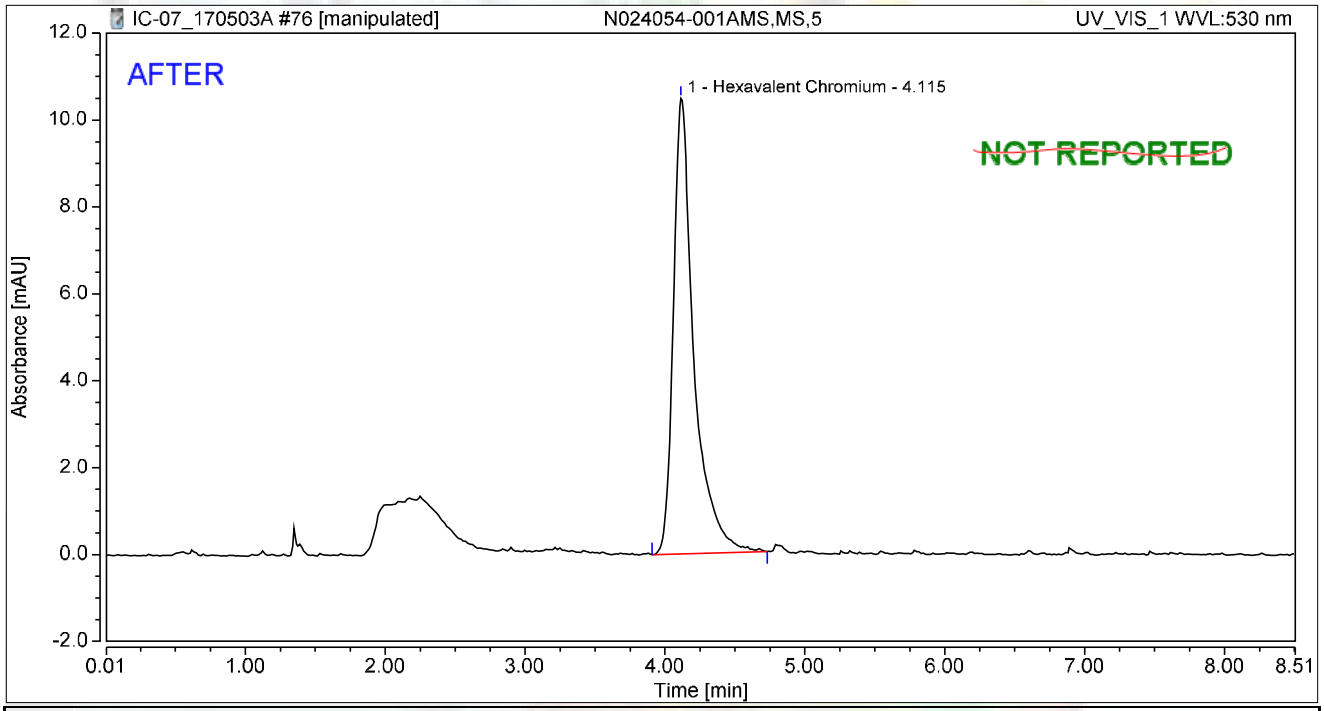
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024054-001AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	1.779	10.484	100.00	100.00	7.2937
Total:			**1.779**	**10.484**	**100.00**	**100.00**	

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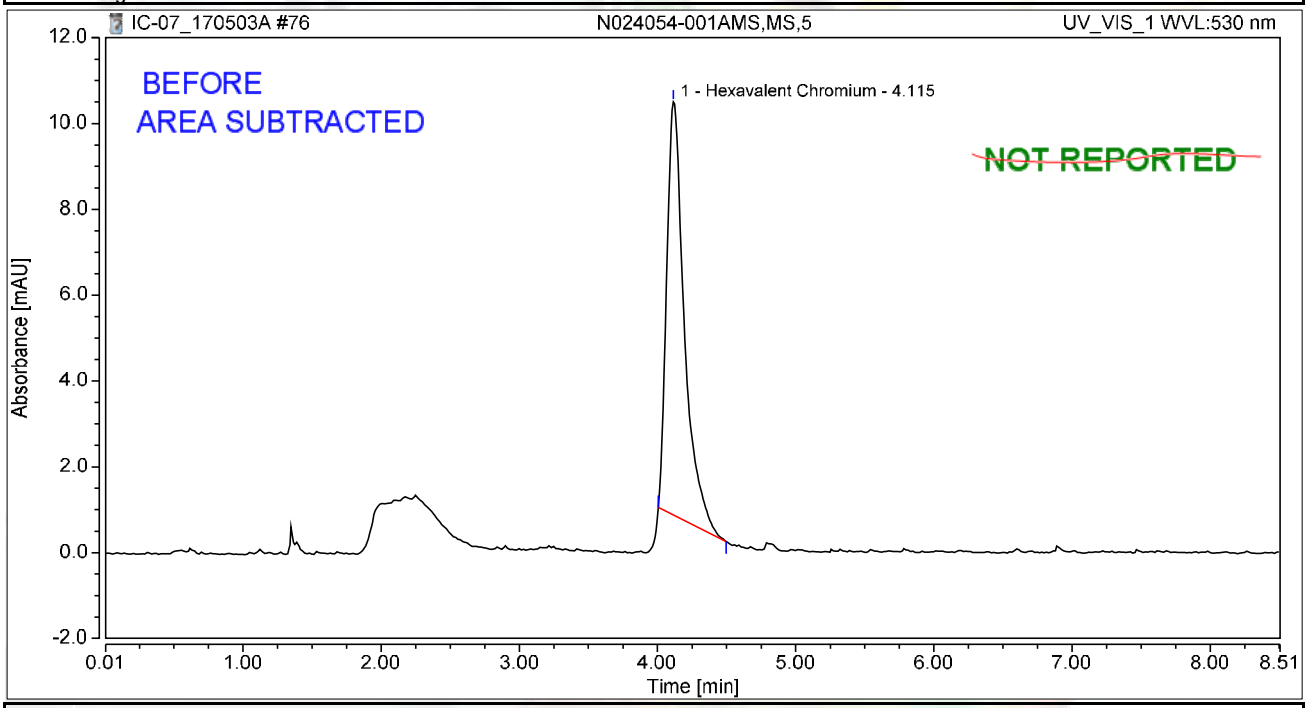
Chromatogram and Results

Injection Details

Injection Name:	**N024054-001AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 19:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	1.426	9.617	100.00	100.00	5.8472
Total:			**1.426**	**9.617**	**100.00**	**100.00**	

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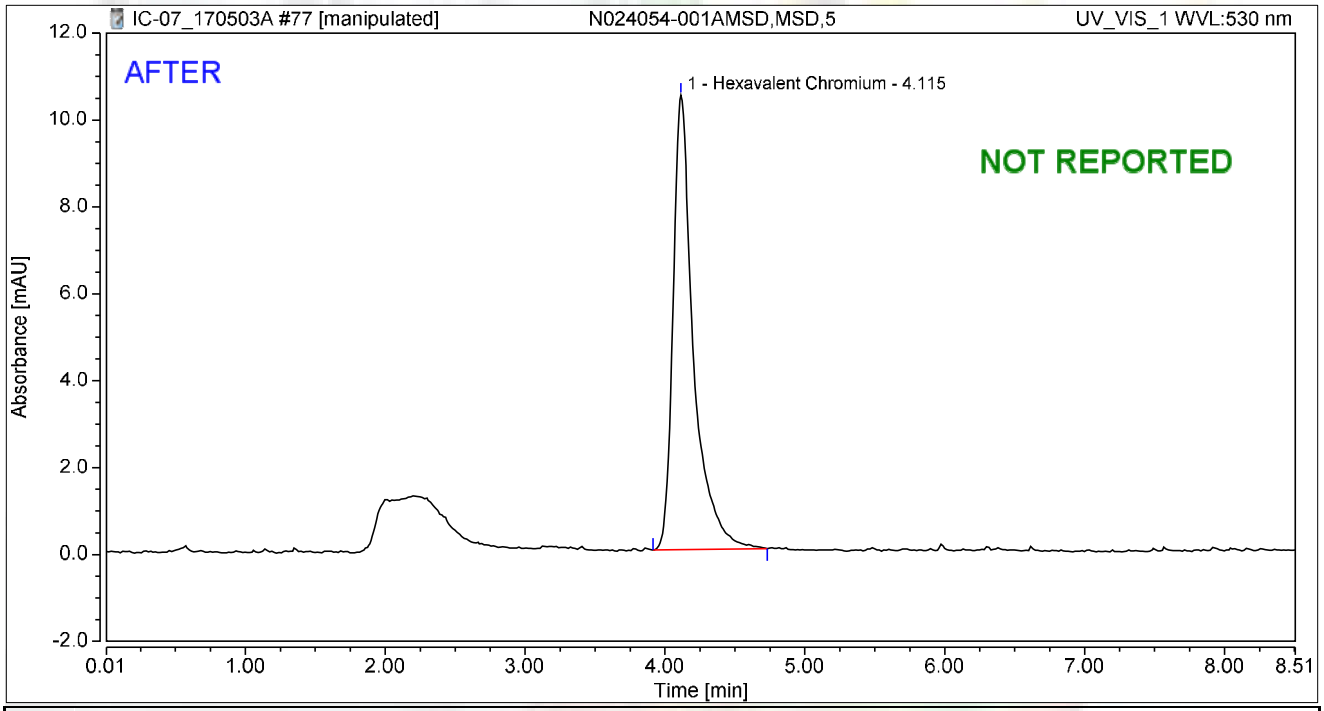
Chromatogram and Results

Injection Details

Injection Name:	**N024054-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	1.767	10.463	100.00	100.00	7.2464
Total:			**1.767**	**10.463**	**100.00**	**100.00**	

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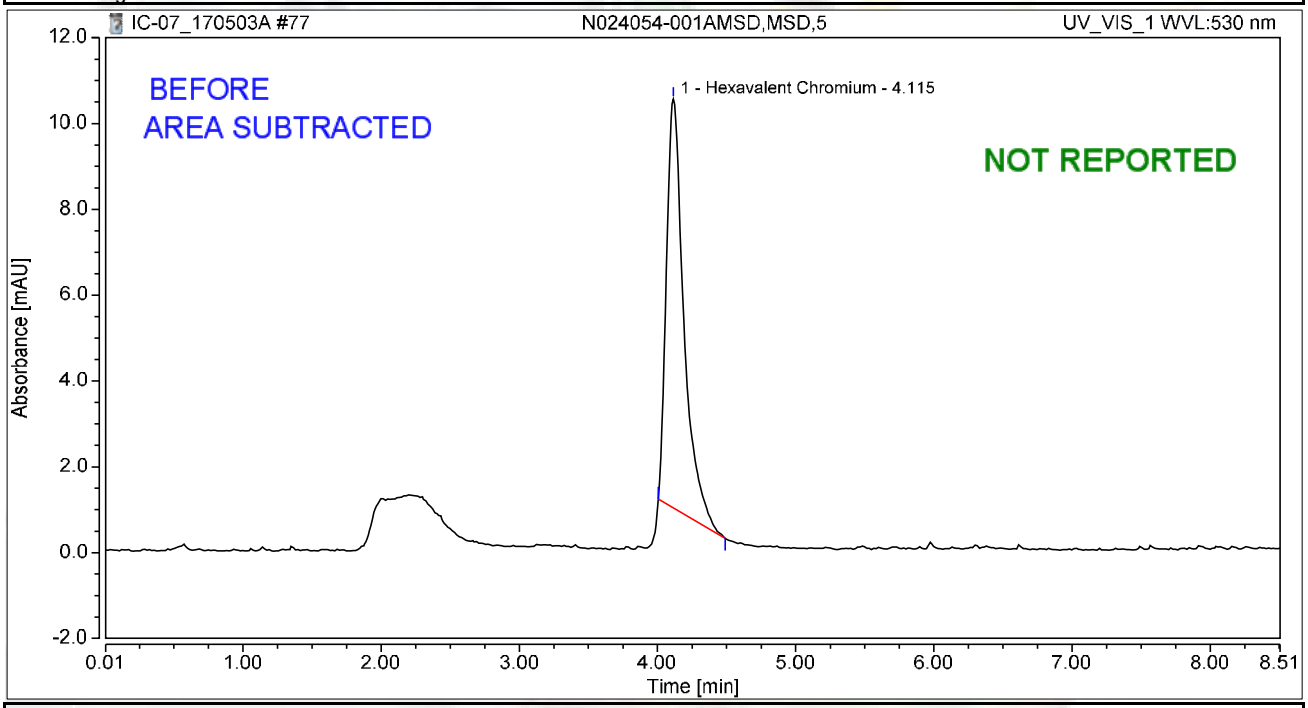
Chromatogram and Results

Injection Details

Injection Name:	**N024054-001AMSD,MSD,5**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	1.396	9.526	100.00	100.00	5.7243
Total:			**1.396**	**9.526**	**100.00**	**100.00**	

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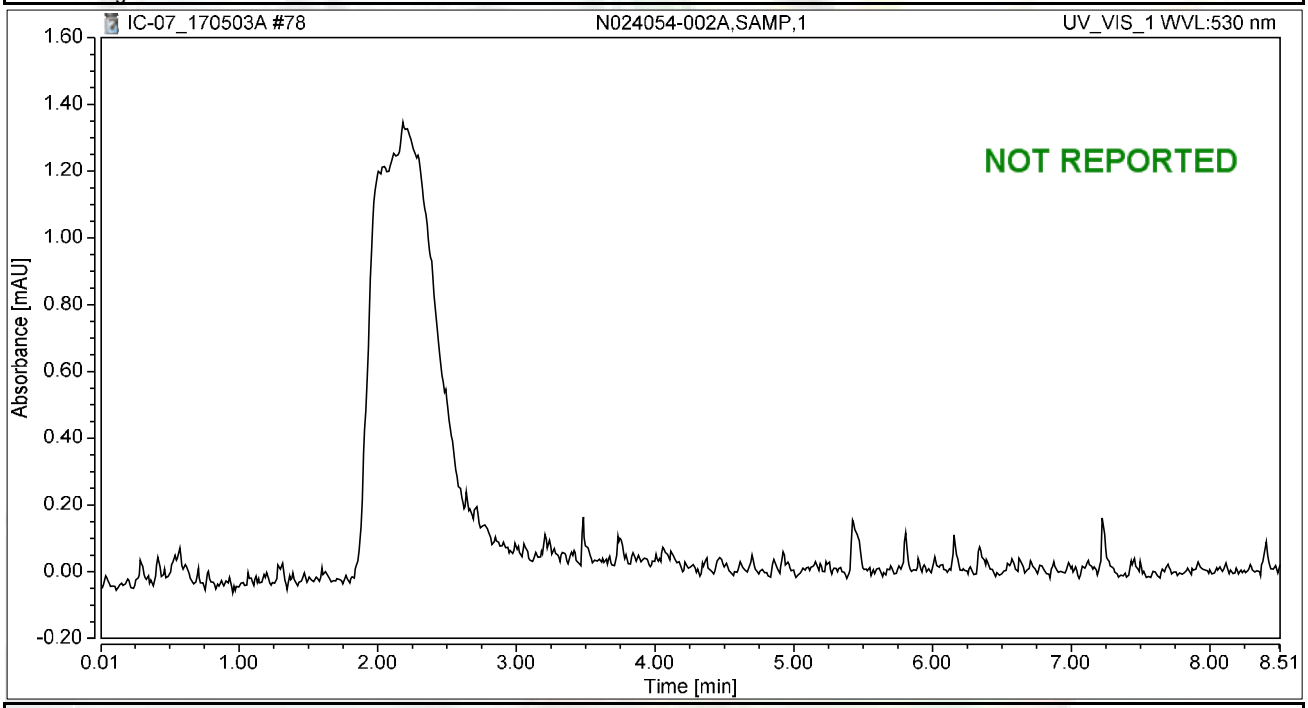
Chromatogram and Results

Injection Details

Injection Name:	**N024054-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

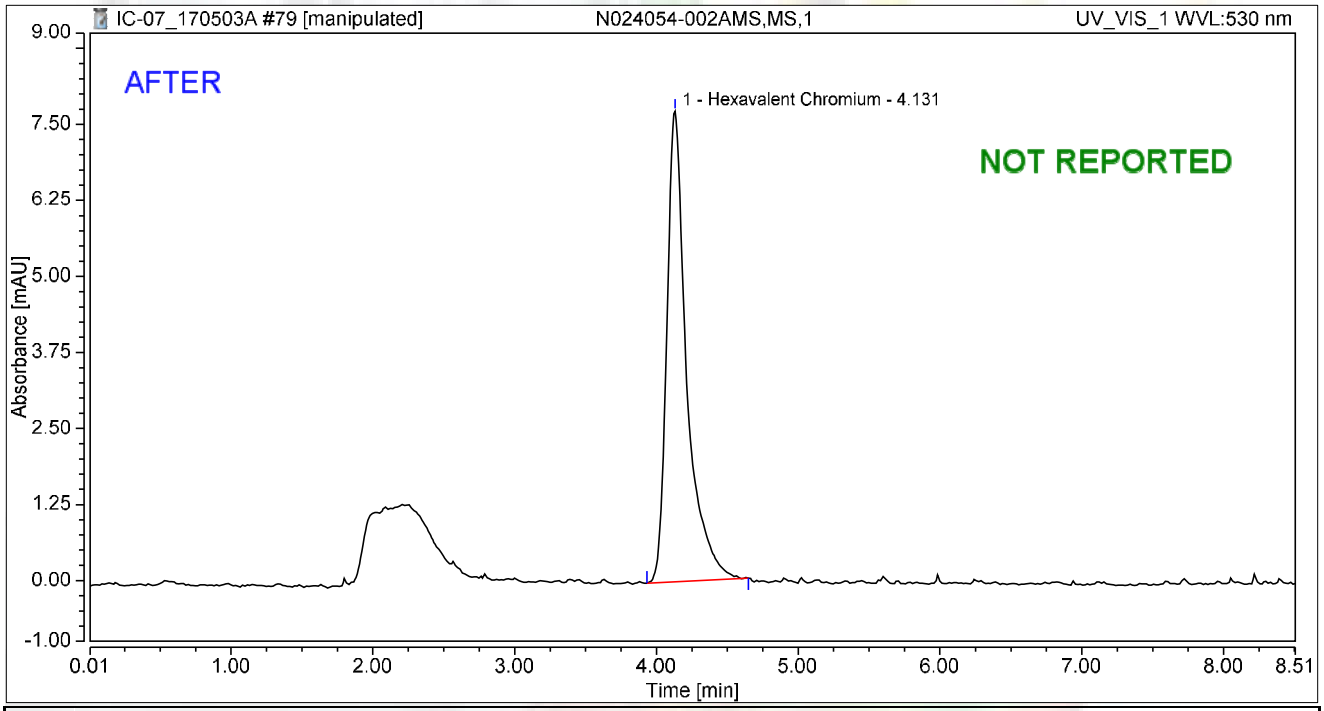
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024054-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.257	7.733	100.00	100.00	5.1548
Total:			**1.257**	**7.733**	**100.00**	**100.00**	

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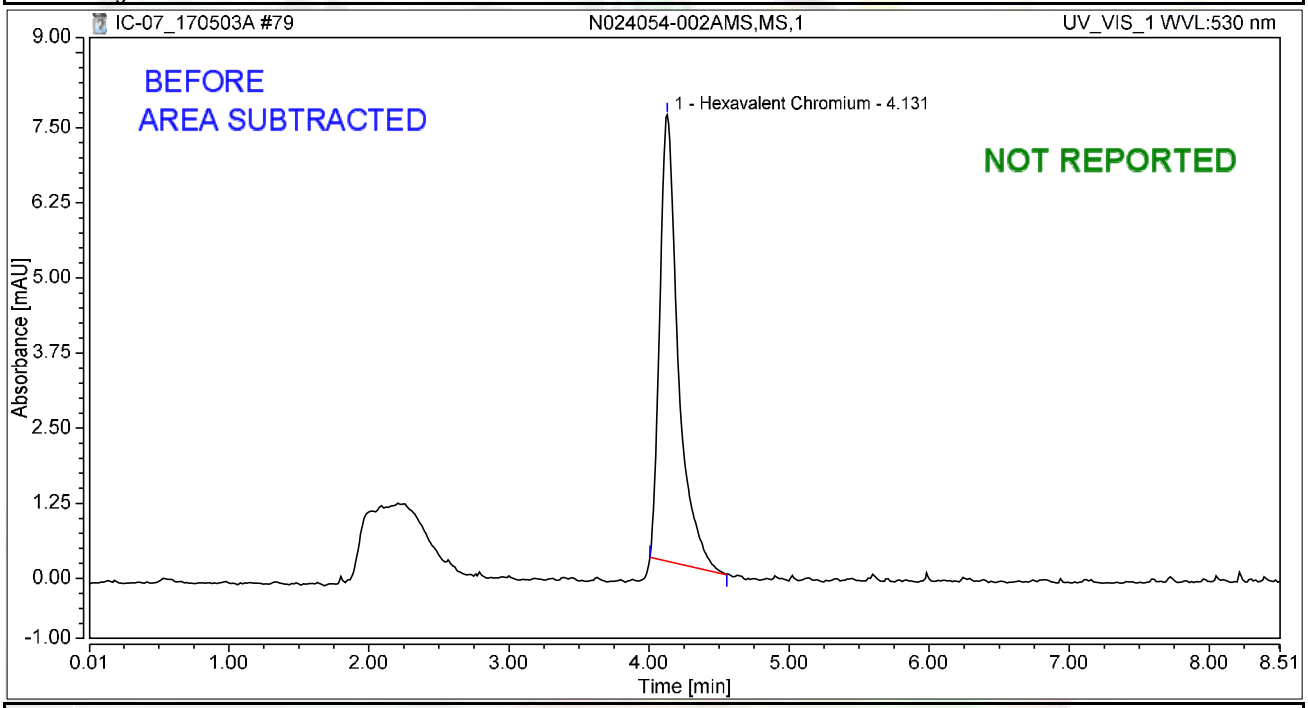
Chromatogram and Results

Injection Details

Injection Name:	**N024054-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.135	7.430	100.00	100.00	4.6542
Total:			**1.135**	**7.430**	**100.00**	**100.00**	

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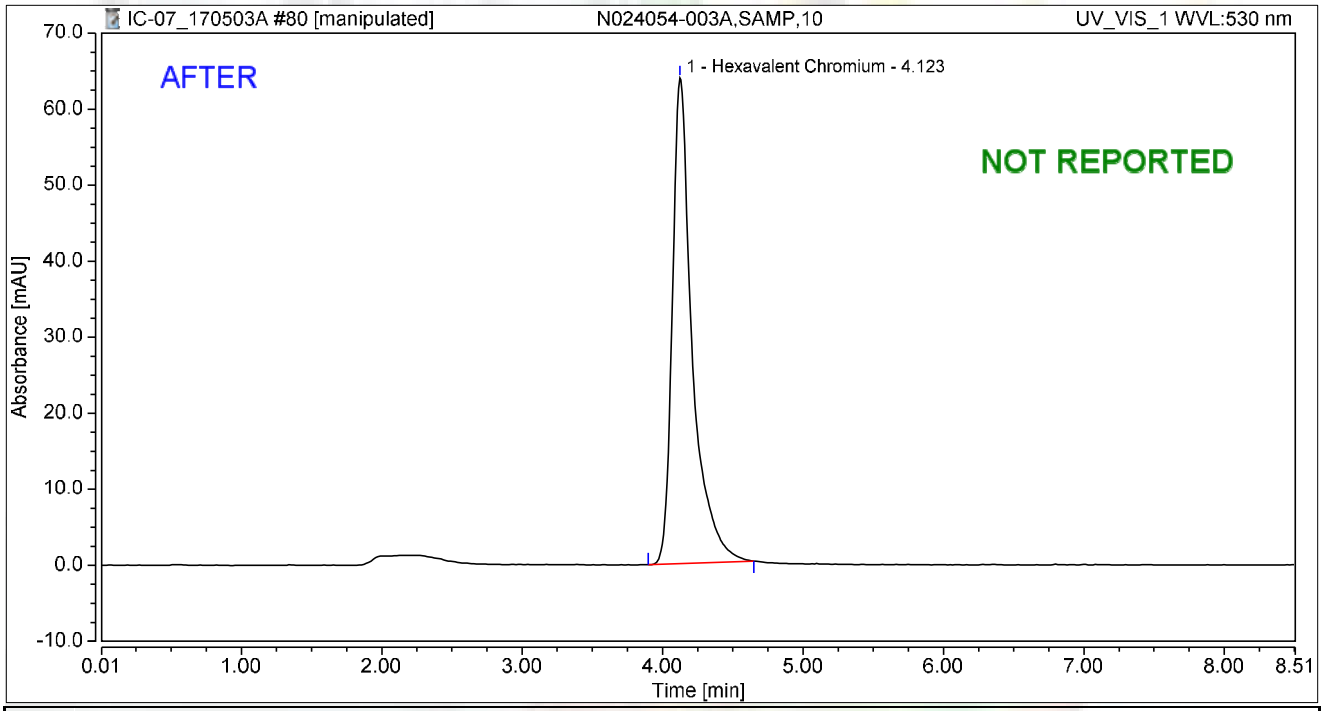
Chromatogram and Results

Injection Details

Injection Name:	**N024054-003A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	10.494	63.872	100.00	100.00	43.0268
Total:			**10.494**	**63.872**	**100.00**	**100.00**	

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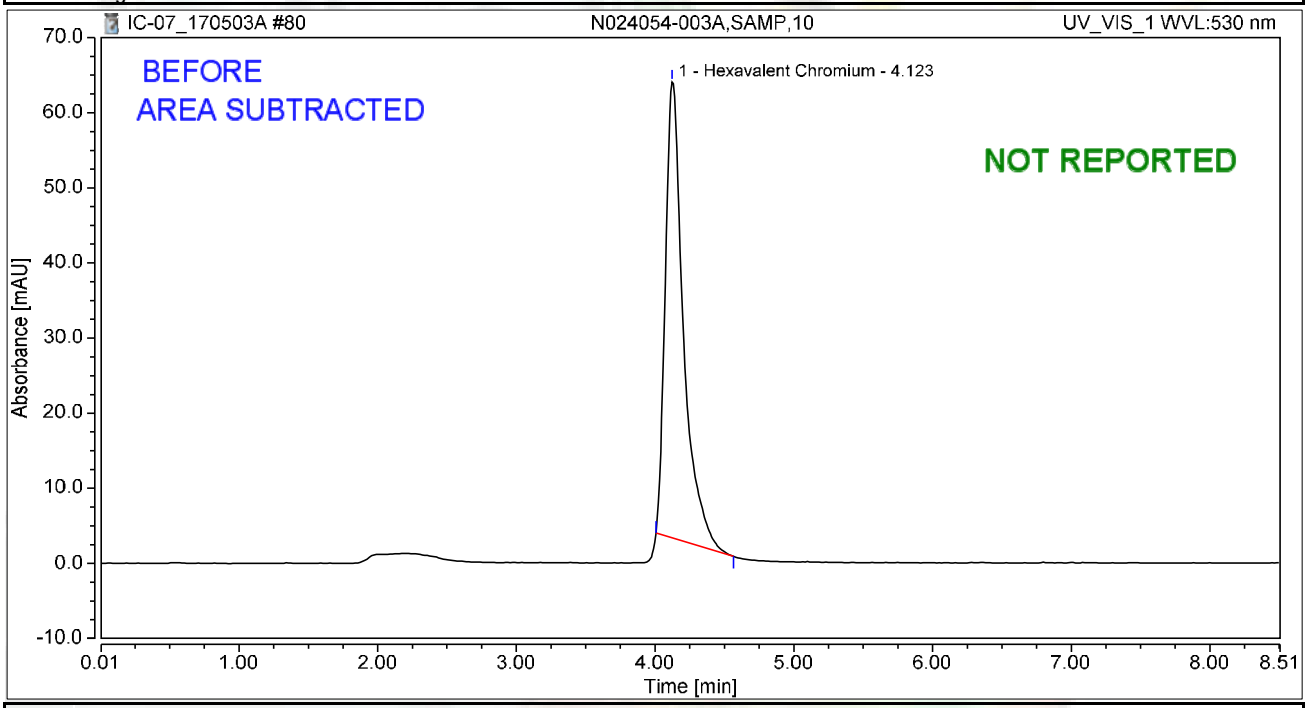
Chromatogram and Results

Injection Details

Injection Name:	**N024054-003A,SAMP,10**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	9.204	60.710	100.00	100.00	37.7392
Total:			**9.204**	**60.710**	**100.00**	**100.00**	

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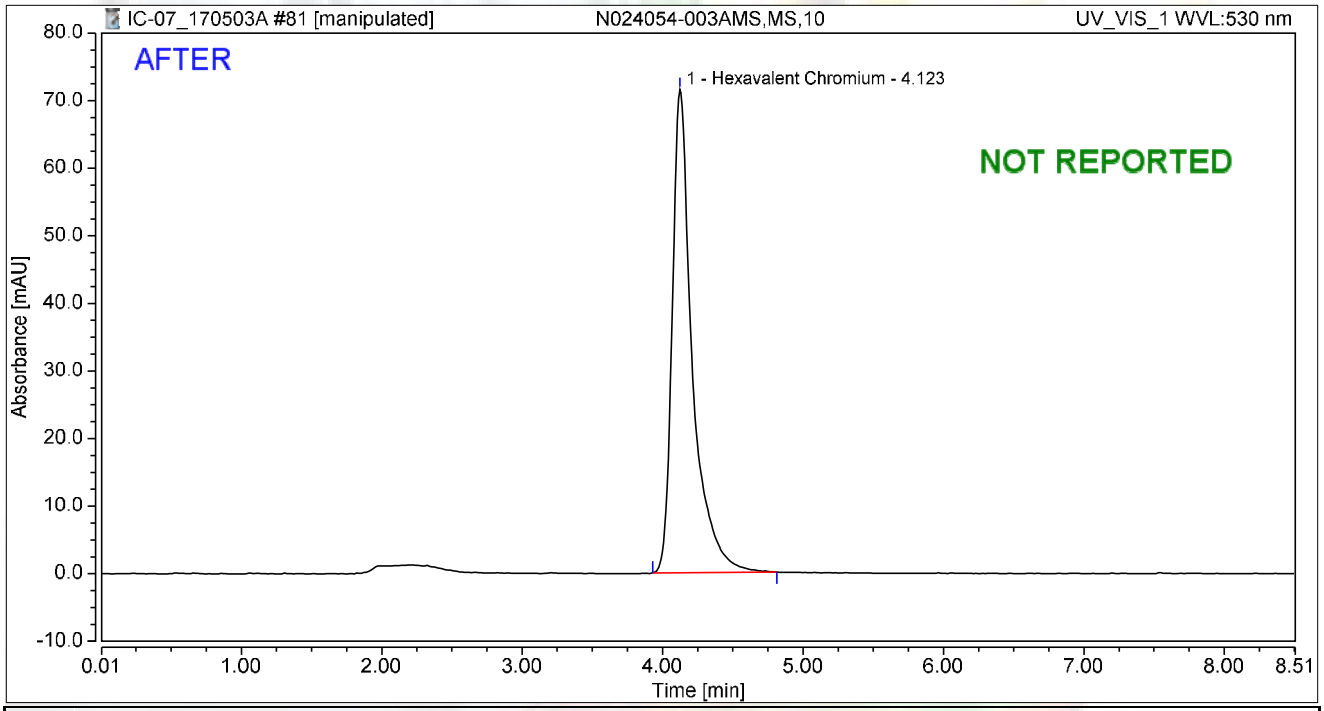
Chromatogram and Results

Injection Details

Injection Name:	**N024054-003AMS,MS,10**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	11.841	71.485	100.00	100.00	48.5502
Total:			**11.841**	**71.485**	**100.00**	**100.00**	

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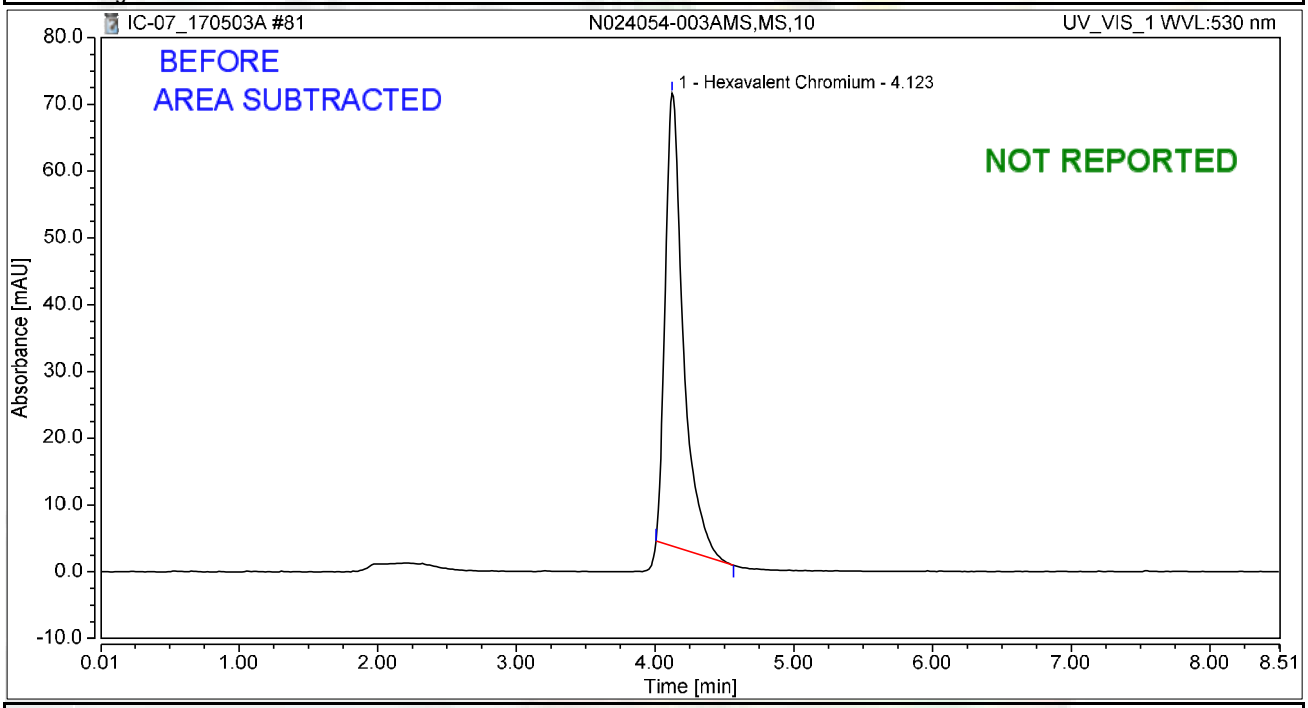
Chromatogram and Results

Injection Details

Injection Name:	**N024054-003AMS,MS,10**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	10.233	67.786	100.00	100.00	41.9588
Total:			**10.233**	**67.786**	**100.00**	**100.00**	

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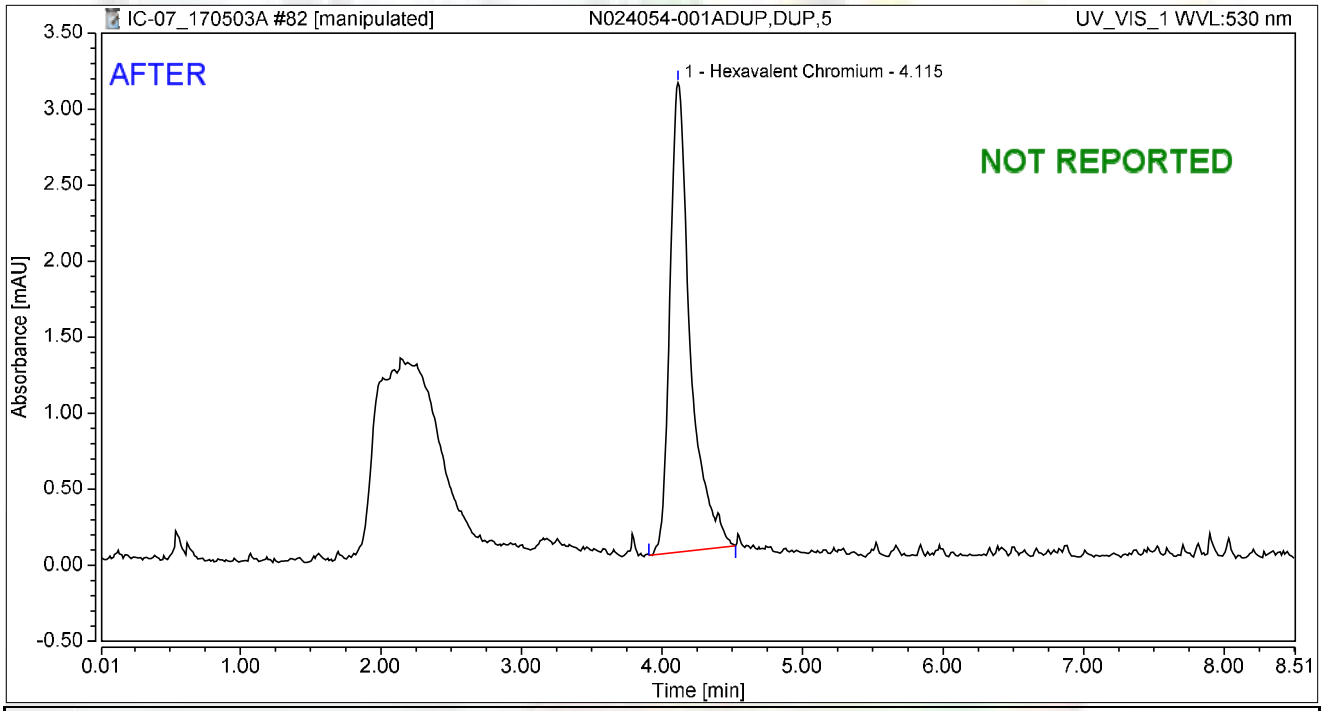
Chromatogram and Results

Injection Details

Injection Name:	**N024054-001ADUP,DUP,5**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.519	3.087	100.00	100.00	2.1264
Total:			**0.519**	**3.087**	**100.00**	**100.00**	

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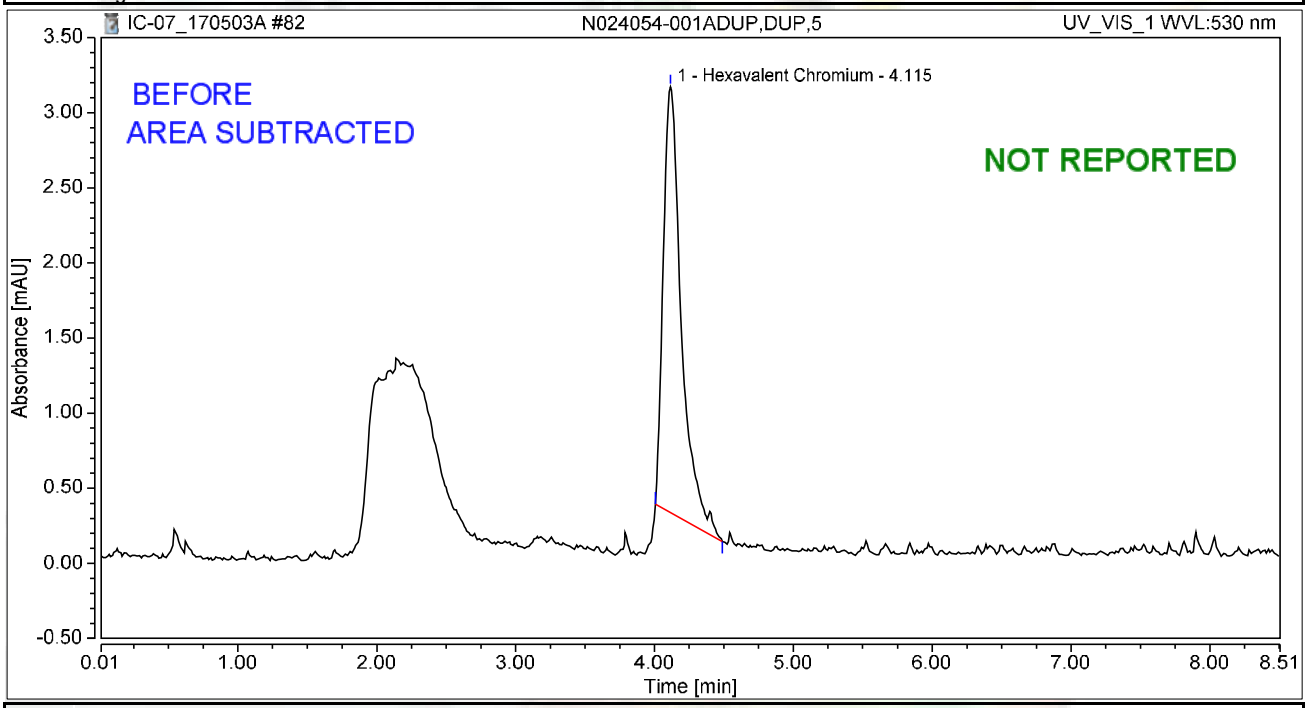
Chromatogram and Results

Injection Details

Injection Name:	**N024054-001ADUP,DUP,5**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 20:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.429	2.834	100.00	100.00	1.7570
Total:			**0.429**	**2.834**	**100.00**	**100.00**	

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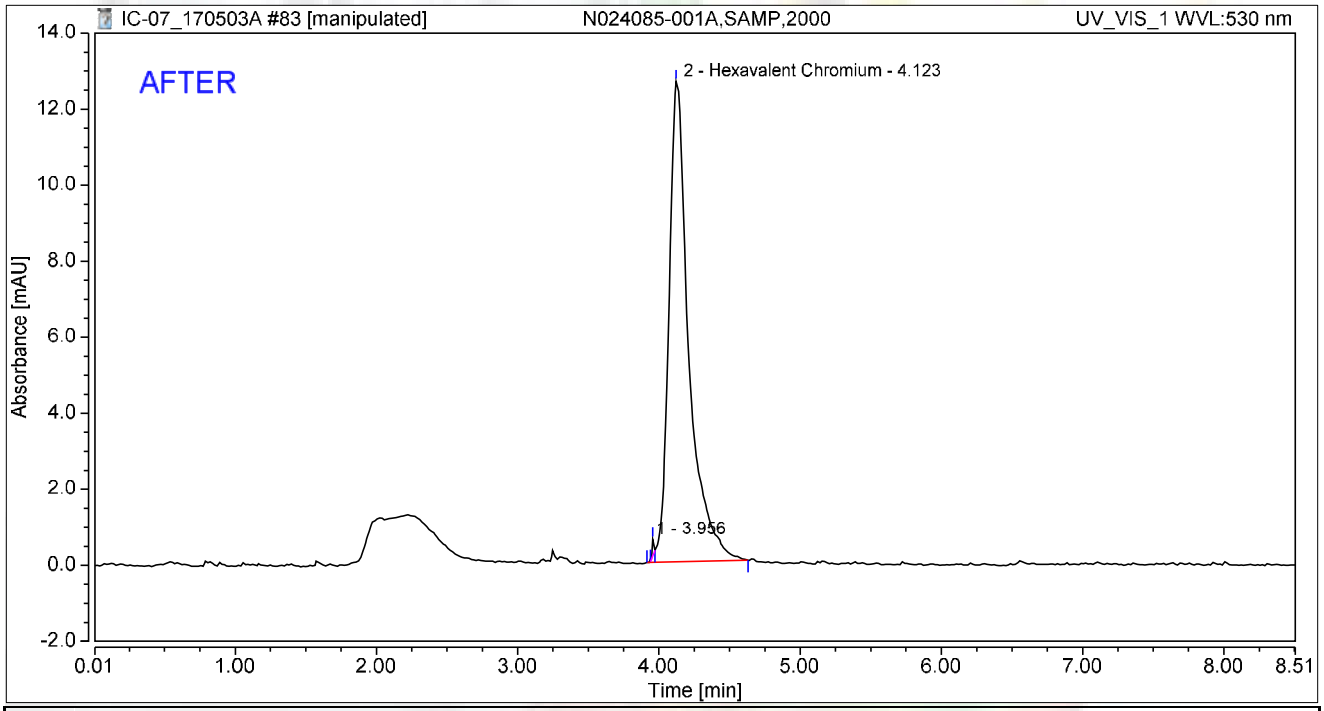
Chromatogram and Results

Injection Details

Injection Name:	**N024085-001A,SAMP,2000**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.956	0.006	0.431	0.29	3.30	n.a.
2	Hexavalent Chromium	4.123	2.067	12.628	99.71	96.70	8.4772
Total:			**2.074**	**13.059**	**100.00**	**100.00**	

rba 5/7/2017

Reviewed by: 5/10/2017

My first report integration

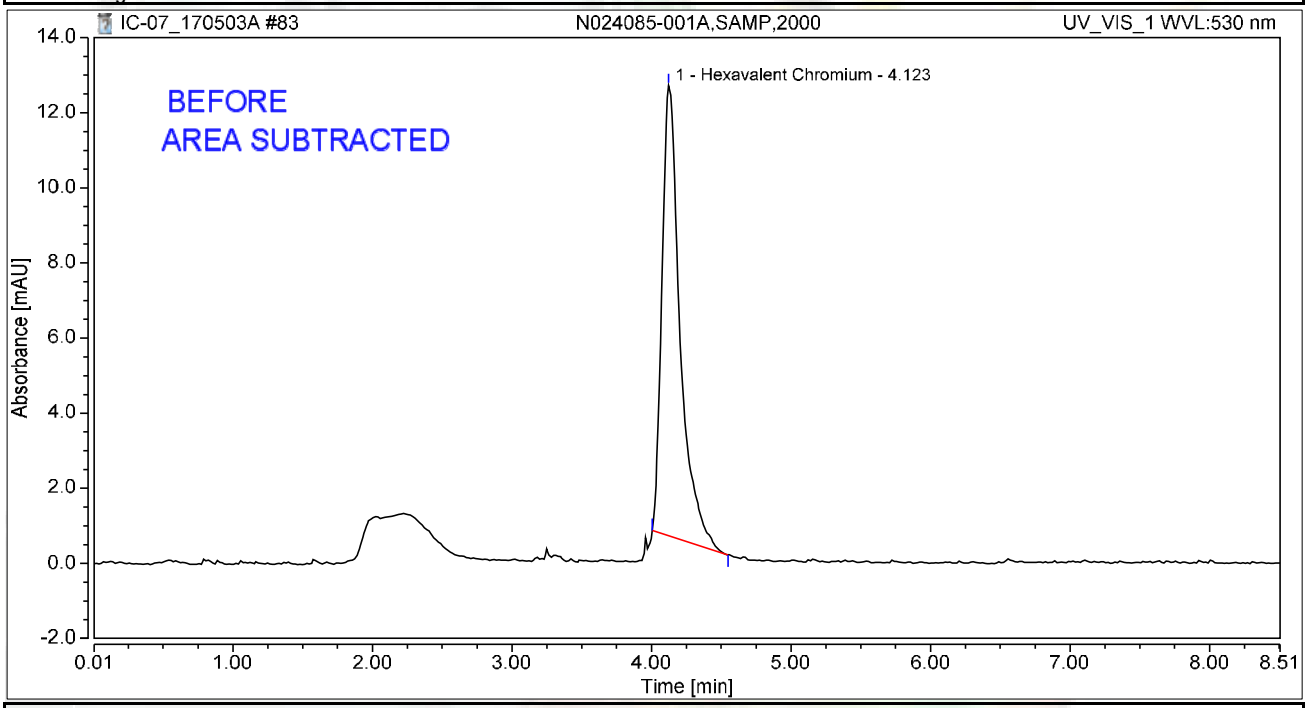
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024085-001A,SAMP,2000**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.802	11.985	100.00	100.00	7.3878
Total:			**1.802**	**11.985**	**100.00**	**100.00**	

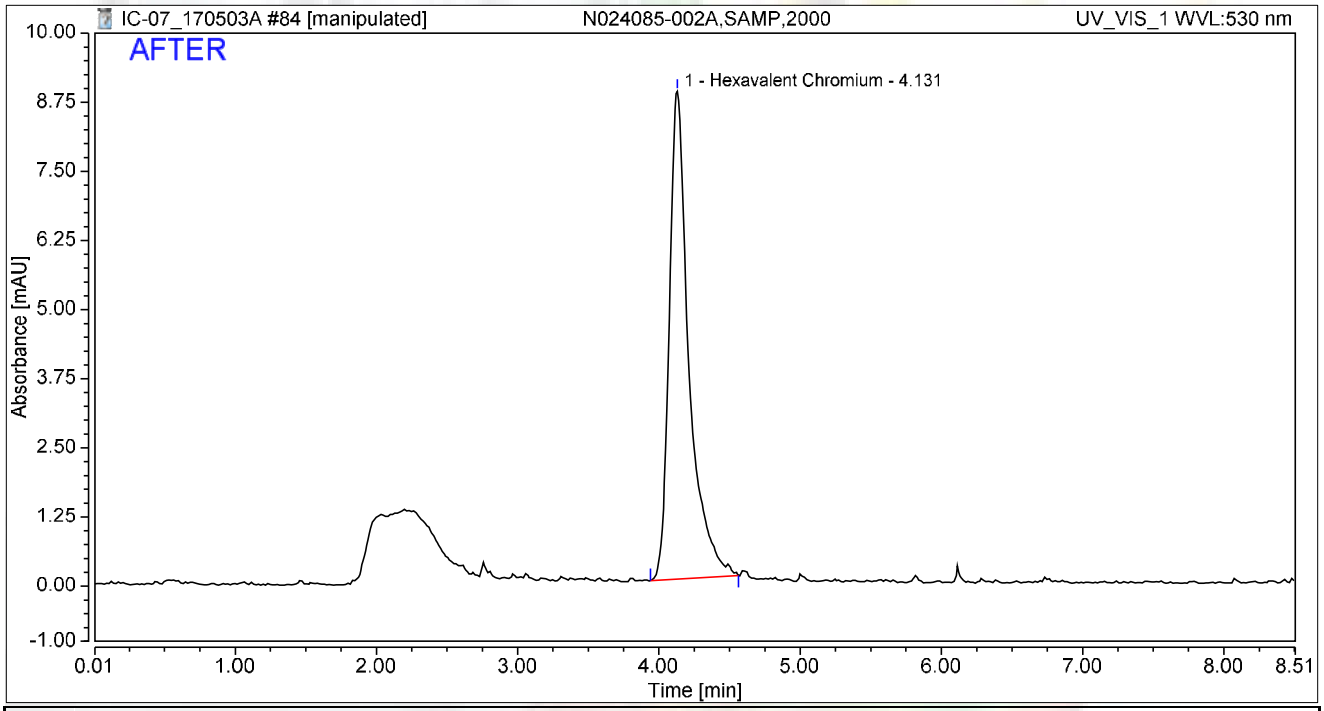
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024085-002A,SAMP,2000**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.425	8.819	100.00	100.00	5.8411
Total:			**1.425**	**8.819**	**100.00**	**100.00**	

rba 5/7/2017

Reviewed by: Nancy 5/10/2017

My first report/integration

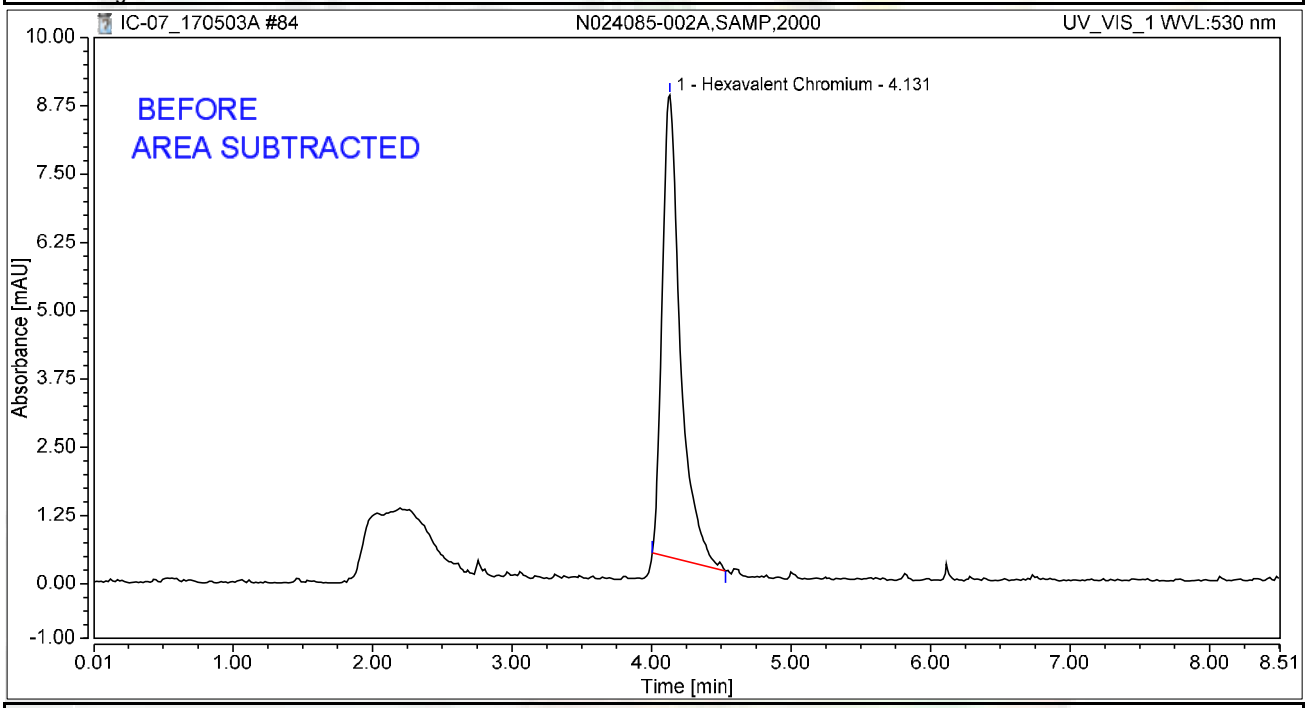
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024085-002A,SAMP,2000**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.282	8.456	100.00	100.00	5.2545
Total:			**1.282**	**8.456**	**100.00**	**100.00**	

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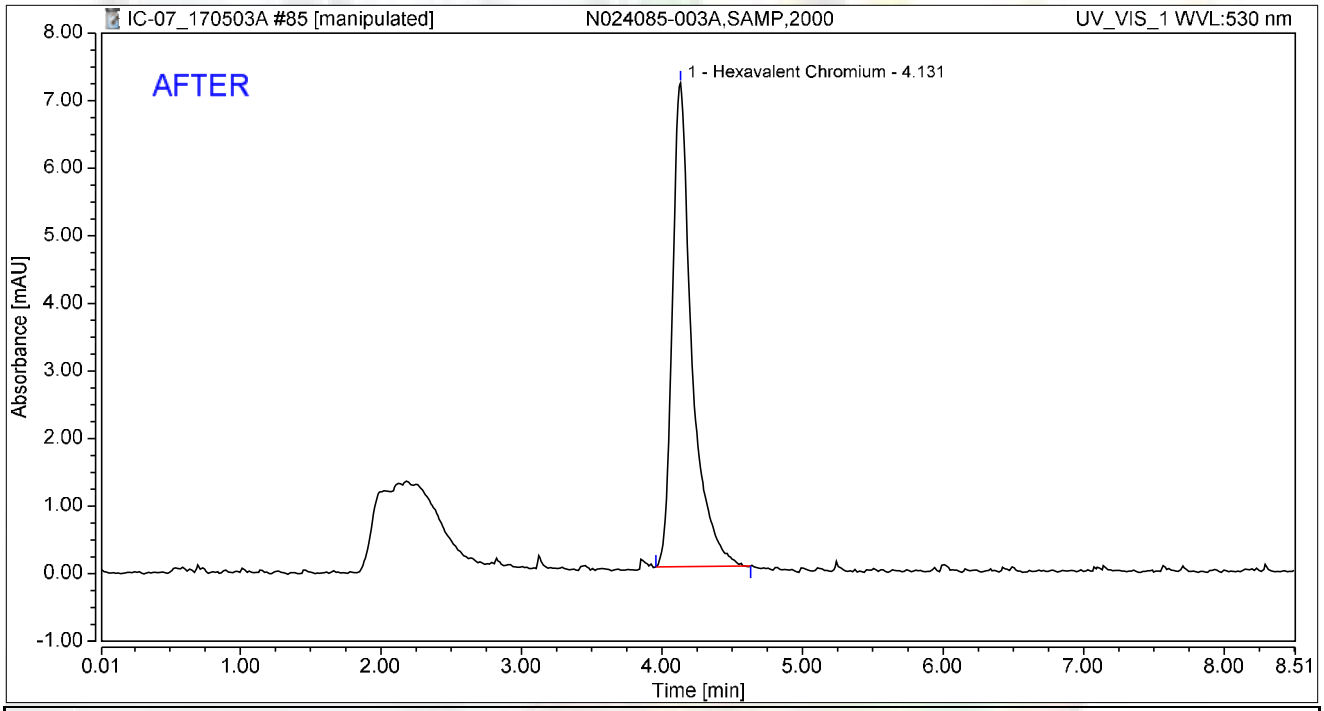
Chromatogram and Results

Injection Details

Injection Name:	**N024085-003A,SAMP,2000**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.149	7.153	100.00	100.00	4.7094
Total:			**1.149**	**7.153**	**100.00**	**100.00**	

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Reviewed by: Nancy 5/10/2017

My first report/Integration

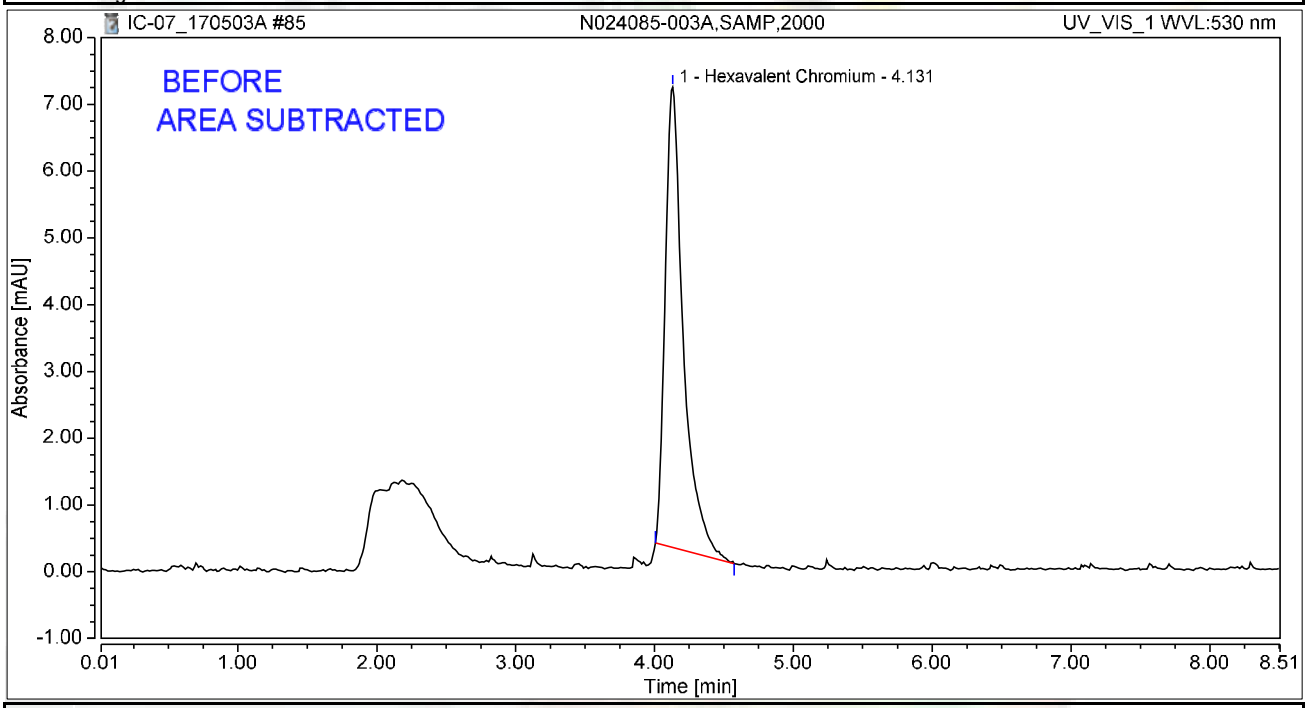
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024085-003A,SAMP,2000**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.047	6.894	100.00	100.00	4.2931
Total:			**1.047**	**6.894**	**100.00**	**100.00**	

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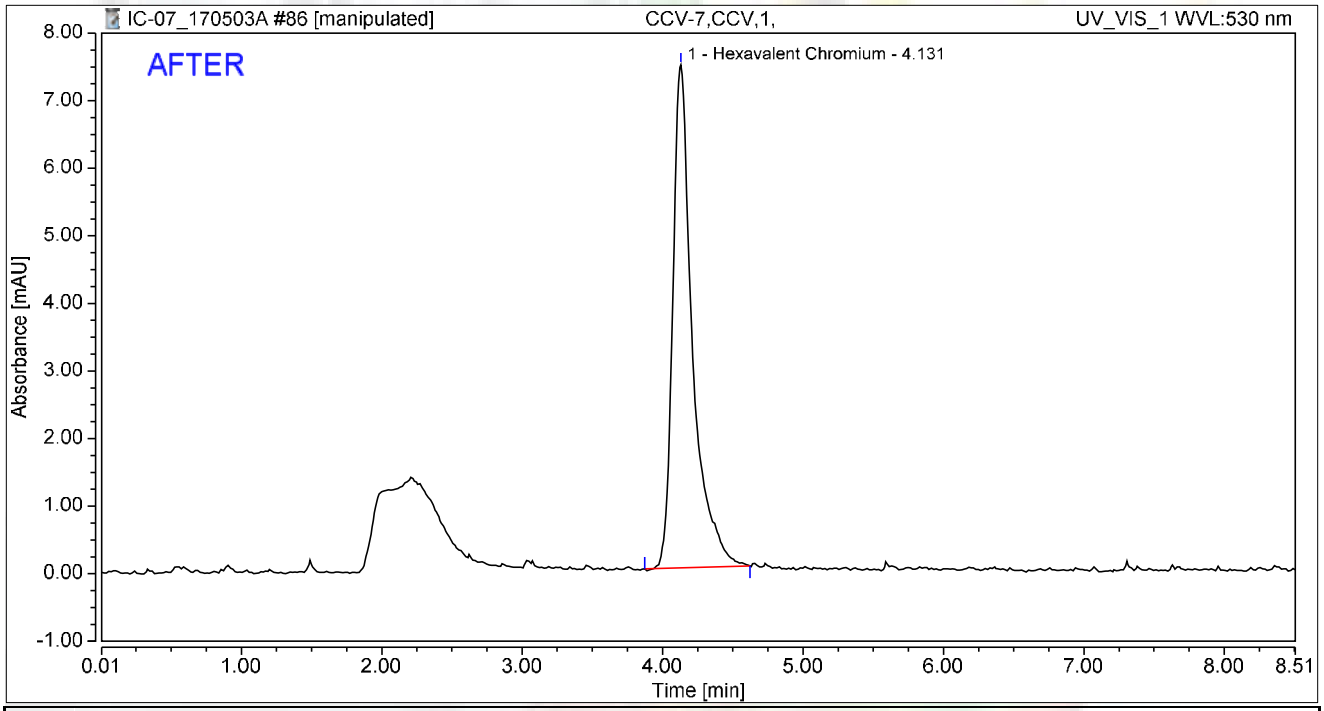
Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.213	7.442	100.00	100.00	4.9744
Total:			**1.213**	**7.442**	**100.00**	**100.00**	

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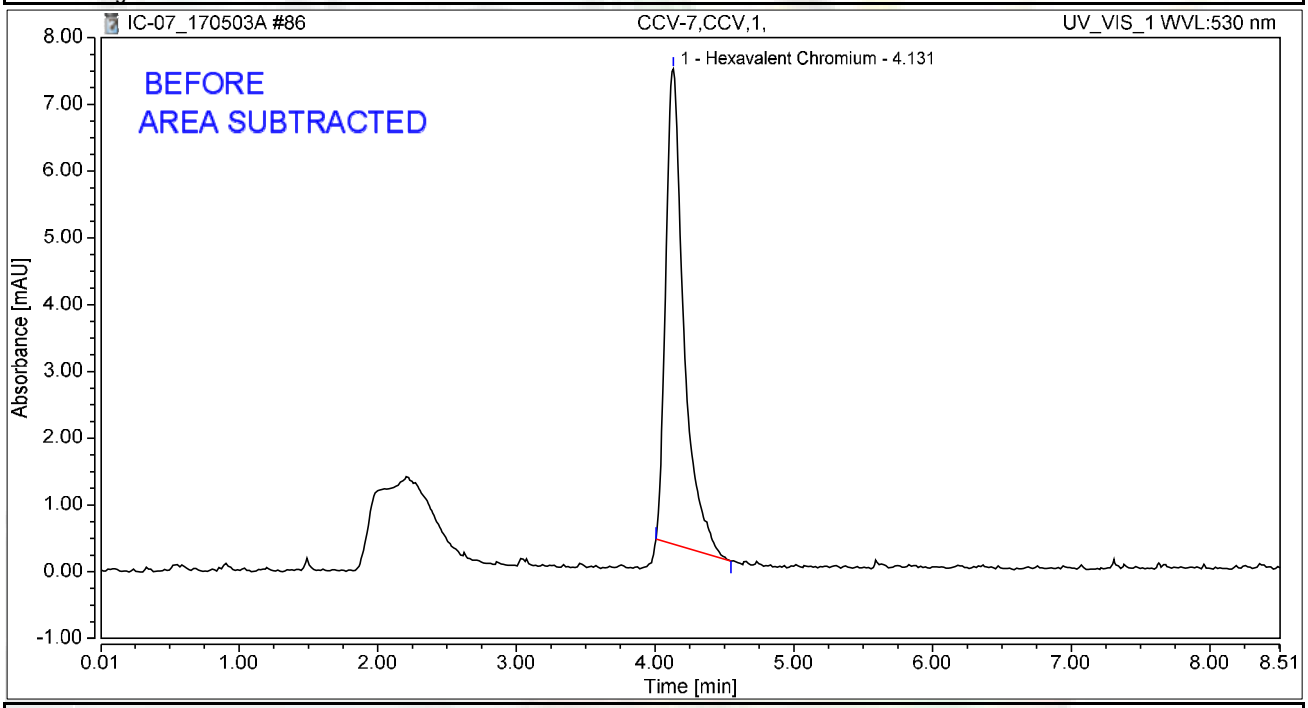
Reviewed by: Nancy 5/10/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.078	7.113	100.00	100.00	4.4218
Total:			**1.078**	**7.113**	**100.00**	**100.00**	

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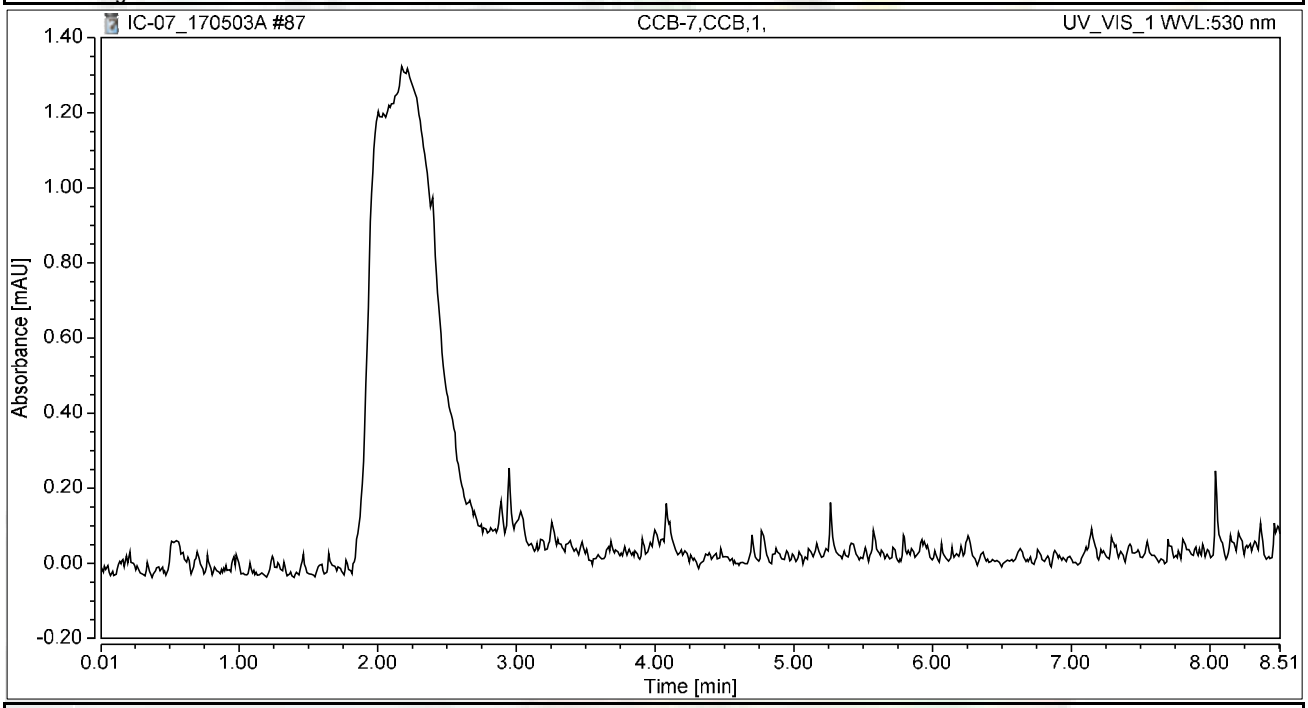
Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

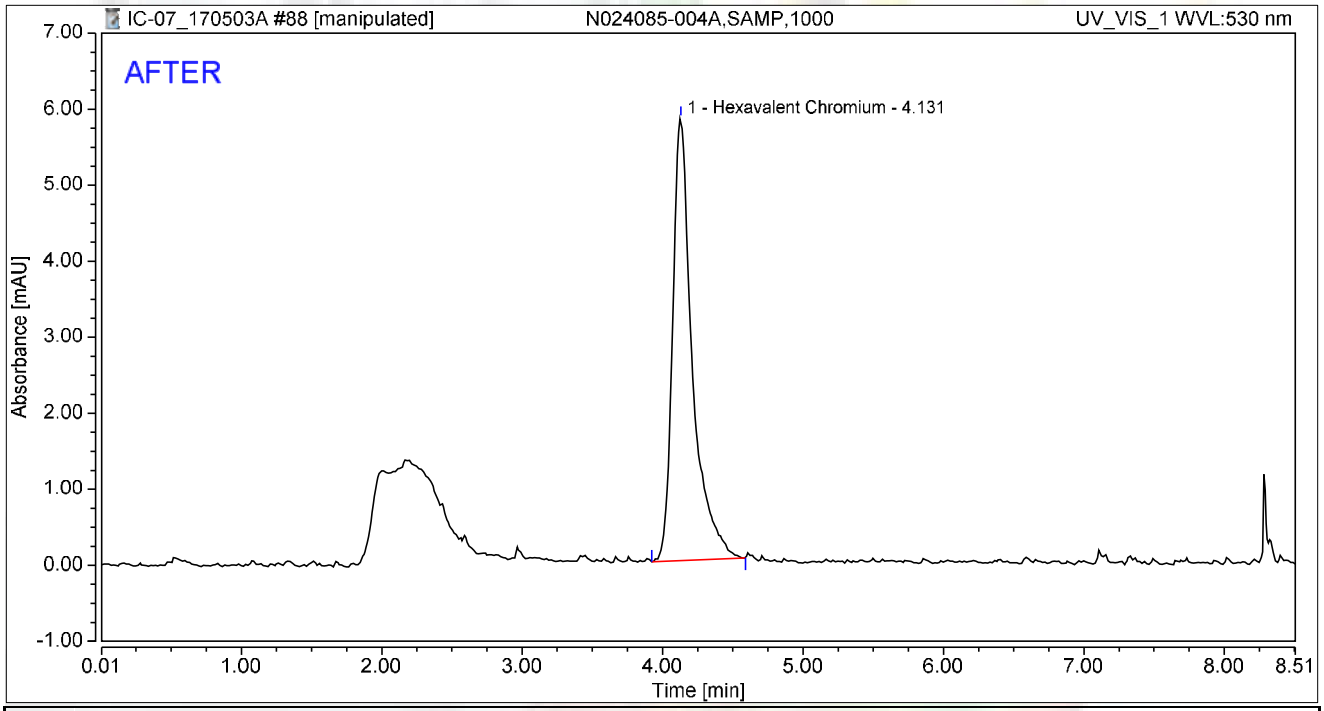
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024085-004A,SAMP,1000**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.948	5.816	100.00	100.00	3.8867
Total:			**0.948**	**5.816**	**100.00**	**100.00**	

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Reviewed by: Nancy 5/10/2017

My first report/integration

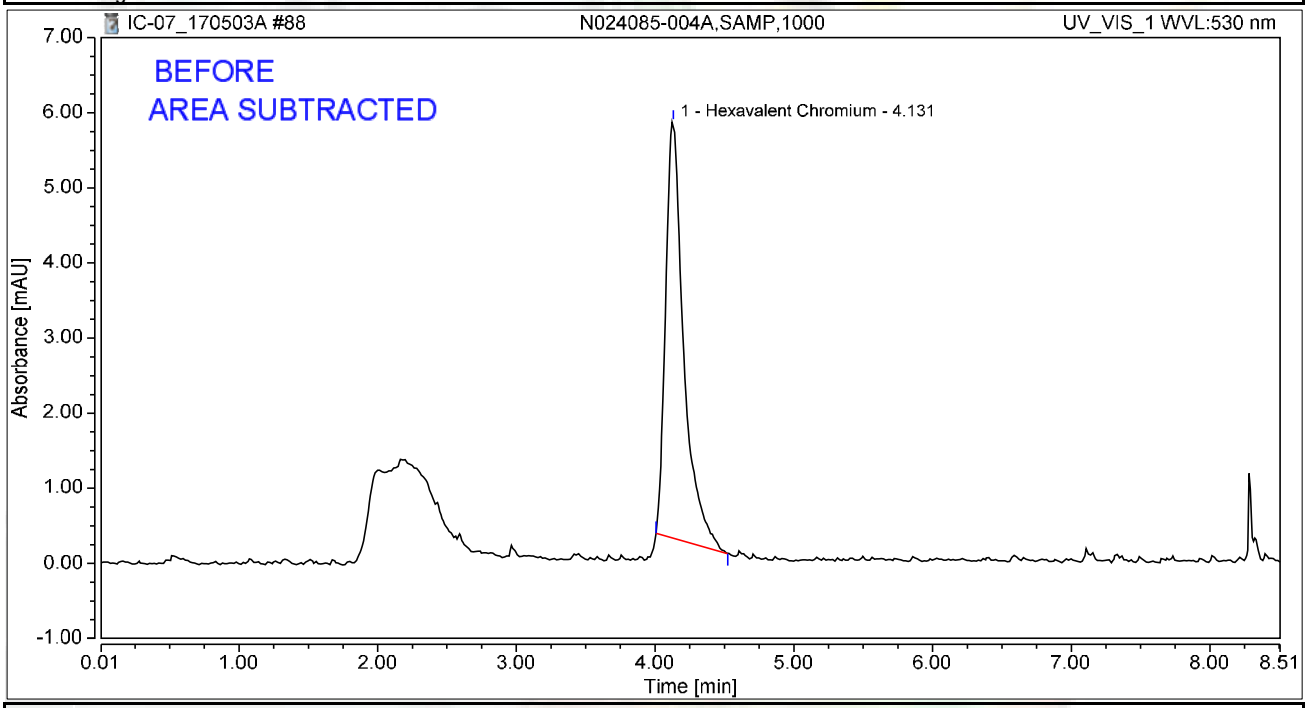
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024085-004A,SAMP,1000**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 21:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.841	5.544	100.00	100.00	3.4470
Total:			**0.841**	**5.544**	**100.00**	**100.00**	

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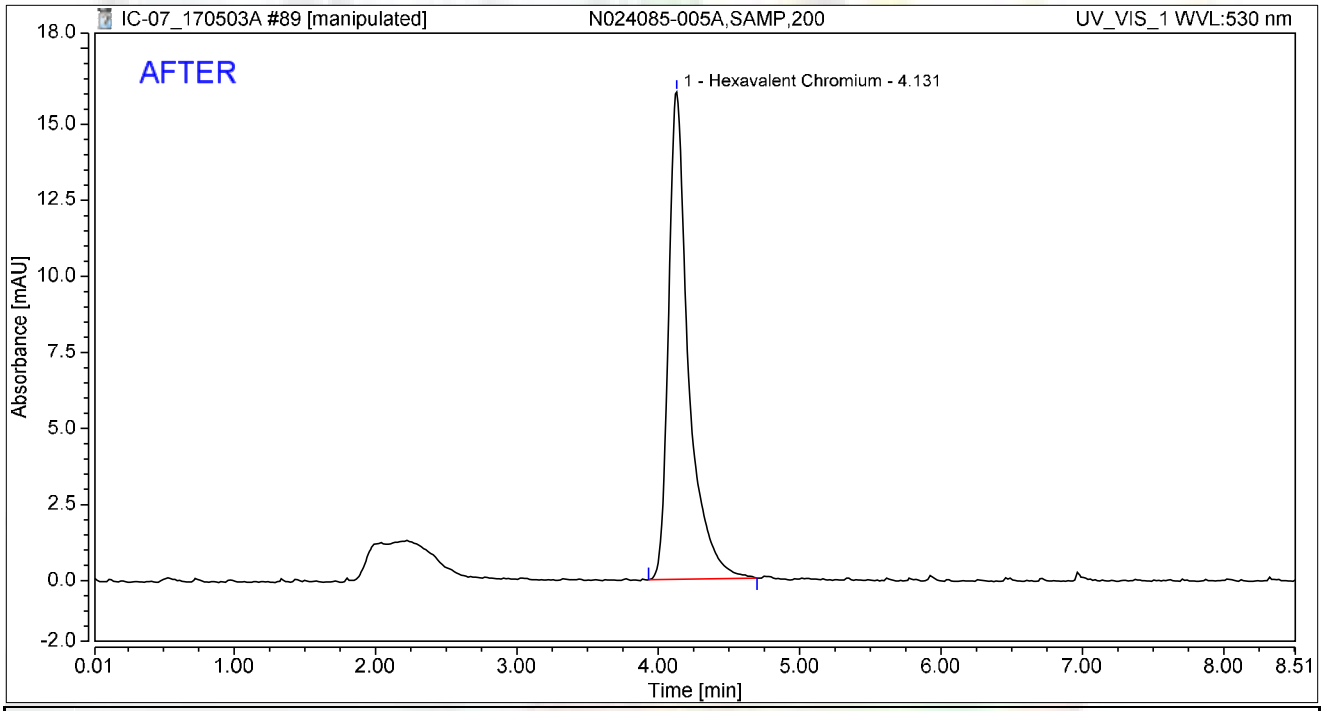
Chromatogram and Results

Injection Details

Injection Name:	**N024085-005A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.628	16.021	100.00	100.00	10.7766
Total:			**2.628**	**16.021**	**100.00**	**100.00**	

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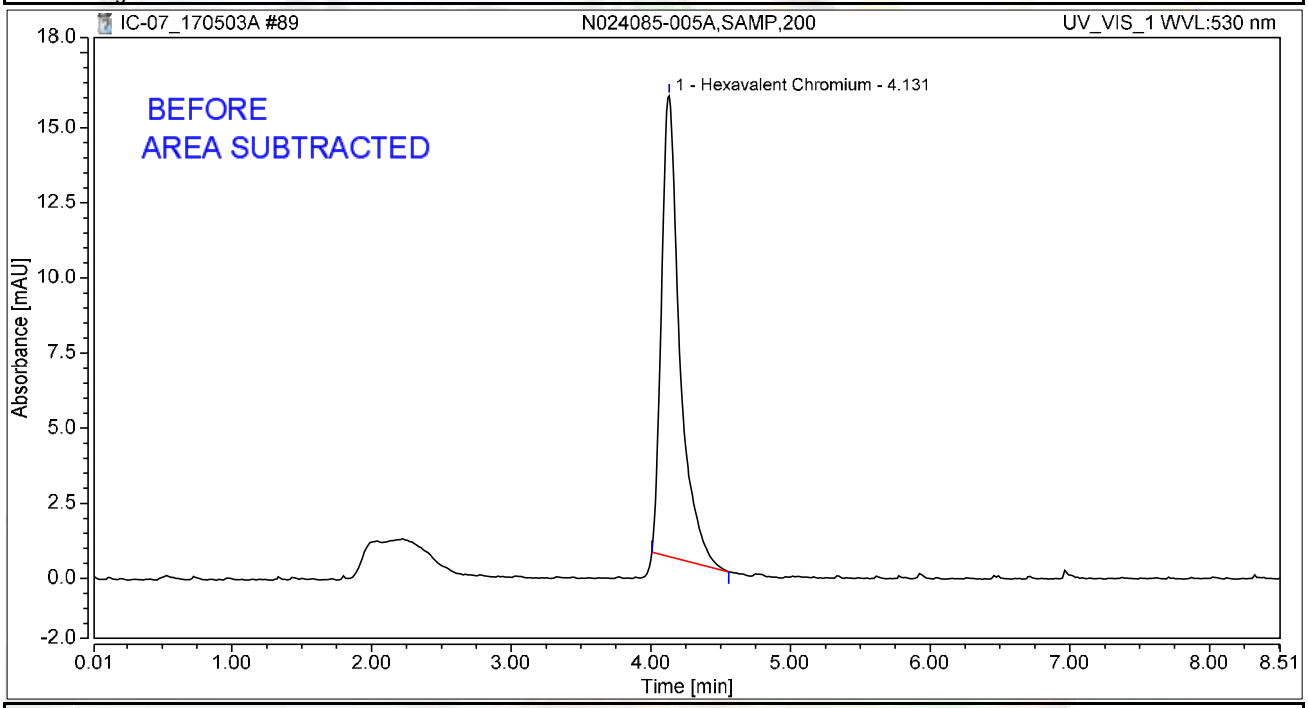
Chromatogram and Results

Injection Details

Injection Name:	**N024085-005A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.333	15.339	100.00	100.00	9.5662
Total:			**2.333**	**15.339**	**100.00**	**100.00**	

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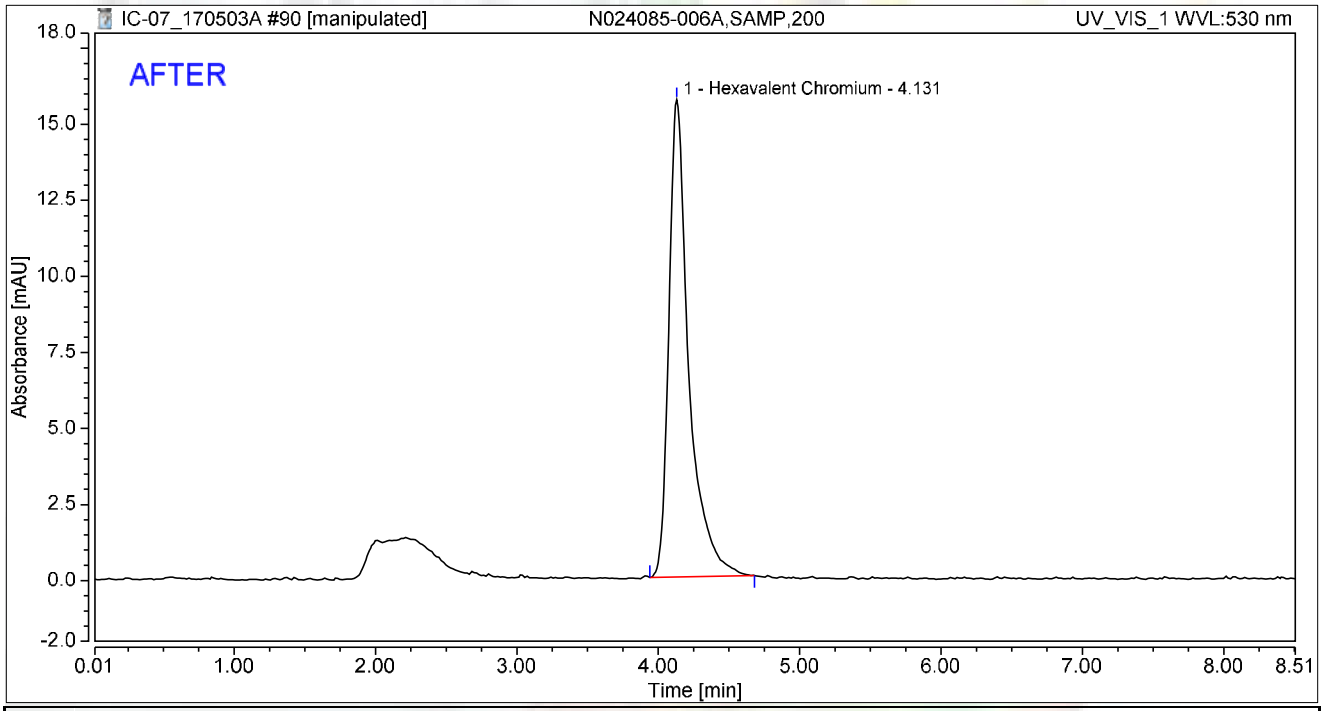
Chromatogram and Results

Injection Details

Injection Name:	**N024085-006A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.566	15.685	100.00	100.00	10.5205
Total:			**2.566**	**15.685**	**100.00**	**100.00**	

rba 5/7/2017

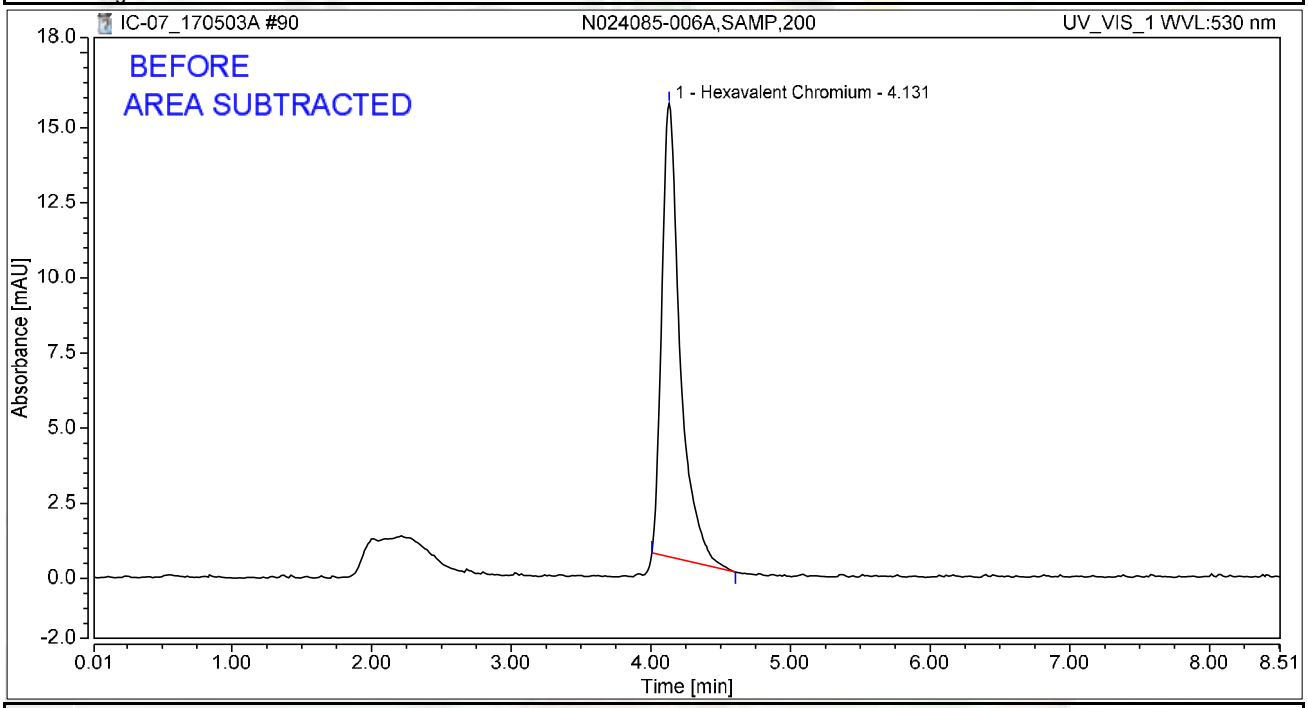
Reviewed by: Nancy 5/10/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024085-006A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.312	15.087	100.00	100.00	9.4792
Total:			**2.312**	**15.087**	**100.00**	**100.00**	

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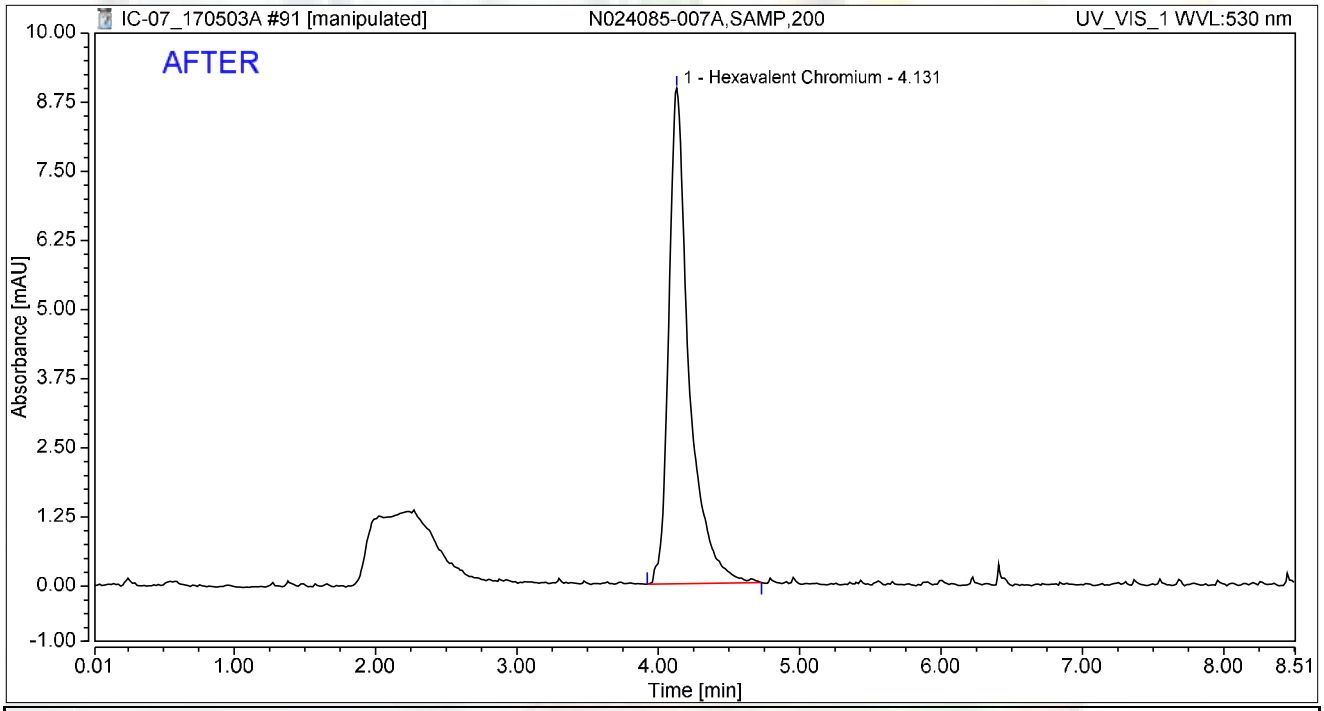
Chromatogram and Results

Injection Details

Injection Name:	**N024085-007A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.489	8.960	100.00	100.00	6.1034
Total:			**1.489**	**8.960**	**100.00**	**100.00**	

rba 5/7/2017

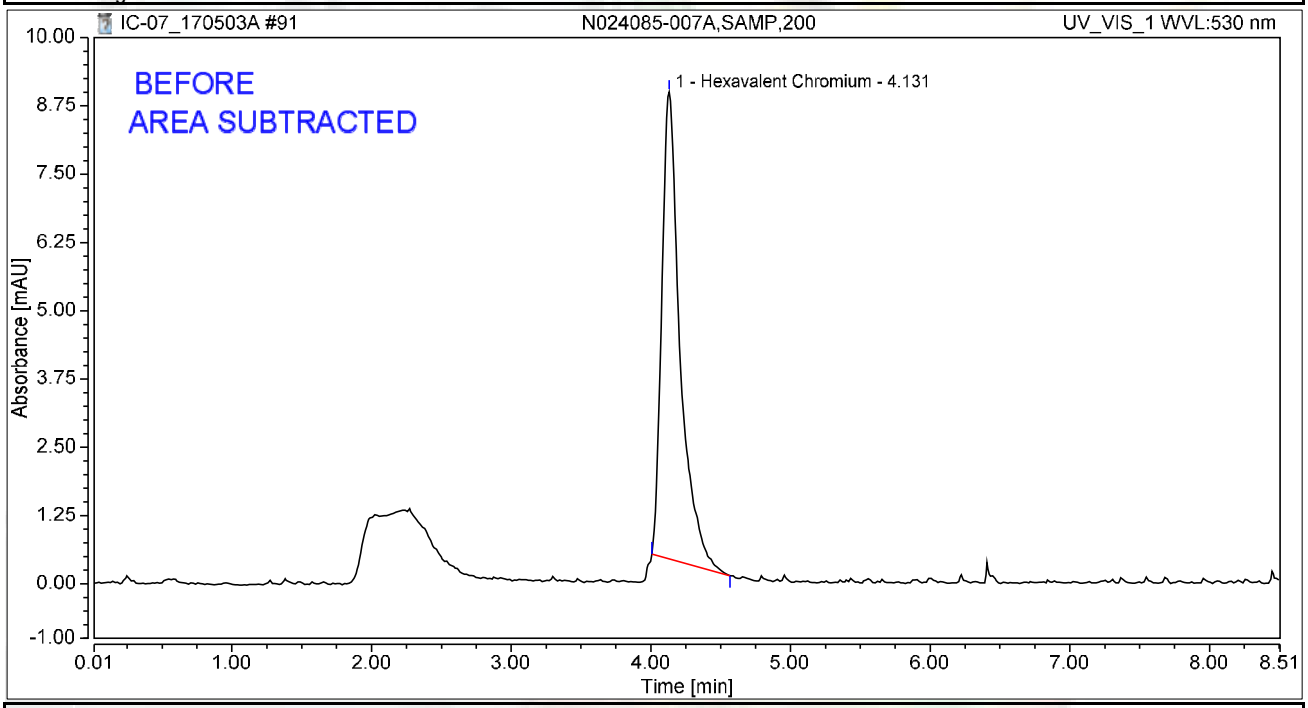
Reviewed by: 5/10/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024085-007A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.301	8.546	100.00	100.00	5.3325
Total:			**1.301**	**8.546**	**100.00**	**100.00**	

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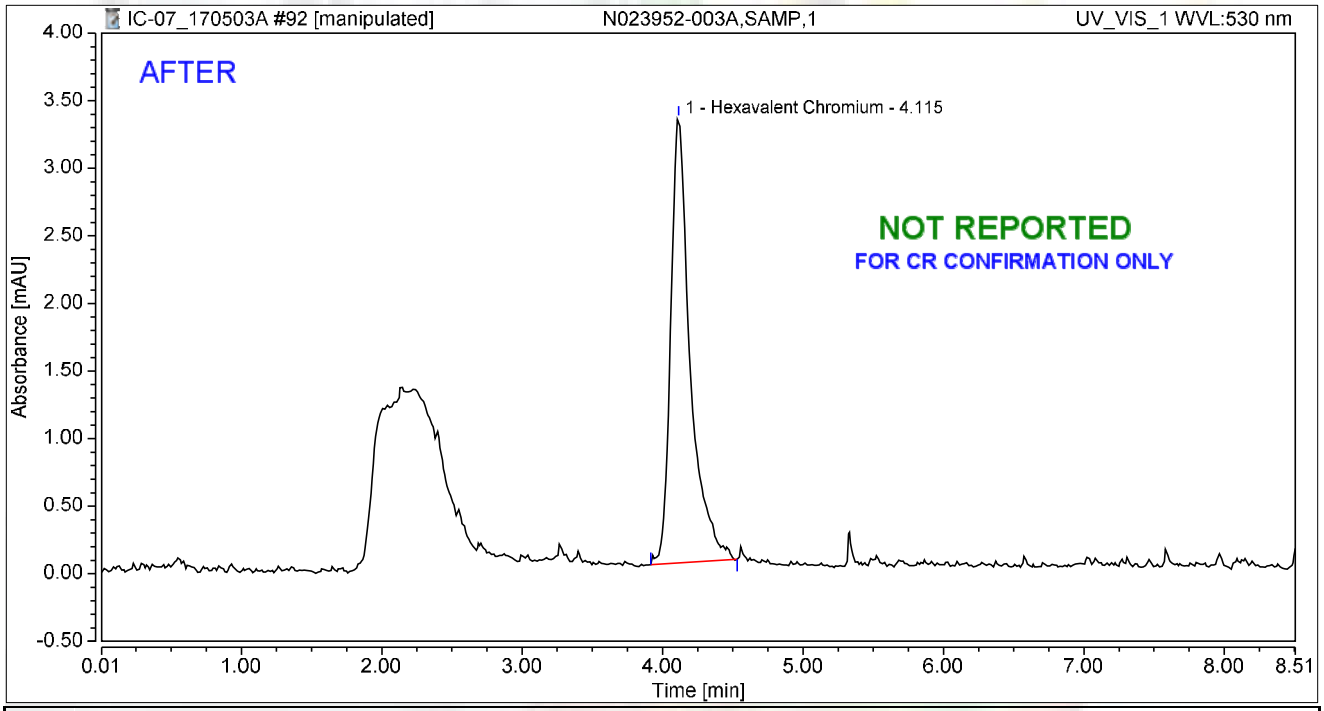
Chromatogram and Results

Injection Details

Injection Name:	**N023952-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.532	3.288	100.00	100.00	2.1803
Total:			**0.532**	**3.288**	**100.00**	**100.00**	

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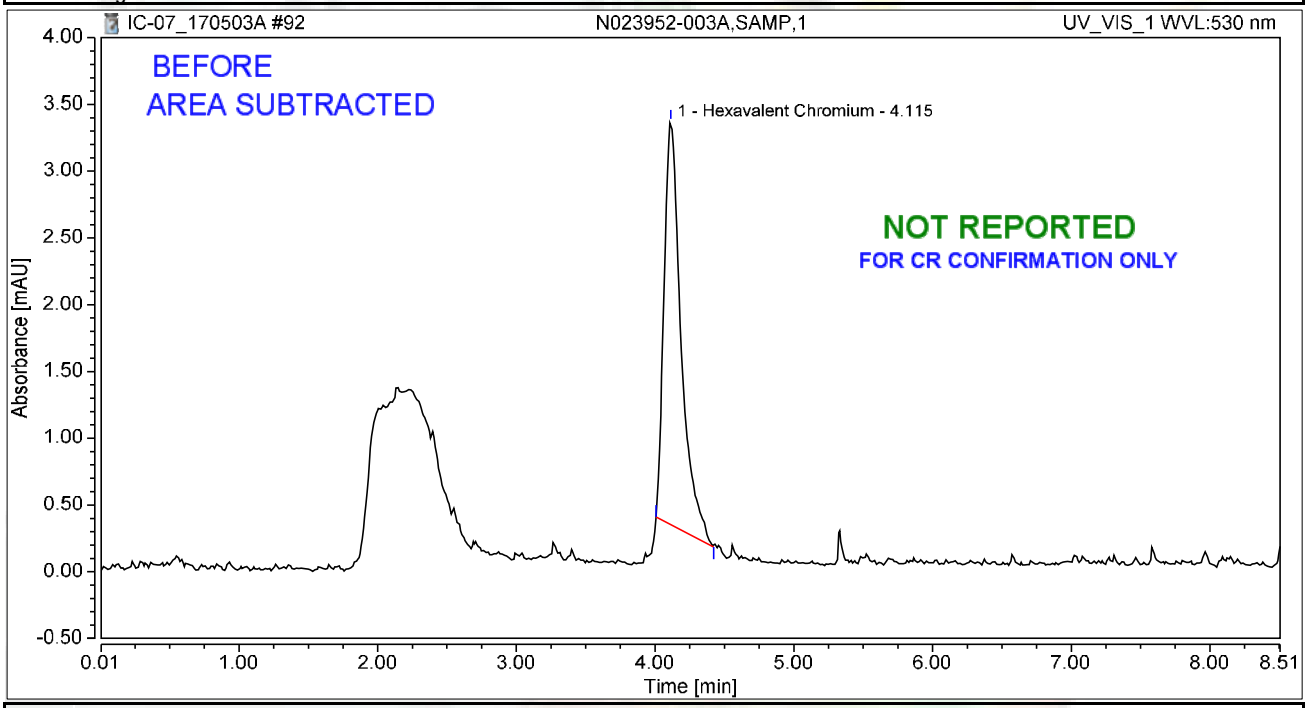
Chromatogram and Results

Injection Details

Injection Name:	**N023952-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.430	3.018	100.00	100.00	1.7637
Total:			**0.430**	**3.018**	**100.00**	**100.00**	

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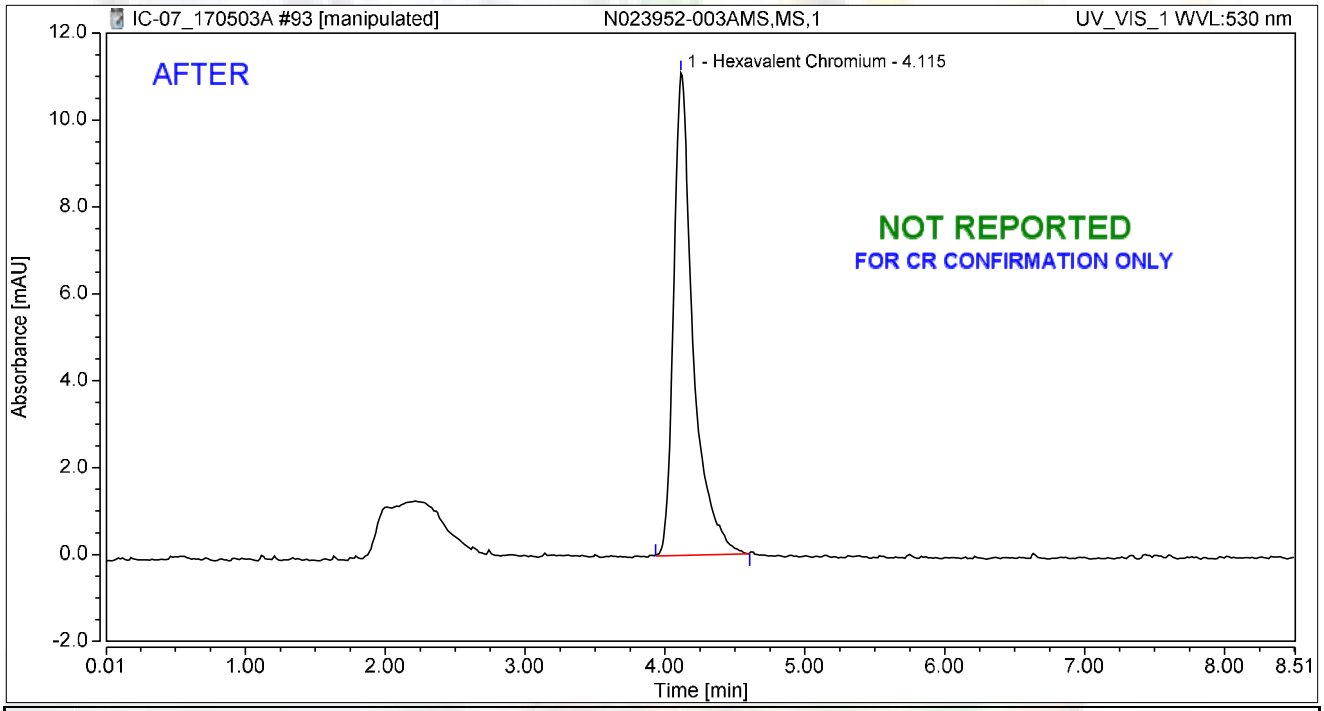
Chromatogram and Results

Injection Details

Injection Name:	**N023952-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	1.789	11.104	100.00	100.00	7.3353
Total:			**1.789**	**11.104**	**100.00**	**100.00**	

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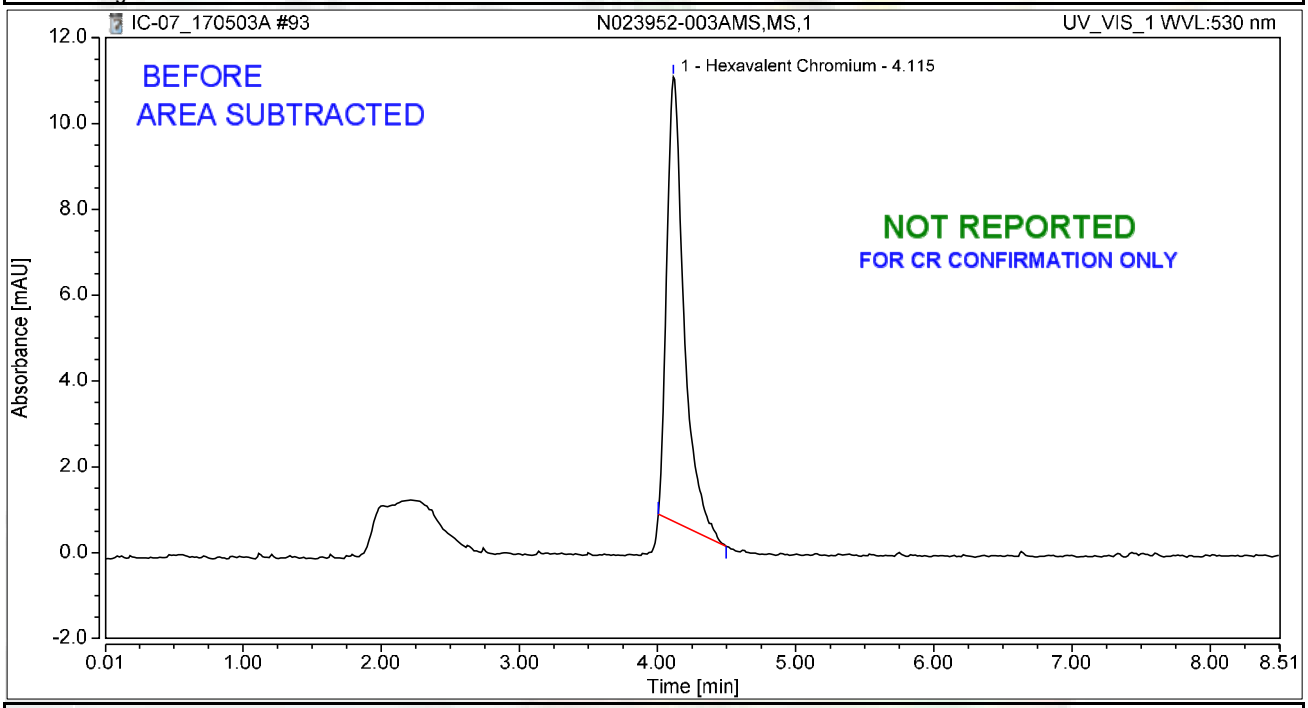
Chromatogram and Results

Injection Details

Injection Name:	**N023952-003AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	1.503	10.347	100.00	100.00	6.1646
Total:			**1.503**	**10.347**	**100.00**	**100.00**	

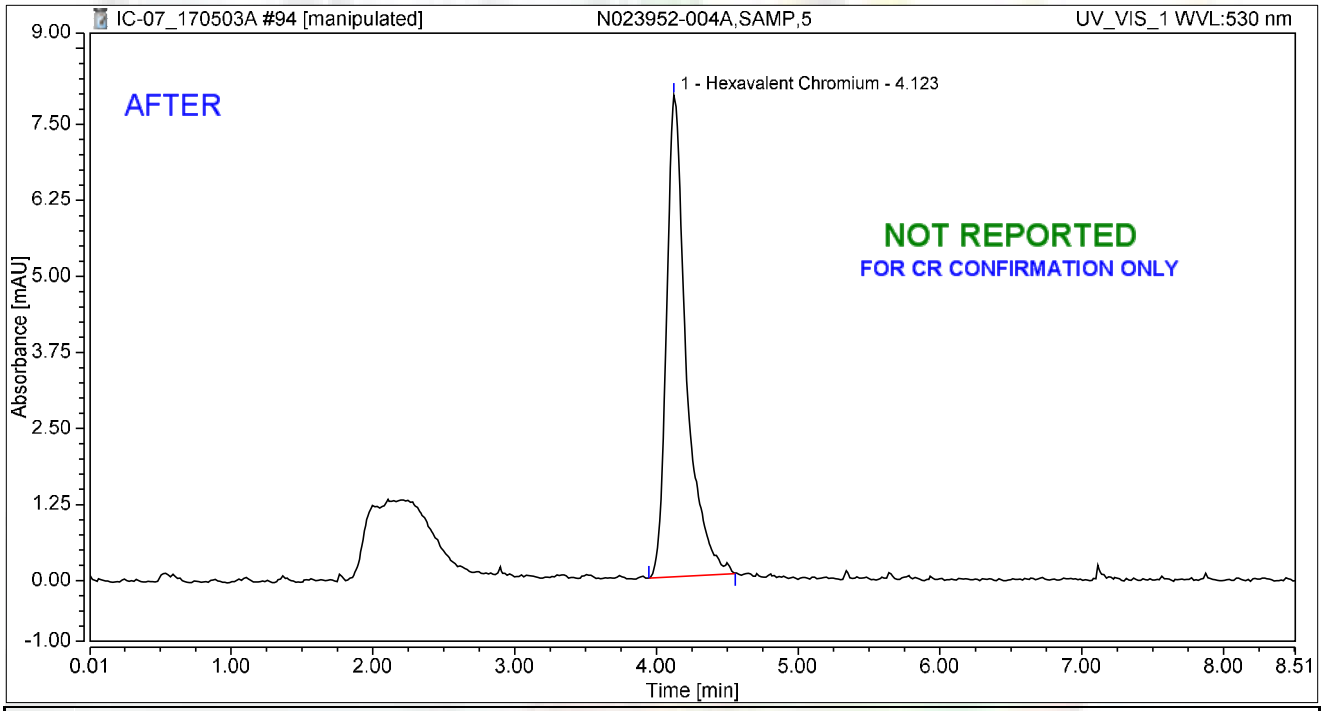
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023952-004A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.284	7.917	100.00	100.00	5.2660
Total:			**1.284**	**7.917**	**100.00**	**100.00**	

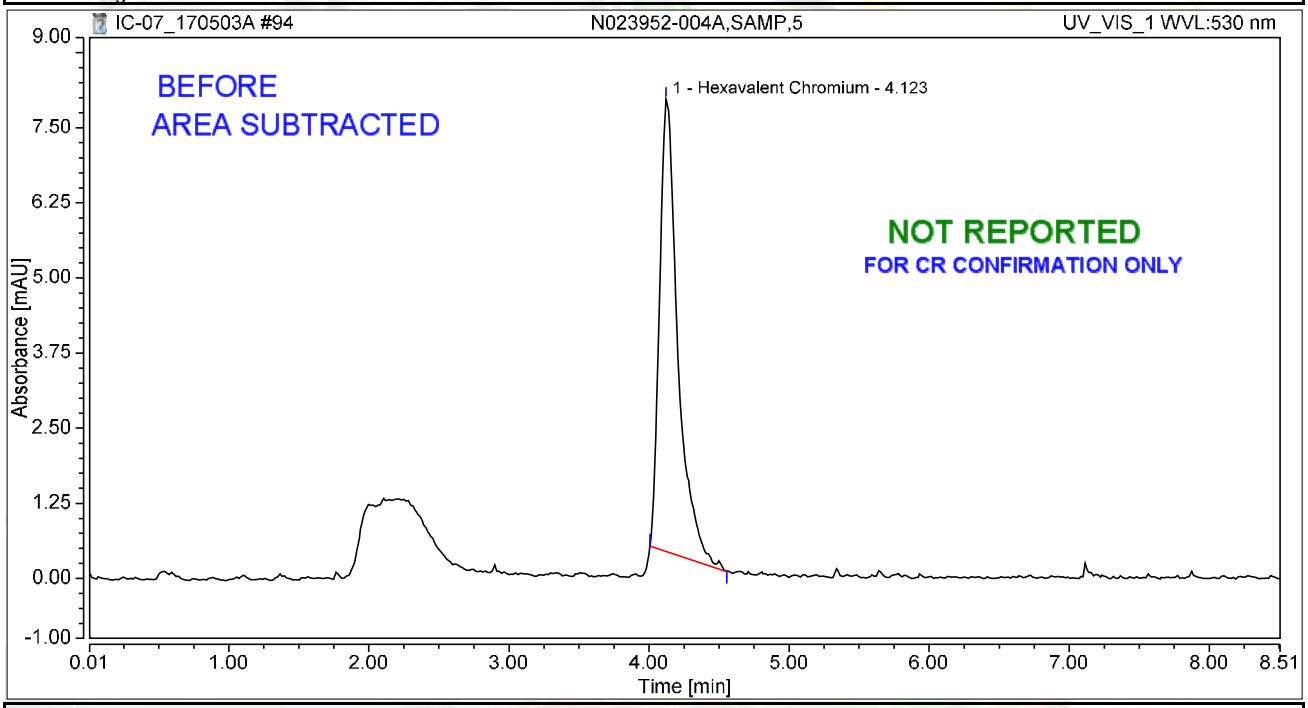
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023952-004A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.140	7.528	100.00	100.00	4.6738
Total:			**1.140**	**7.528**	**100.00**	**100.00**	

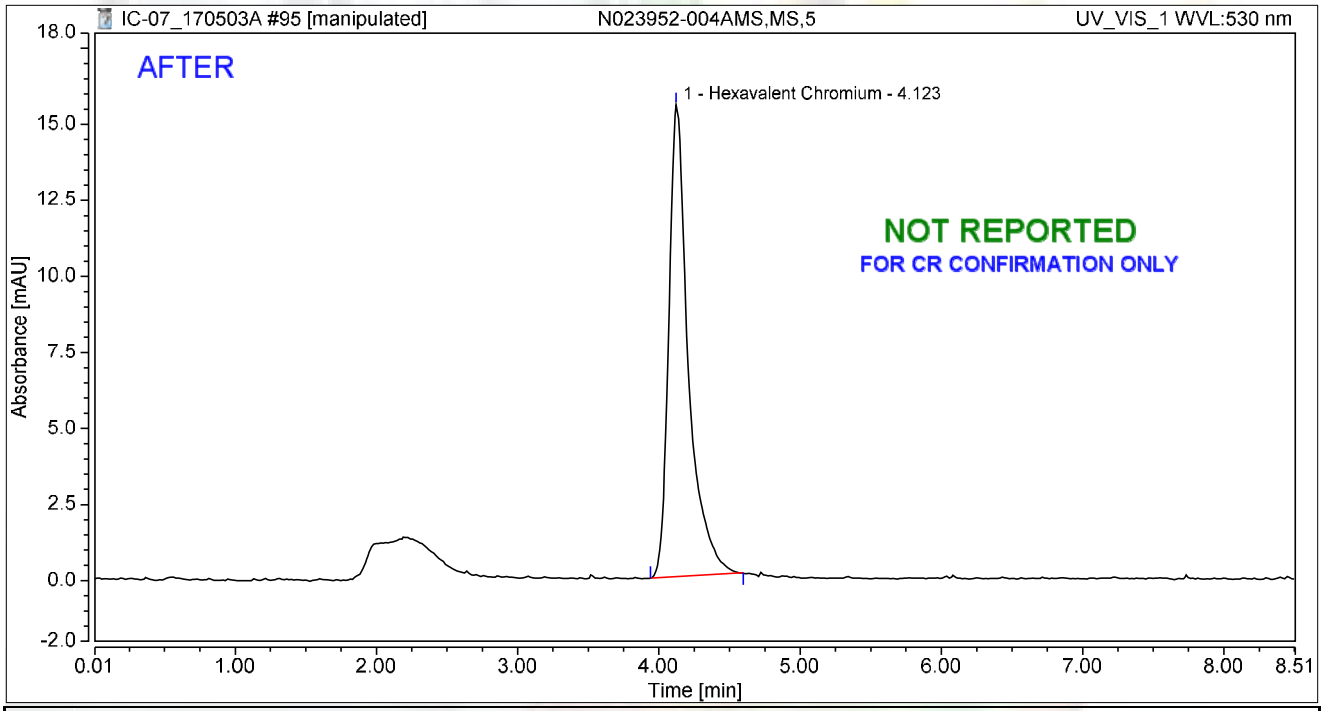
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N023952-004AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.497	15.511	100.00	100.00	10.2364
Total:			**2.497**	**15.511**	**100.00**	**100.00**	

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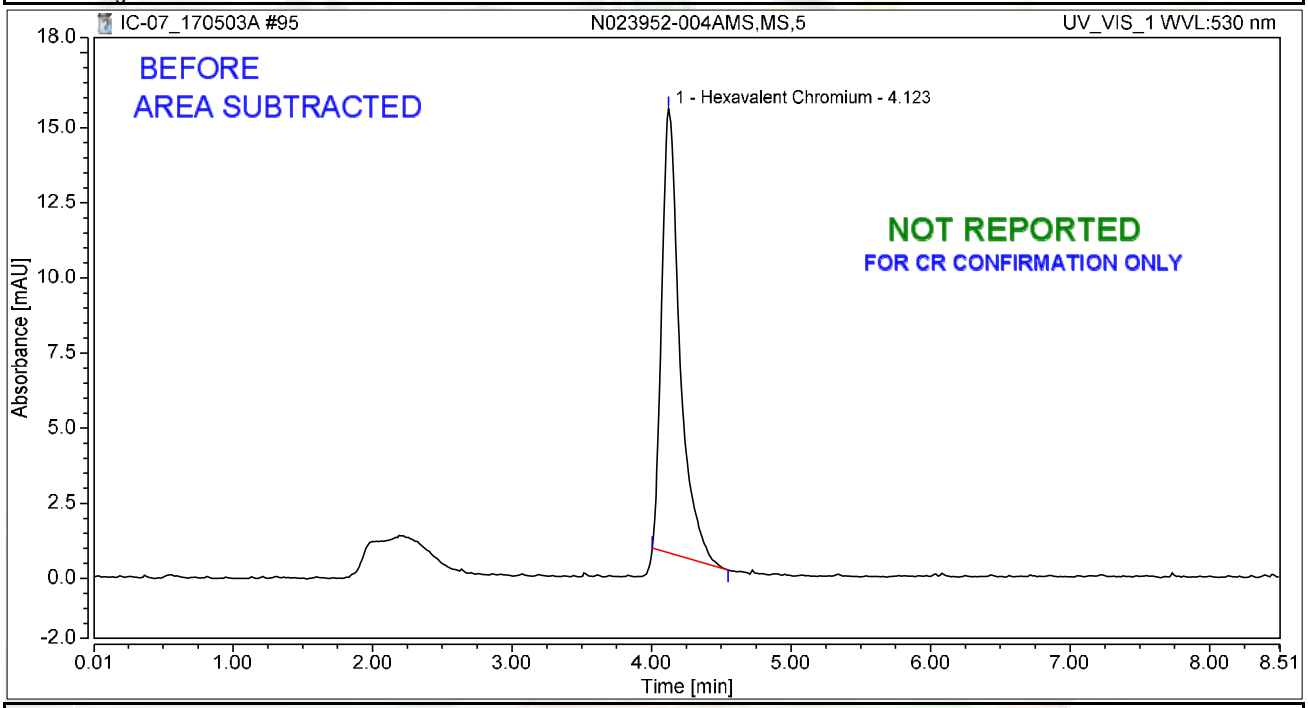
Chromatogram and Results

Injection Details

Injection Name:	**N023952-004AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 22:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.222	14.786	100.00	100.00	9.1126
Total:			**2.222**	**14.786**	**100.00**	**100.00**	

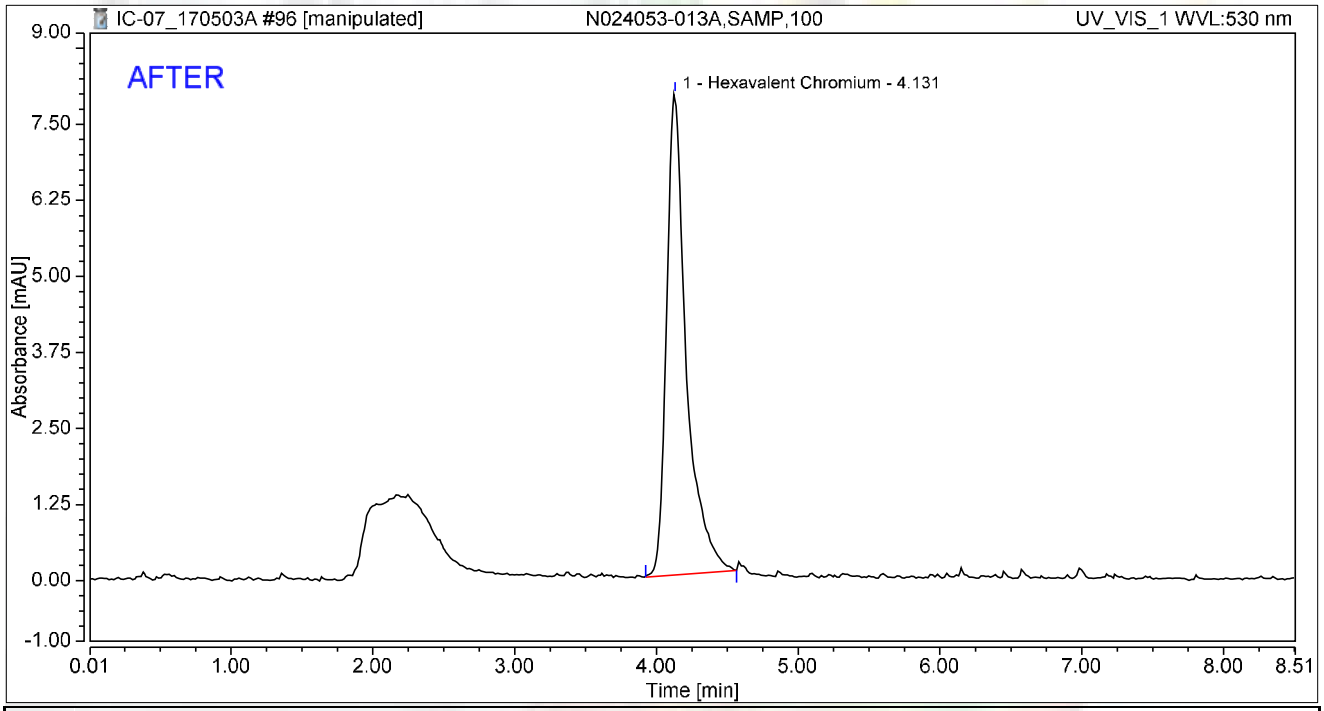
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.280	7.903	100.00	100.00	5.2471
Total:			**1.280**	**7.903**	**100.00**	**100.00**	

rba 5/7/2017

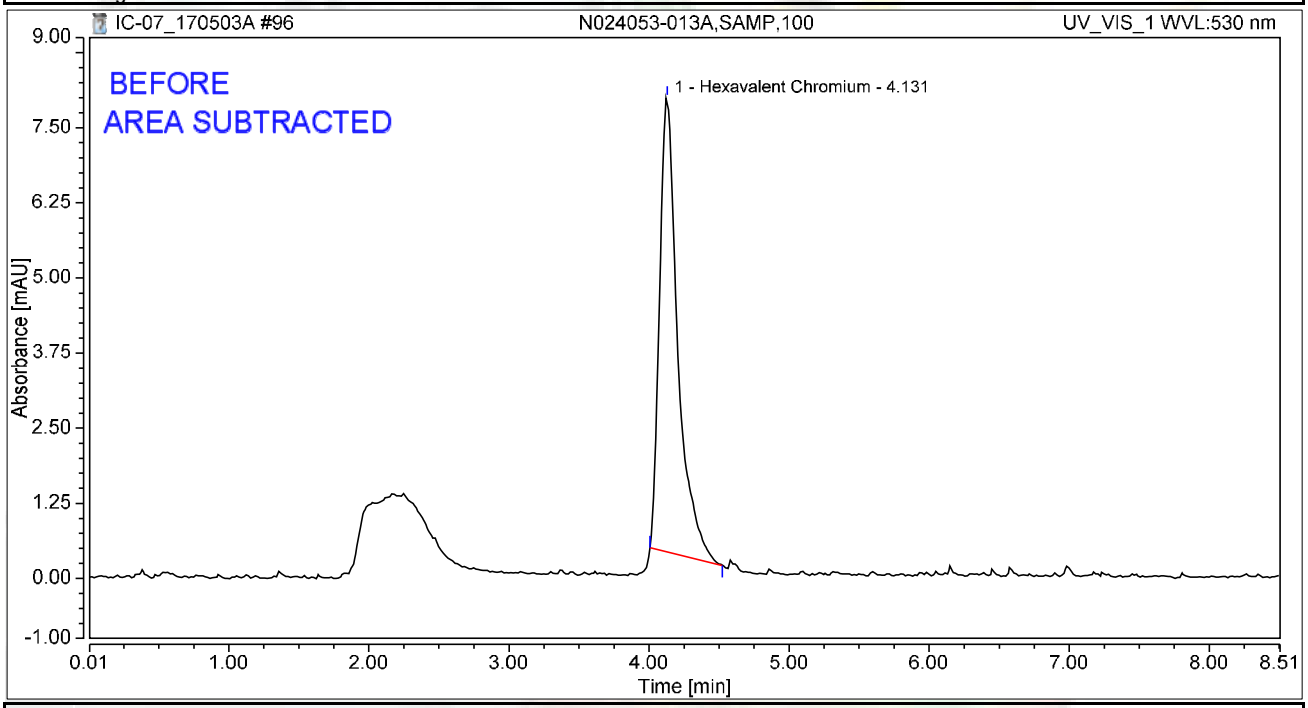
Reviewed by Nancy 5/10/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.143	7.558	100.00	100.00	4.6858
Total:			**1.143**	**7.558**	**100.00**	**100.00**	

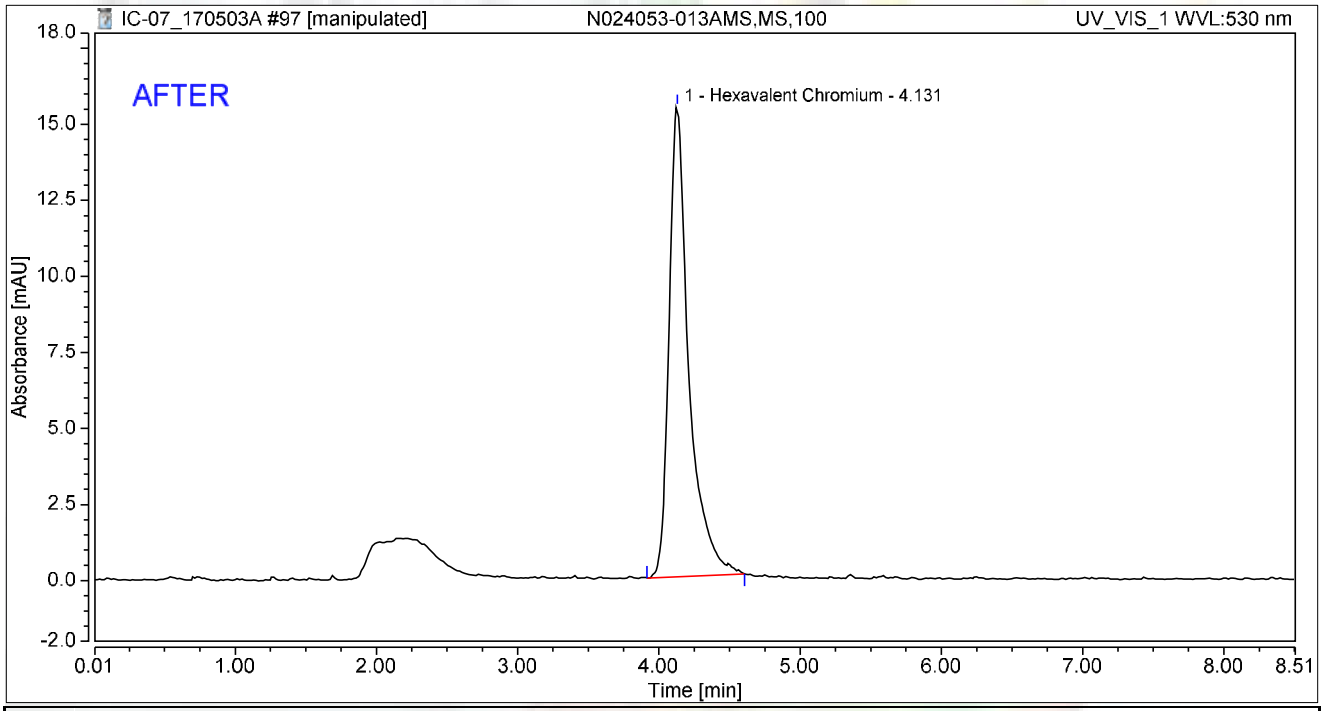
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.514	15.447	100.00	100.00	10.3066
Total:			**2.514**	**15.447**	**100.00**	**100.00**	

rba 5/7/2017

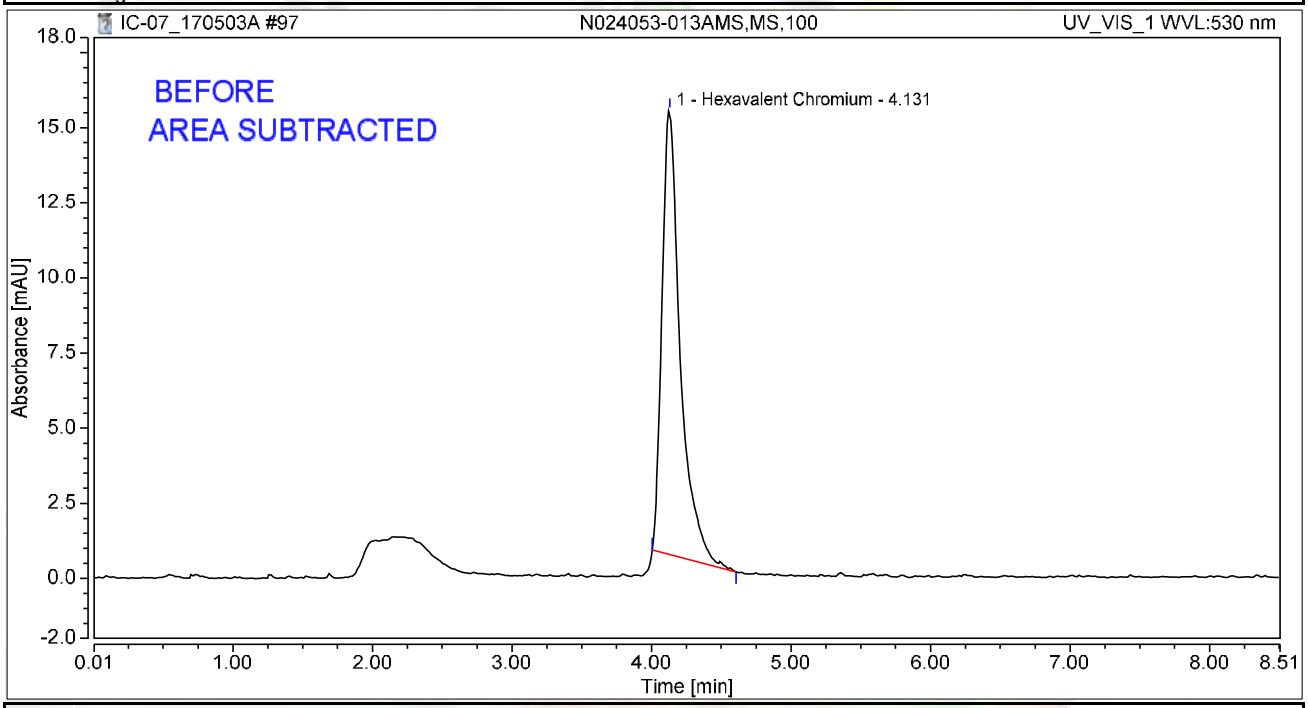
Reviewed by: [signature] 5/10/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.243	14.777	100.00	100.00	9.1957
Total:			**2.243**	**14.777**	**100.00**	**100.00**	

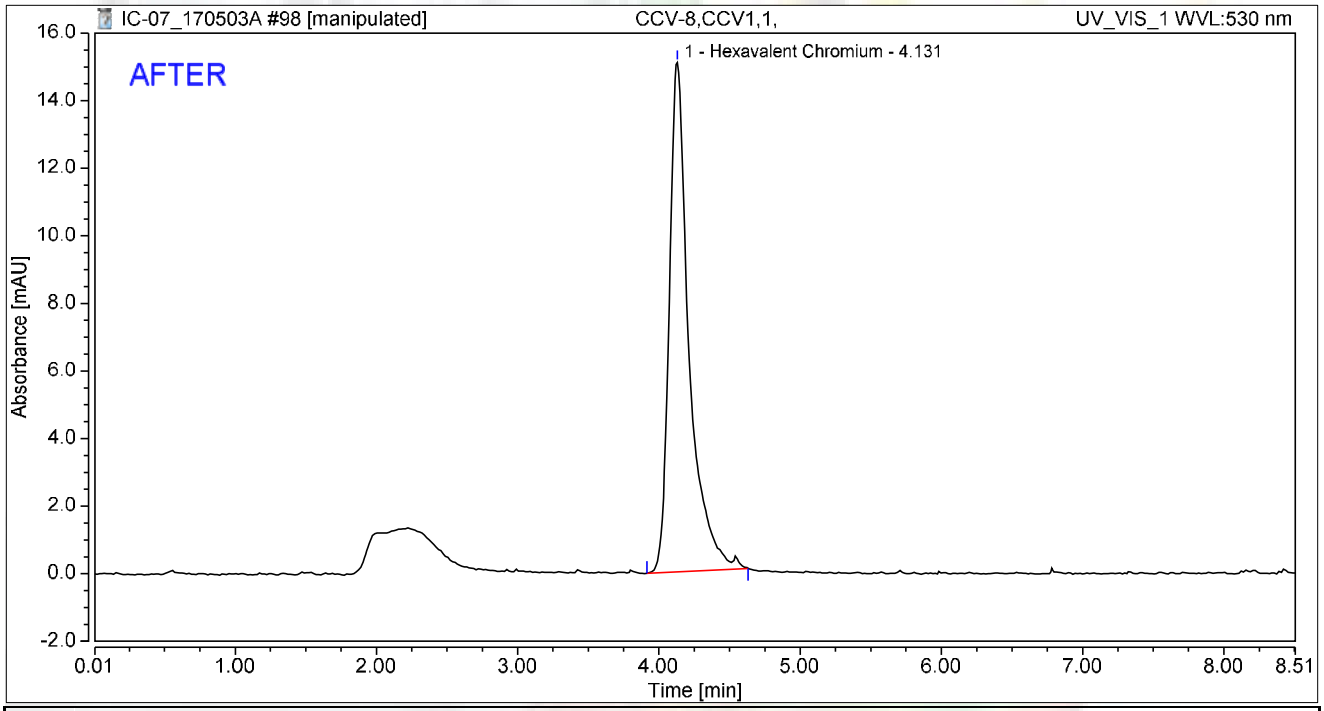
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.451	15.075	100.00	100.00	10.0514
Total:			**2.451**	**15.075**	**100.00**	**100.00**	

rba 5/7/2017

Reviewed

My first report/Integration: Dmcy 5/10/2017

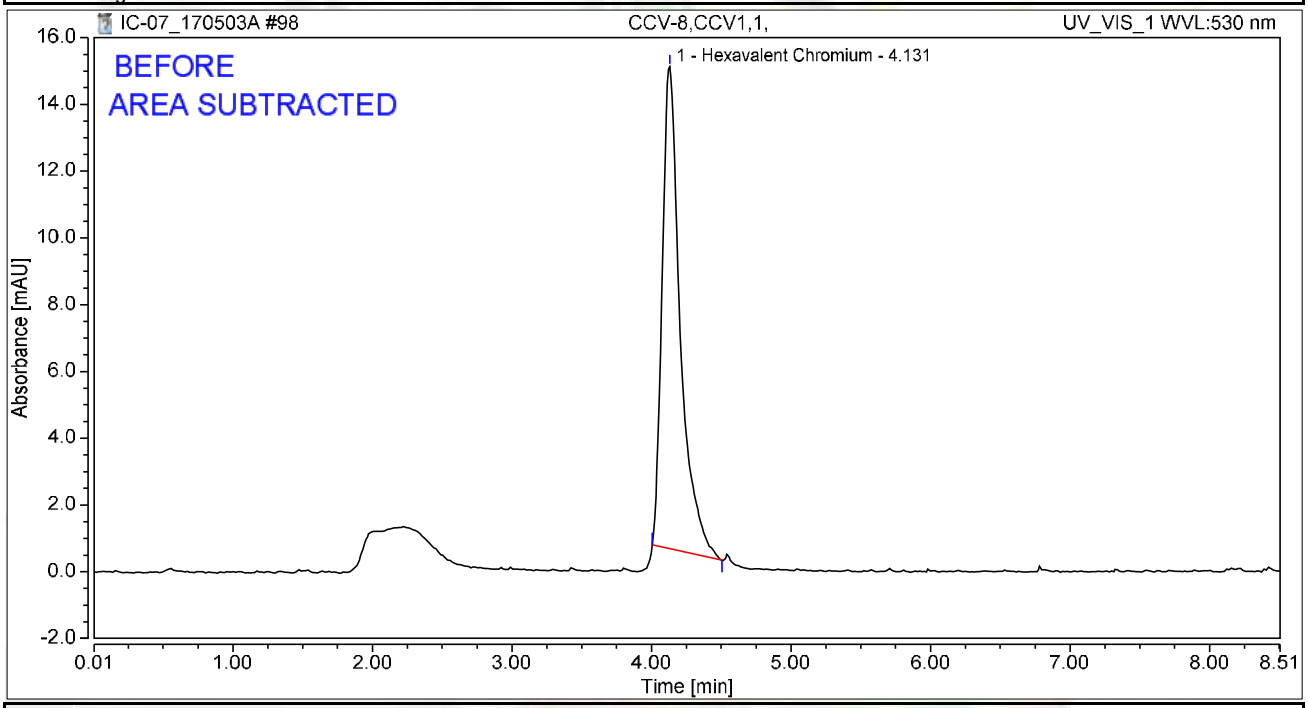
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-8,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.168	14.439	100.00	100.00	8.8887
Total:			**2.168**	**14.439**	**100.00**	**100.00**	

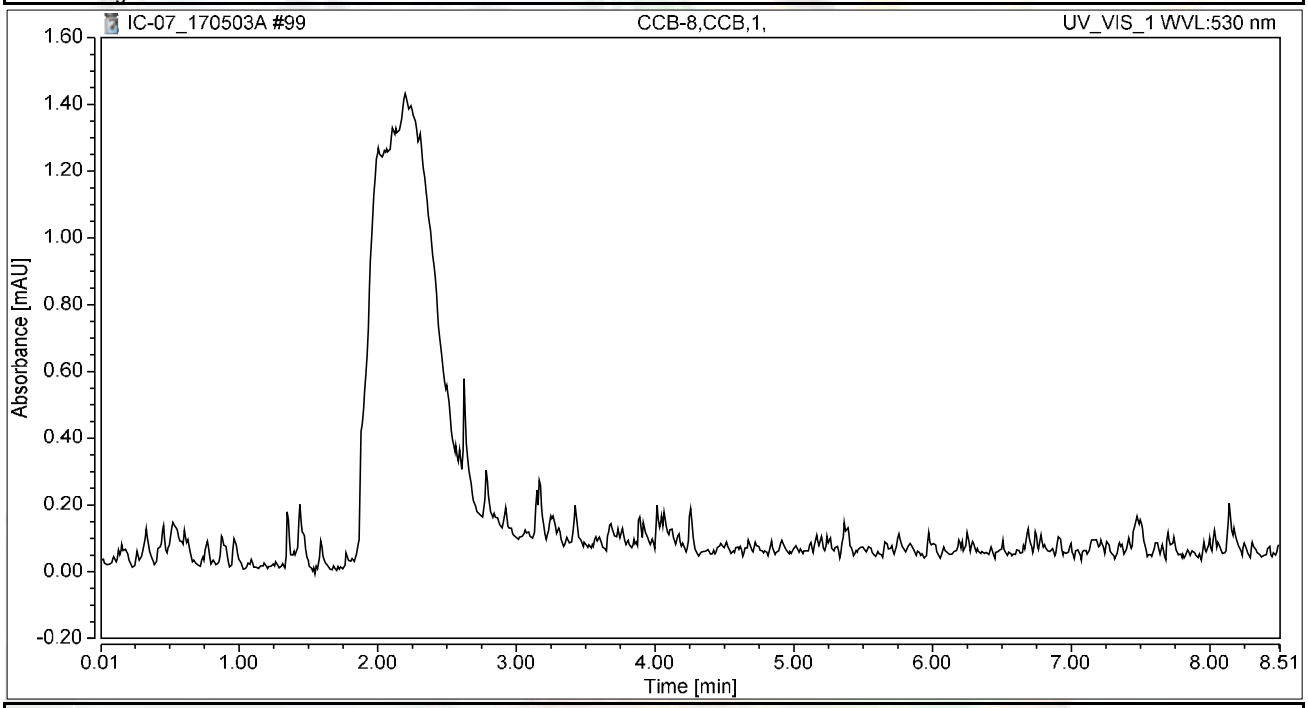
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-8,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

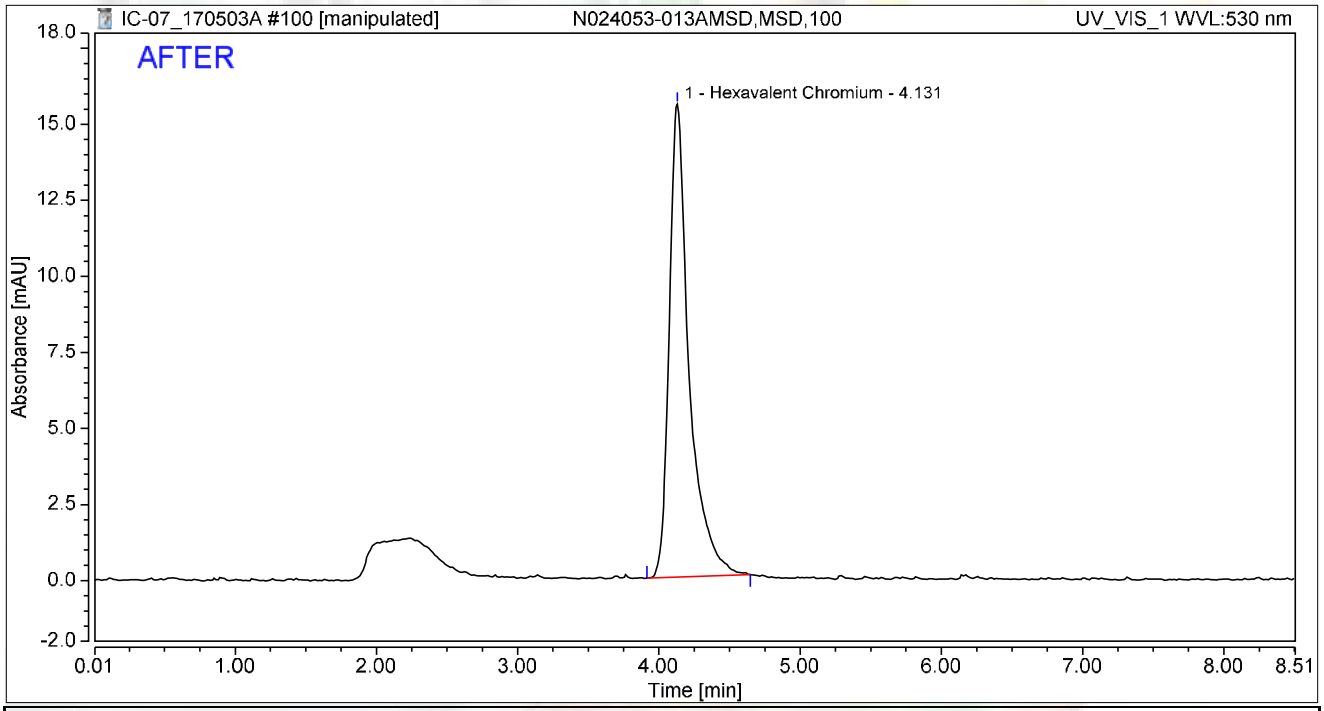
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013AMSD,MSD,100**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.537	15.541	100.00	100.00	10.4004
Total:			**2.537**	**15.541**	**100.00**	**100.00**	

rba 5/7/2017

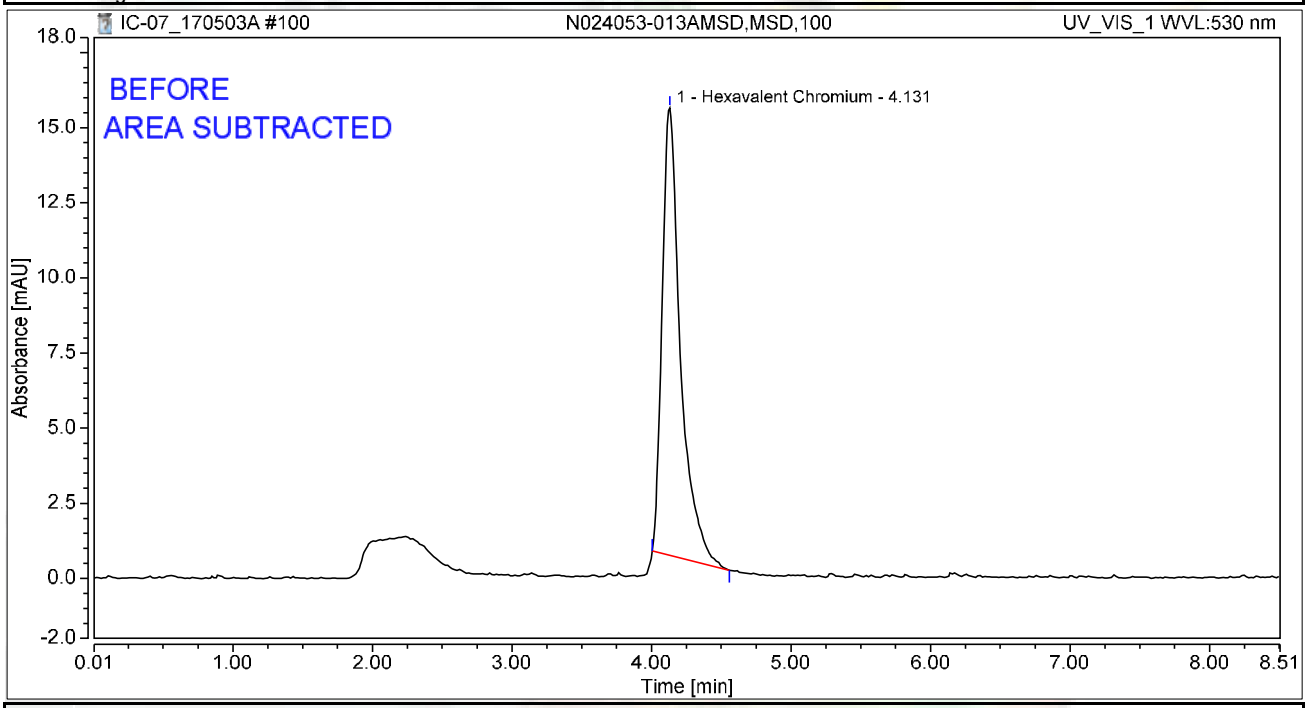
Reviewed by: 5/10/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013AMSD,MSD,100**	*Run Time (min):*	**8.50**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.271	14.898	100.00	100.00	9.3128
Total:			**2.271**	**14.898**	**100.00**	**100.00**	

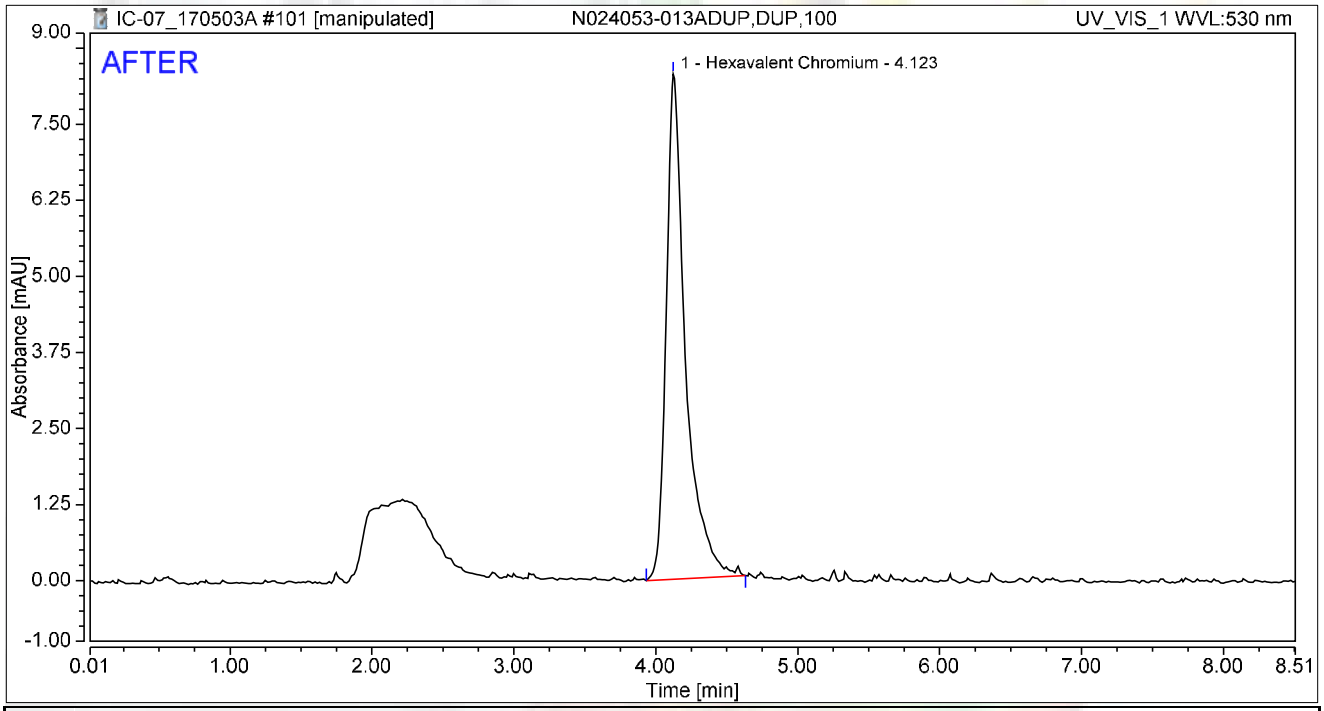
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013ADUP,DUP,100**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.316	8.305	100.00	100.00	5.3953
Total:			**1.316**	**8.305**	**100.00**	**100.00**	

rba 5/7/2017

Reviewed by: Money 5/10/2017

My first report/Integration

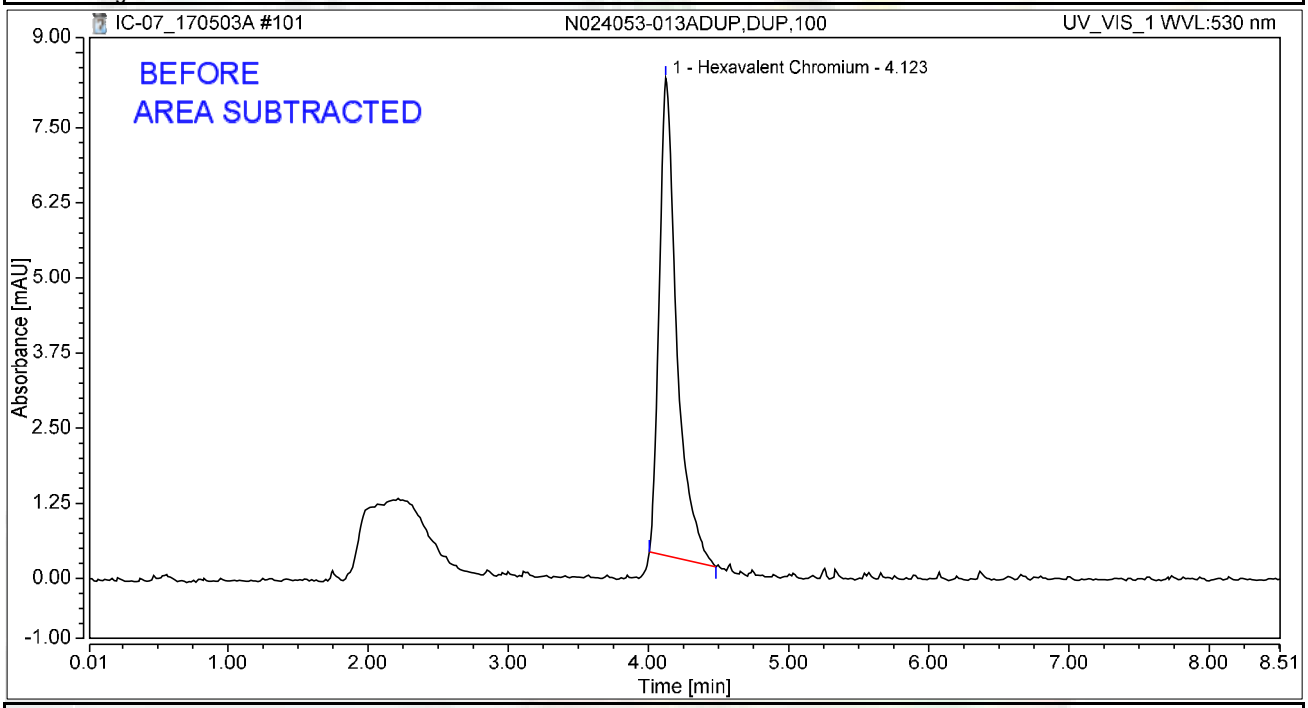
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024053-013ADUP,DUP,100**	*Run Time (min):*	**8.49**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**03/May/17 23:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.160	7.946	100.00	100.00	4.7552
Total:			**1.160**	**7.946**	**100.00**	**100.00**	

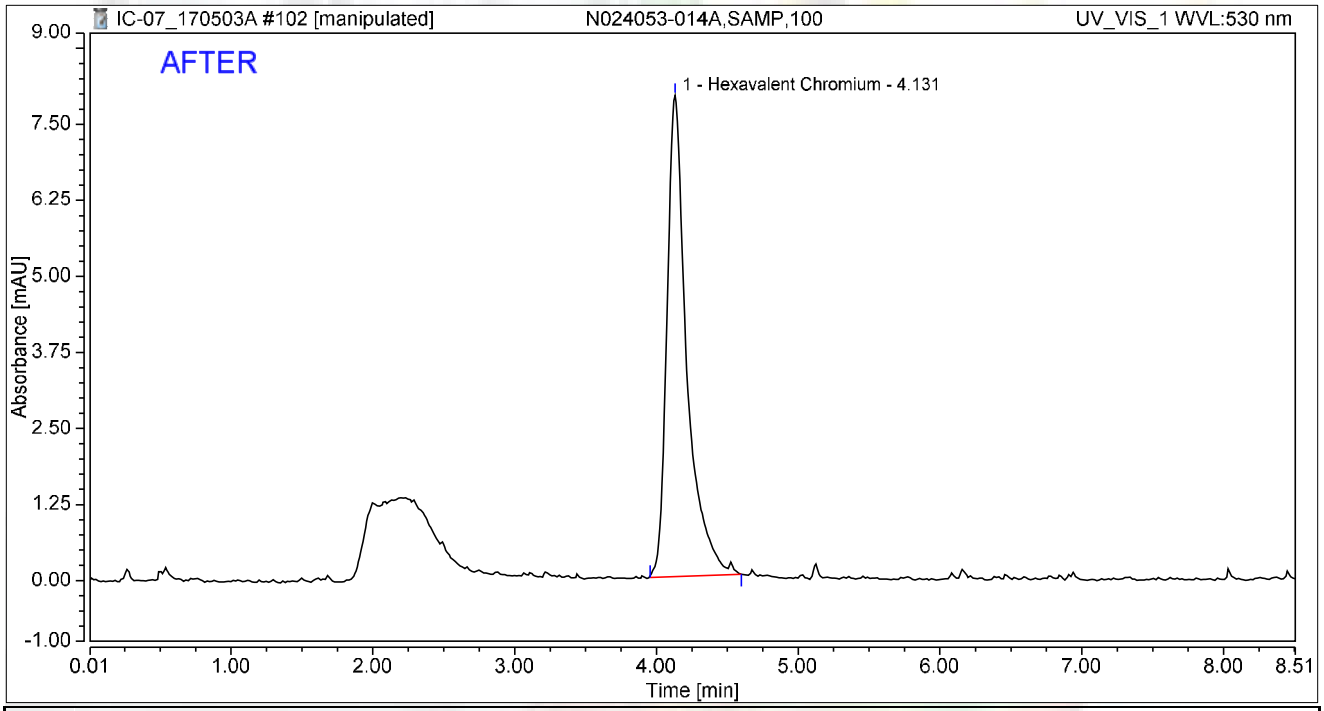
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-014A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/17 00:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.288	7.907	100.00	100.00	5.2813
Total:			**1.288**	**7.907**	**100.00**	**100.00**	

rba 5/7/2017

Reviewed by: 5/12/2017

My first report/Integration

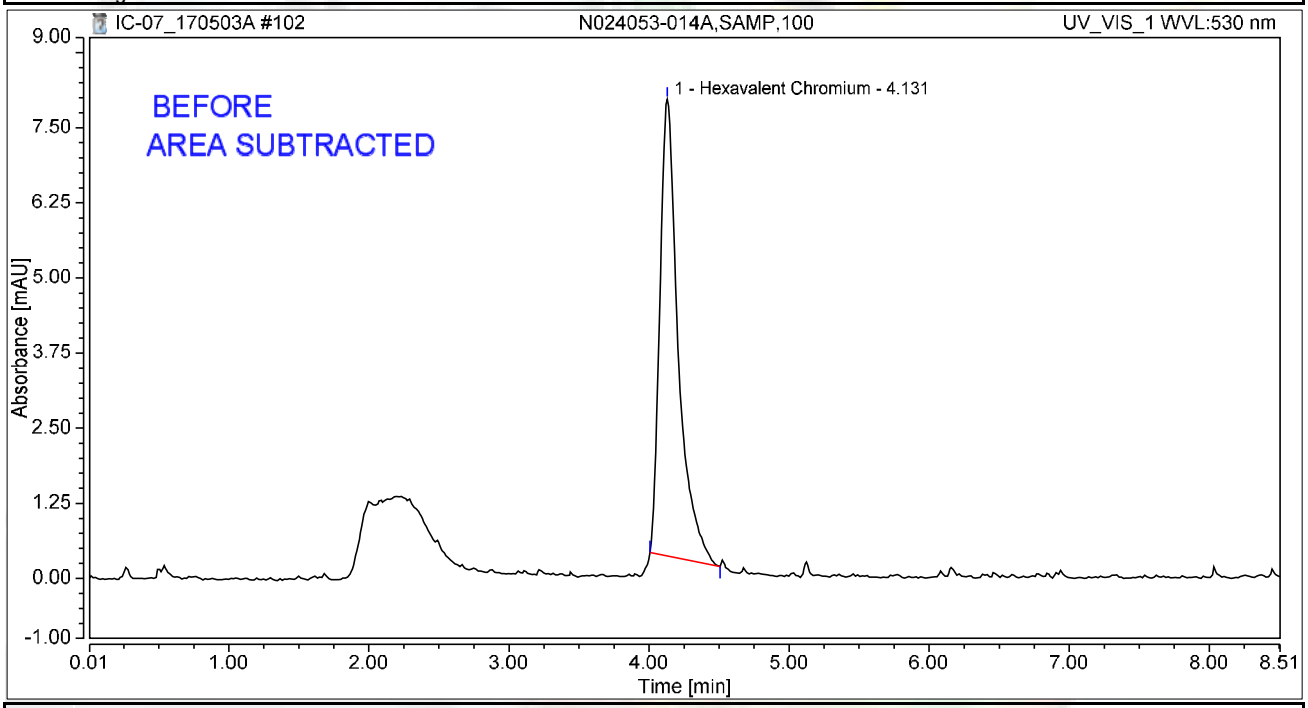
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024053-014A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/17 00:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.154	7.602	100.00	100.00	4.7303
Total:			**1.154**	**7.602**	**100.00**	**100.00**	

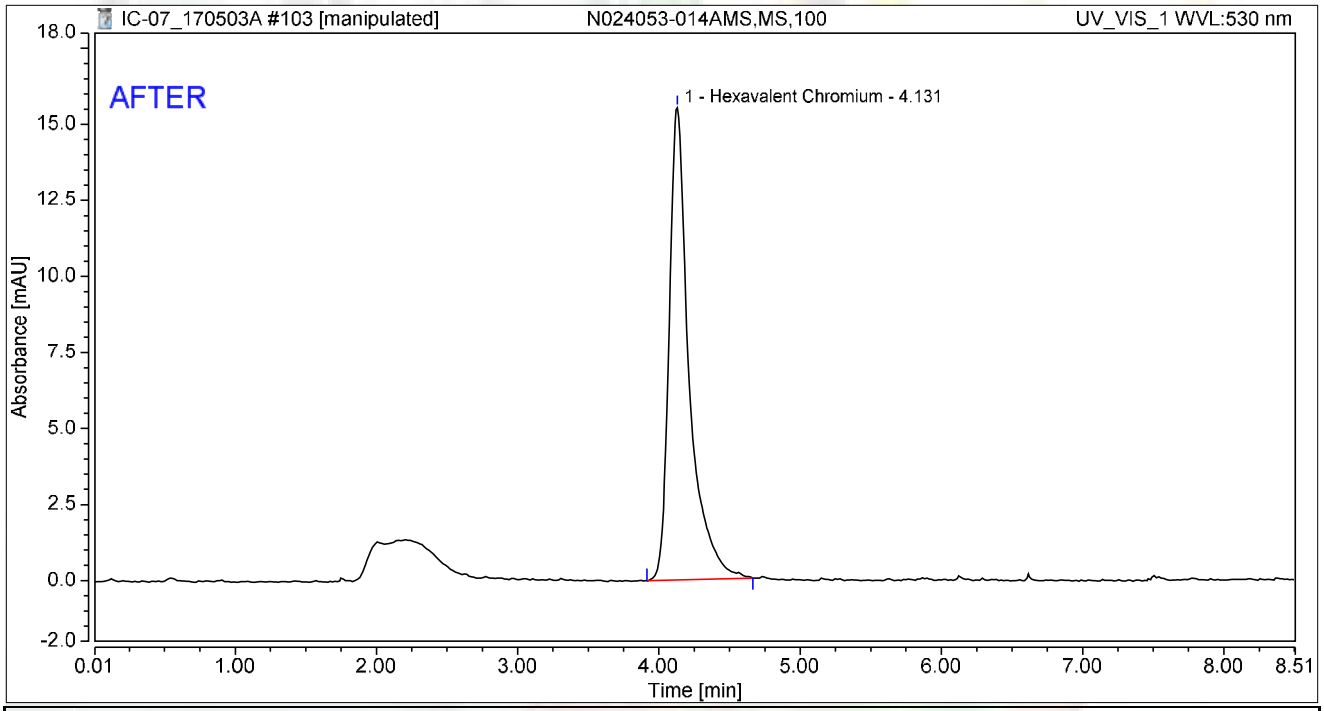
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-014AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/17 00:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.548	15.531	100.00	100.00	10.4457
Total:			**2.548**	**15.531**	**100.00**	**100.00**	

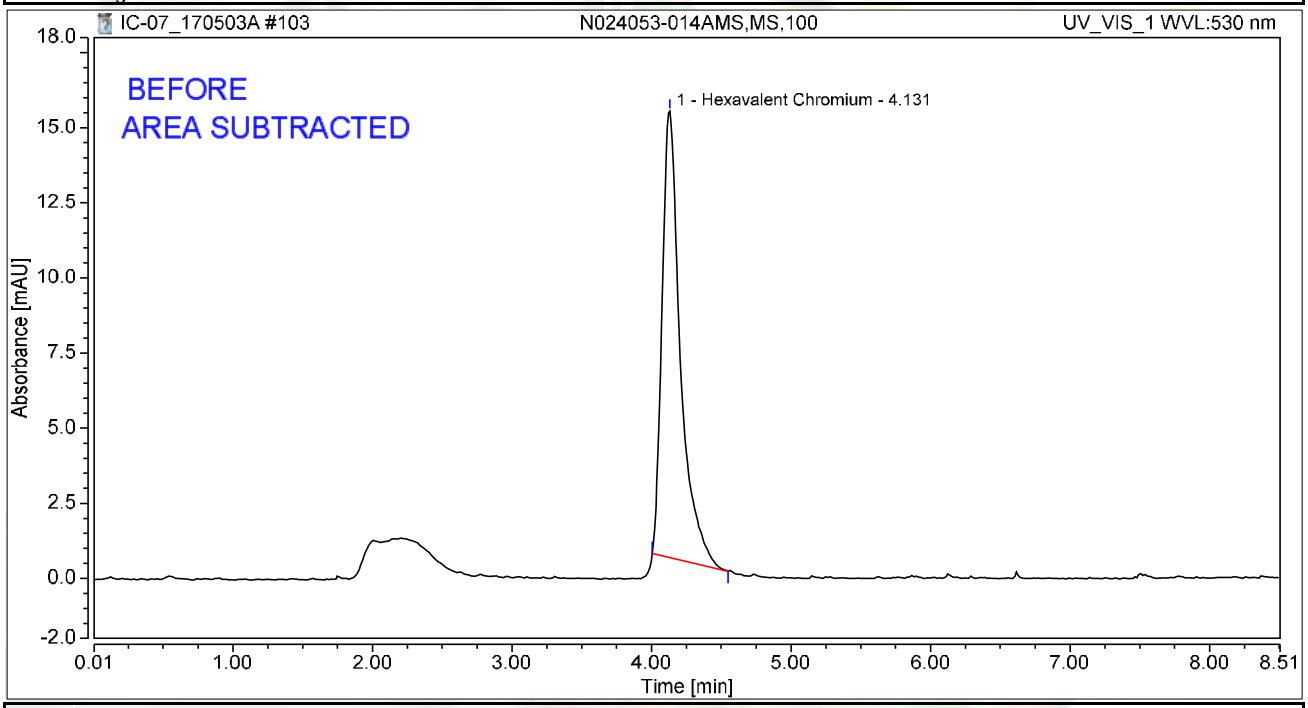
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024053-014AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/17 00:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.253	14.857	100.00	100.00	9.2378
Total:			**2.253**	**14.857**	**100.00**	**100.00**	

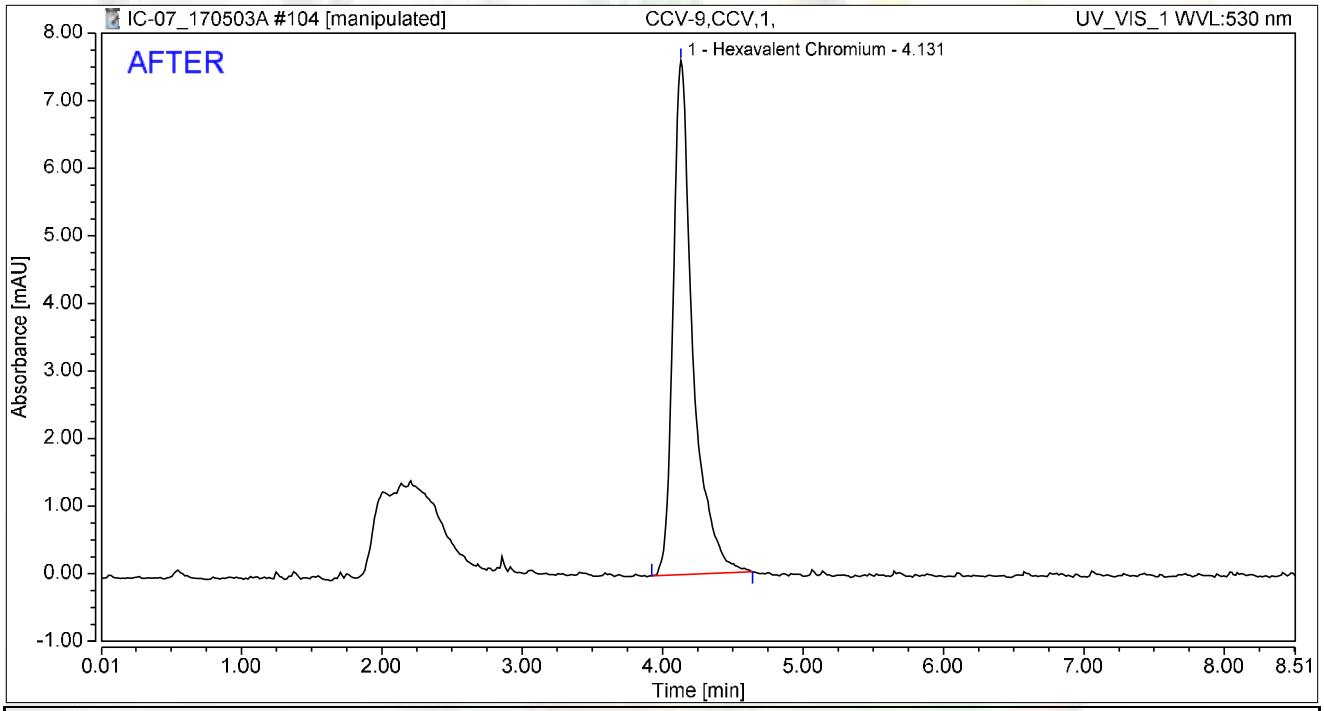
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-9,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/17 00:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.239	7.603	100.00	100.00	5.0805
Total:			**1.239**	**7.603**	**100.00**	**100.00**	

rba 5/7/2017

Reviewed by: Nancy 5/10/2017

My first report/Integration

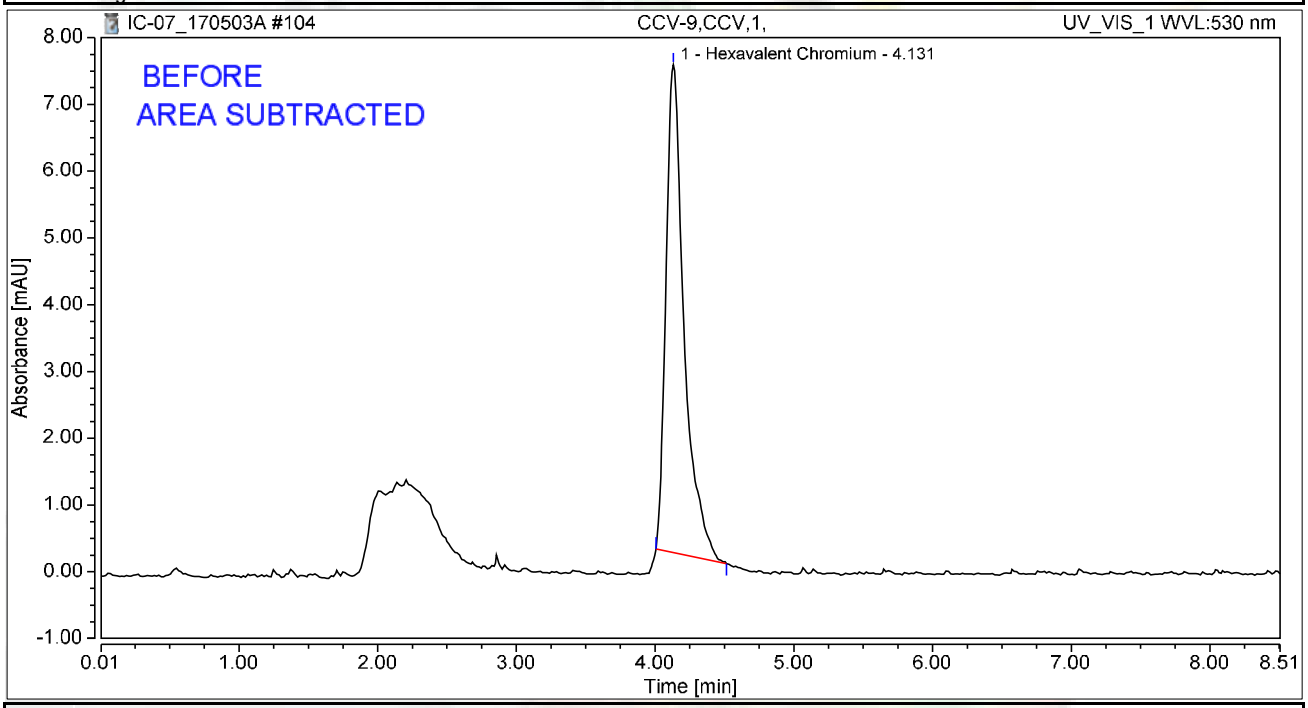
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-9,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/17 00:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.105	7.301	100.00	100.00	4.5302
Total:			**1.105**	**7.301**	**100.00**	**100.00**	

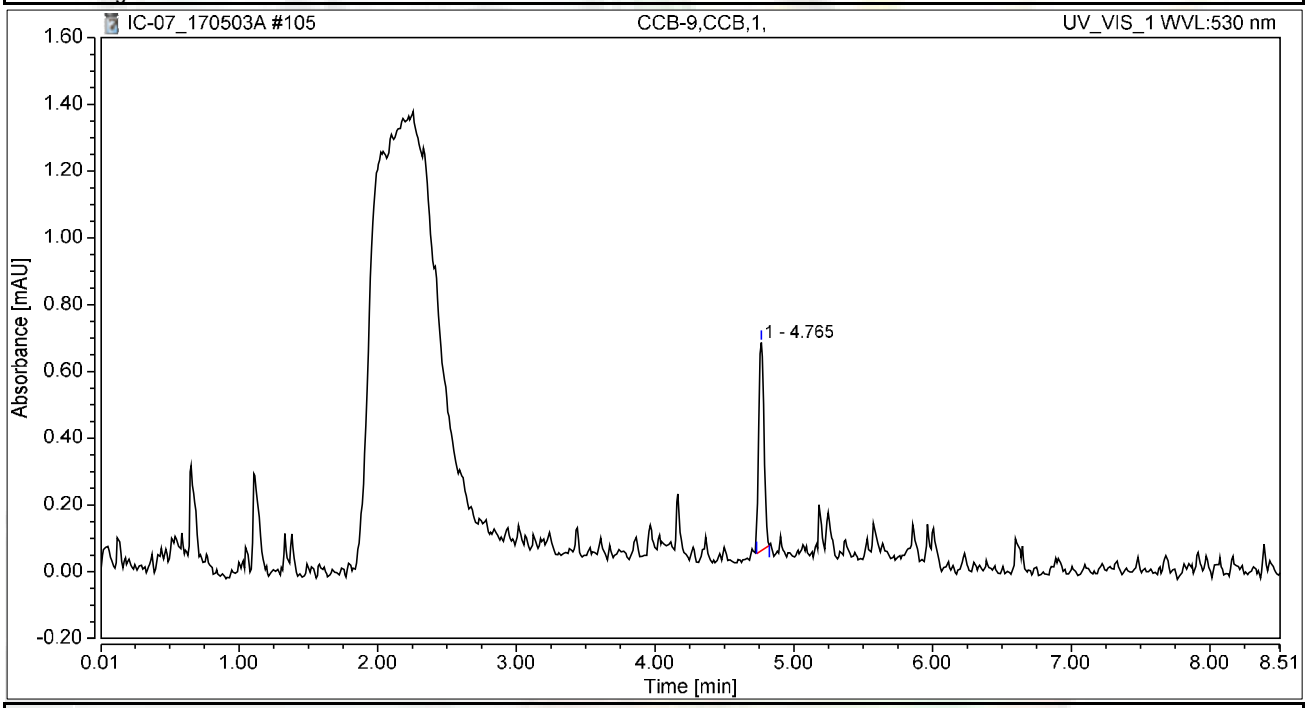
rba 5/7/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-9,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**04/May/17 00:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

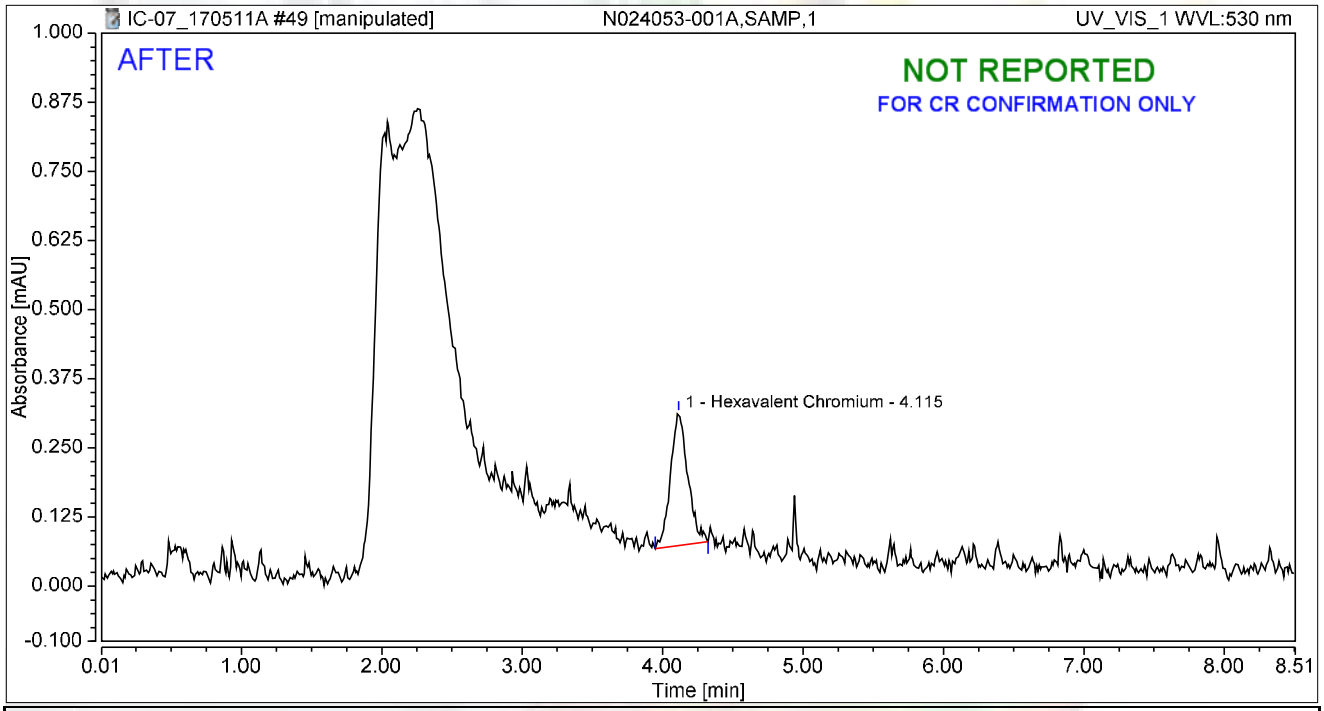
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		4.765	0.027	0.623	100.00	100.00	n.a.
Total:			**0.027**	**0.623**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

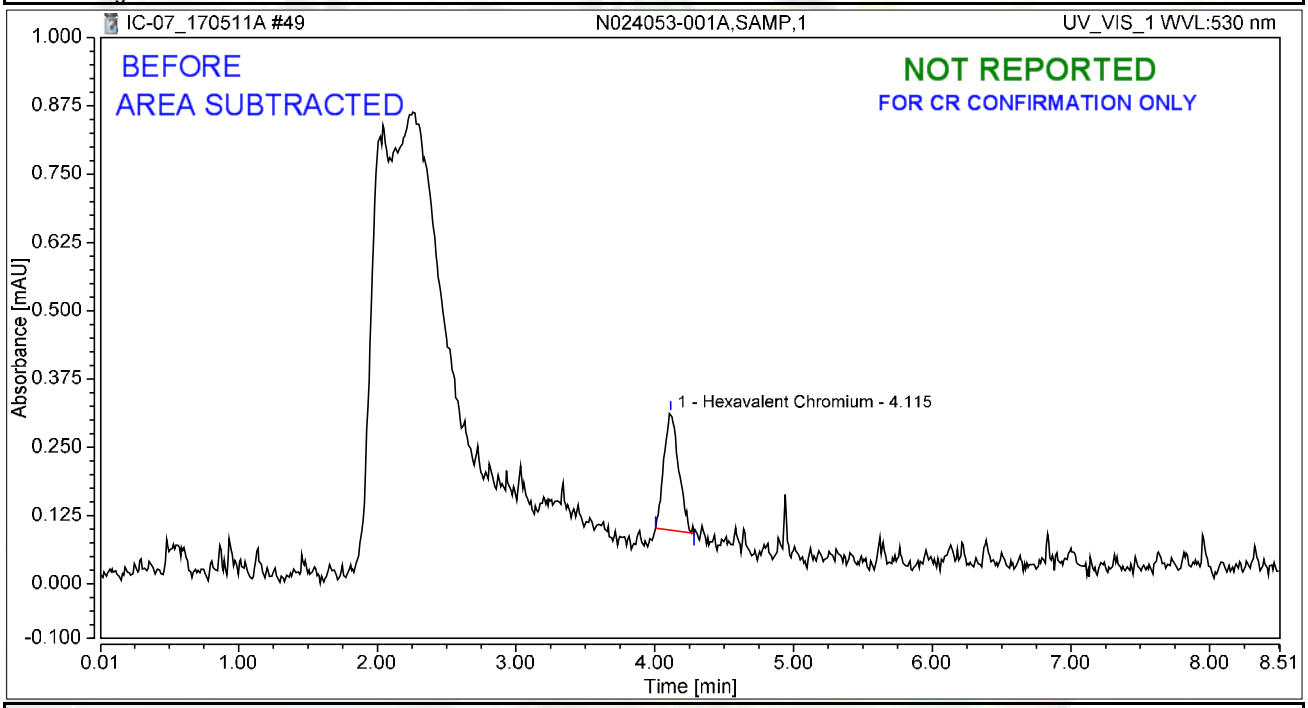
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.034	0.239	100.00	100.00	0.1403
Total:			**0.034**	**0.239**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

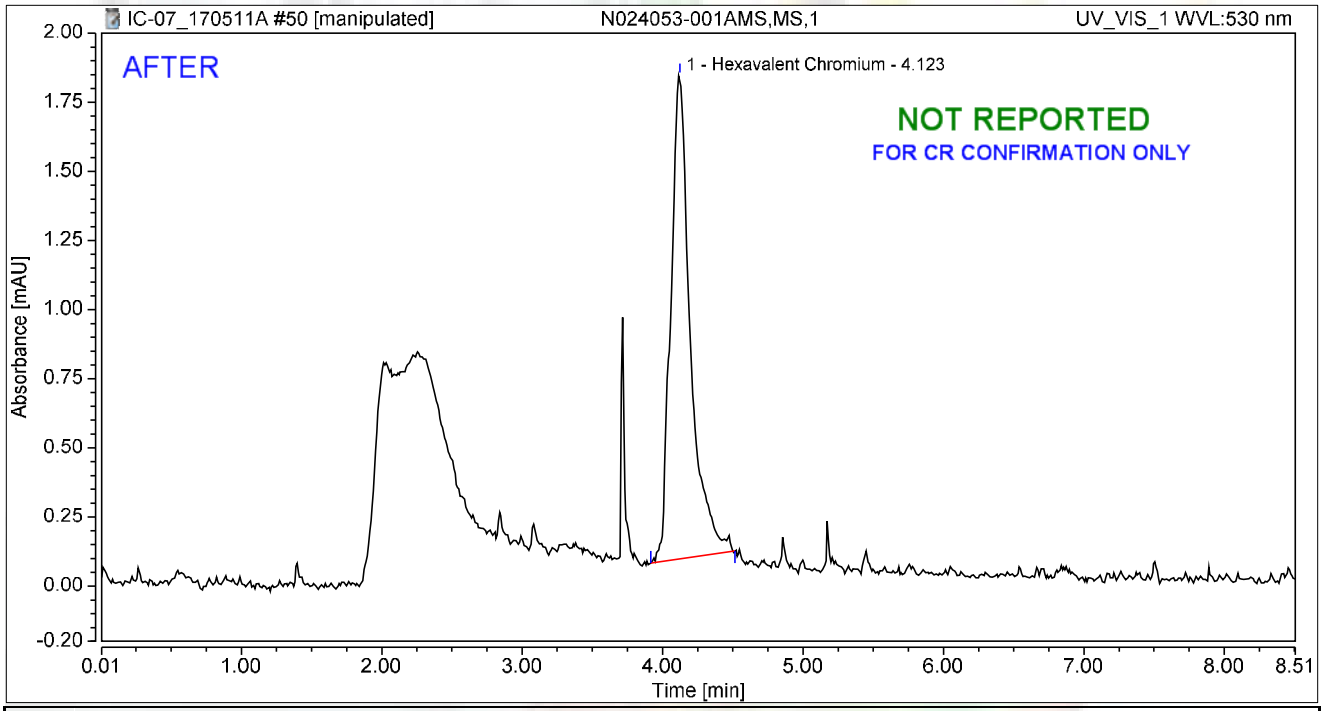
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.115	0.027	0.215	100.00	100.00	0.1092
Total:			**0.027**	**0.215**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

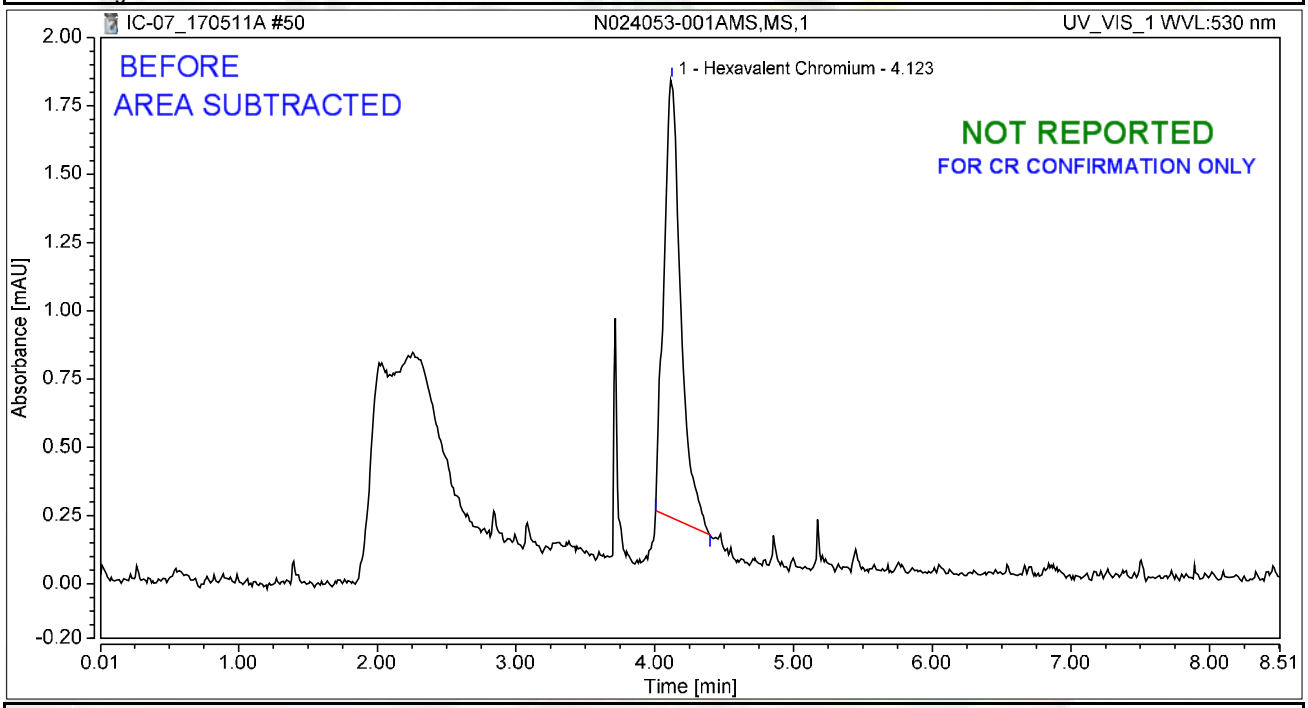
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.284	1.749	100.00	100.00	1.1638
Total:			**0.284**	**1.749**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024053-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.229	1.605	100.00	100.00	0.9381
Total:			**0.229**	**1.605**	**100.00**	**100.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R114974 **Analyst:** LSR

ASSET #: N024053 **Date Analyzed:** 5/1/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/2/2017

2nd Level Reviewer: 5/15/2017 Date: —

SAMPLE CALCULATION

Sample ID: **N024053-013E @ pH 7.03**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.30 mL)

= **0.02212 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (6.20) (0.02212 N) (1) * 1000

= 137.1440 mg**/L**

Reporting results in two significant figures,

= **140 mg/L** as CaCO3

Julia Ramit 5/2/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02212 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (6.20 mL) (0.02212) (1) * 1000

= 137.1440 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **137.1440 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **140 mg/L**

Silvia Ramit 5/2/2017

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.80	50	0.00	0.050	MBLK
LCS-1	8.76	50	0.10	4.60	LCS
N024053-013E	7.03	50	0.00	6.20	SAMP
N024053-014E	7.36	50	0.00	7.10	SAMP
N024053-013EDUP	7.11	50	0.00	6.30	DUP
N024053-014EMS	7.82	50	0.00	11.60	MS
N024053-014EMSD	7.79	50	0.00	11.80	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.30**	ml
N H2SO4	**0.02212**	Normal
Date Analyzed:	**5/1/17**	
Time:	**10:00 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R170315B**	

Julia Ramit 5/2/2017

Date Analyzed:	5/1/17		**Reagents:**					**Standardization:**					**P = 0**
Time Started:	10:00 AM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	**mL**		**P < 1/2 T**
Analyzed By:	**LSR**			Hydrochloric Acid:		0			Titrant used:	11.3	**mL**		**P = 1/2 T**
				Sulfuric Acid:		R170315B							**P > 1/2 T**
									N H2SO4	0.02212	**N**		**P = T**

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.8				0.02212	0.00	0.05	0.05	1	0.00	1.11	
LCS-1	50	8.76				0.02212	0.10	4.50	4.60	1	2.21	101.77	
N024053-013E	50	7.03				0.02212	0.00	6.20	6.20	1	0.00	137.17	
N024053-014E	50	7.36				0.02212	0.00	7.10	7.10	1	0.00	157.08	
N024053-013EDU	50	7.11				0.02212	0.00	6.30	6.30	1	0.00	139.38	
N024053-014EMS	50	7.82				0.02212	0.00	11.60	11.60	1	0.00	256.64	
N024053-014EMS	50	7.79				0.02212	0.00	11.80	11.80	1	0.00	261.06	

Julia Ramit 5/2/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	5/1/17
Time:	10:00 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.11	1.11	1.11		P = 0
LCS-1	0.00	4.42	97.35	101.77	101.77		P < 1/2 T
N024053-013E	0.00	0.00	137.17	137.17	137.17		P = 0
N024053-014E	0.00	0.00	157.08	157.08	157.08		P = 0
N024053-013EDUP	0.00	0.00	139.38	139.38	139.38		P = 0
N024053-014EMS	0.00	0.00	256.64	256.64	256.64		P = 0
N024053-014EMSD	0.00	0.00	261.06	261.06	261.06		P = 0

Silvia Ramit 5/2/2017

Matrix: H2O

Date Extracted: 5/1/17
Time Extracted: 1600
Extracted By: KR

Date Analyzed: 5/1/17
Time Analyzed: 1000
Analyzed By: KR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-160/25B
Hydrochloric Acid: —
Sulfuric Acid: R170315B
Sodium Bicarbonate: CINV-150601A

pH meter CALIBRATION
SLOPE: 98.7%
pH 4 - 4.05 - CINV-170125B
7 - 7.03 - 170125C
10 - 10.03 - 160114A

Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
STANDARDIZATION							KR				
#1	50 mL	10.45	IWST170426A	5 mL	0.05N	-	~~4.20~~	11.30	50/50	$N_{H_2SO_4} = \frac{(2655/L)(5mL)}{(53)(V\ titrant)}$	=0.022/23.893
#2	1	10.44	1	1	1	-	~~4.30~~	11.30	1		
1) MBLK	50mL	5.80	—	—	—	0.0212	0	0.05	50/50		
2) LCS		8.76	IWST170426B	1 mL	0.05N		0.10	4.60			
3) MW24053-018E		7.03	—	—	—		0	6.20			
4) 14E		7.36	—	—	—		0	7.10			
5) 13EDUP		7.11	—	—	—		0	6.30			
6) 14EMS		7.82	IWST170426B	1 mL	0.05N		0	11.60			
7) 14EMSD		7.79	1	1	1		0	11.80			
8)											
9)											
10)											
11)											
12)											
13)											
14)											
15)											
16)			$P = \frac{(V_{pH\ 8.3})(N_{H_2SO_4})(50,000)}{VSx}$								
17)											
18)											
19)			$T = \frac{(V_{pH\ 4.5})(N_{H_2SO_4})(50,000)}{VSx}$								
20)											
MS											
MSD											
LCS											

Julia Ramit 5/2/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R114990
ASSET #: N024050 / N024053 / N024041

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 5/1/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/9/2017

2nd Level Reviewer: 5/15/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the orignal sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N024053-013E** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 10.6223 * 50

= 531.115

Reporting result in two significant values,

Sulfate, mg/L = 530

rba 5/11/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 10
Created: 4/25/2017 9:56:29 AM by IC-05
Last Update: 4/25/2017 1:09:21 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 9:57:11 AM
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:12:29 AM
3	Std - 0	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:27:47 AM
4	Std - 1	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:43:05 AM
5	Std - 2	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:58:23 AM
6	Std - 3	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:13:40 AM
7	Std - 4	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:28:59 AM
8	Std - 5	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:44:17 AM
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 12:14:45 PM
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 12:46:33 PM

rba 4/26/2017

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 10
Created: 4/25/2017 9:56:29 AM by IC-05
Last Update: 4/25/2017 1:09:21 PM by IC-05

No.	Name	Comment
1	BLANK,BLANK,1	BLANK
2	BLANK,BLANK,1	BLANK
3	Std - 0	iBLANK
4	Std - 1	STD-LOW
5	Std - 2	STD
6	Std - 3	STD
7	Std - 4	STD
8	Std - 5	STD-HIGH
9	ICV,ICV,1	ICV
10	ICB,ICB,1	ICB

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 58
Created: 5/1/2017 8:24:42 AM by IC-05
Last Update: 5/1/2017 4:37:01 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170425	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170425	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170425	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170425	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170425	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170425	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
10	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
11	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
12	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
13	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
14	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
15	N024050-001A,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
16	N024050-002B,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
17	N024050-003A,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
18	N024050-004A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
19	N024050-005A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
20	N024050-006A,SAMP,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
21	N024050-006A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
22	N024050-007A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
23	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
24	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
25	N024050-008A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
26	N024050-009B,SAMP,100	Unknown	1000.0	Anions Default	Anions_170425	Finished
27	N024050-010B,SAMP,5	Unknown	1000.0	Anions Default	Anions_170425	Finished
28	N024050-011B,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
29	N024050-012A,SAMP,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
30	N024053-013E,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
31	N024053-013E,SAMP,500	Unknown	1000.0	Anions Default	Anions_170425	Finished
32	N024053-014E,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
33	N024053-014E,SAMP,500	Unknown	1000.0	Anions Default	Anions_170425	Finished
34	N024050-005ADUP,DUP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
35	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
36	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
37	N024050-001AMS,MS,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
38	N024050-001AMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
39	N024050-004AMS,MS,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
40	N024041-002A,SAMP,10	Unknown	1000.0	Anions Default	Anions_170425	Finished
41	N024041-003A,SAMP,10	Unknown	1000.0	Anions Default	Anions_170425	Finished

rba 5/7/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 58
Created: 5/1/2017 8:24:42 AM by IC-05
Last Update: 5/1/2017 4:37:01 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	4/25/2017 9:57:11 AM	BLANK
2	BLANK,BLANK,1	4/25/2017 10:12:29 AM	BLANK
3	Std - 0	4/25/2017 10:27:47 AM	iBLANK
4	Std - 1	4/25/2017 10:43:05 AM	STD-LOW
5	Std - 2	4/25/2017 10:58:23 AM	STD
6	Std - 3	4/25/2017 11:13:40 AM	STD
7	Std - 4	4/25/2017 11:28:59 AM	STD
8	Std - 5	4/25/2017 11:44:17 AM	STD-HIGH
9	BLANK,BLANK,1	5/1/2017 8:25:14 AM	BLANK
10	BLANK,BLANK,1	5/1/2017 8:40:32 AM	BLANK
11	CCV-1,CCV,1	5/1/2017 8:55:57 AM	CCV
12	CCB-1,CCB,1	5/1/2017 9:11:15 AM	CCB
13	MB-H2O,MBLK,1	5/1/2017 9:26:34 AM	METHOD BLANK
14	LCS-H2O,LCS,1	5/1/2017 9:41:52 AM	LCS
15	N024050-001A,SAMP,50	5/1/2017 9:57:10 AM	SAMP,0.2>10mL
16	N024050-002B,SAMP,20	5/1/2017 10:12:28 AM	SAMP,0.5>10mL
17	N024050-003A,SAMP,50	5/1/2017 10:27:46 AM	SAMP,0.2>10mL
18	N024050-004A,SAMP,20	5/1/2017 10:43:04 AM	SAMP,0.5>10mL
19	N024050-005A,SAMP,20	5/1/2017 10:58:22 AM	SAMP,0.5>10mL
20	N024050-006A,SAMP,1	5/1/2017 11:13:40 AM	SAMP,10mL
21	N024050-006A,SAMP,20	5/1/2017 11:28:58 AM	SAMP,0.5>10mL
22	N024050-007A,SAMP,20	5/1/2017 11:44:16 AM	SAMP,0.5>10mL
23	CCV-2,CCV,1	5/1/2017 11:59:34 AM	CCV
24	CCB-2,CCB,1	5/1/2017 12:14:52 PM	CCB
25	N024050-008A,SAMP,20	5/1/2017 12:30:09 PM	SAMP,0.5>10mL
26	N024050-009B,SAMP,100	5/1/2017 12:45:27 PM	SAMP,0.1>10mL
27	N024050-010B,SAMP,5	5/1/2017 1:00:46 PM	SAMP,2>10mL
28	N024050-011B,SAMP,20	5/1/2017 1:16:04 PM	SAMP,0.5>10mL
29	N024050-012A,SAMP,1	5/1/2017 1:31:22 PM	SAMP,10mL
30	N024053-013E,SAMP,50	5/1/2017 1:46:40 PM	SAMP,0.2>10mL
31	N024053-013E,SAMP,500	5/1/2017 2:01:58 PM	SAMP,0.02>10mL
32	N024053-014E,SAMP,50	5/1/2017 2:17:15 PM	SAMP,0.2>10mL
33	N024053-014E,SAMP,500	5/1/2017 2:32:33 PM	SAMP,0.02>10mL
34	N024050-005ADUP,DUP,20	5/1/2017 2:47:51 PM	DUP,0.2>10mL
35	CCV-3,CCV,1	5/1/2017 3:03:09 PM	CCV
36	CCB-3,CCB,1	5/1/2017 3:18:27 PM	CCB
37	N024050-001AMS,MS,50	5/1/2017 3:33:44 PM	MS,0.2>10mL
38	N024050-001AMSD,MSD,50	5/1/2017 3:49:02 PM	MSD,0.2>10mL
39	N024050-004AMS,MS,20	5/1/2017 4:04:21 PM	MS,0.5>10mL
40	N024041-002A,SAMP,10	5/1/2017 4:19:39 PM	SAMP,1>10mL
41	N024041-003A,SAMP,10	5/1/2017 4:34:57 PM	SAMP,1>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 58
Created: 5/1/2017 8:24:42 AM by IC-05
Last Update: 5/1/2017 4:37:01 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N024050-001AMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
43	N024041-005A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
44	N024041-006A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
45	N024041-007A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
46	N024053-014E,SAMP,5	Unknown	1000.0	Anions Default	Anions_170425	Finished
47	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
48	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
49	N024053-013E,SAMP,5	Unknown	1000.0	Anions Default	Anions_170425	Finished
50	N024053-013EDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_170425	Finished
51	N024053-013EMS,MS,5	Unknown	1000.0	Anions Default	Anions_170425	Finished
52	N024053-013EMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_170425	Finished
53	N024053-013E,SAMP,500	Unknown	1000.0	Anions Default	Anions_170425	Finished
54	N024053-014E,SAMP,500	Unknown	1000.0	Anions Default	Anions_170425	Finished
55	N024041-004A,SAMP,20	Unknown	1000.0	Anions Default	Anions_170425	Finished
56	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
57	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
58	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 58
Created: 5/1/2017 8:24:42 AM by IC-05
Last Update: 5/1/2017 4:37:01 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N024050-001AMSD,MSD,50	5/1/2017 4:50:15 PM	MSD,0.2>10mL
43	N024041-005A,SAMP,20	5/1/2017 5:05:33 PM	SAMP,0.5>10mL
44	N024041-006A,SAMP,20	5/1/2017 5:20:51 PM	SAMP,0.5>10mL
45	N024041-007A,SAMP,20	5/1/2017 5:36:09 PM	SAMP,0.5>10mL
46	N024053-014E,SAMP,5	5/1/2017 5:51:27 PM	MS,5>10mL
47	CCV-4,CCV,1	5/1/2017 6:06:45 PM	CCV
48	CCB-4,CCB,1	5/1/2017 6:22:03 PM	CCB
49	N024053-013E,SAMP,5	5/1/2017 6:37:20 PM	SAMP,2>10mL
50	N024053-013EDUP,DUP,5	5/1/2017 6:52:38 PM	DUP,2>10mL
51	N024053-013EMS,MS,5	5/1/2017 7:07:57 PM	MS,2>10mL
52	N024053-013EMSD,MSD,5	5/1/2017 7:23:15 PM	MSD,2>10mL
53	N024053-013E,SAMP,500	5/1/2017 7:38:32 PM	SAMP,0.02>10mL
54	N024053-014E,SAMP,500	5/1/2017 7:53:50 PM	SAMP,0.02>10mL
55	N024041-004A,SAMP,20	5/1/2017 8:09:08 PM	SAMP,0.5>10mL
56	CCV-5,CCV,1	5/1/2017 8:24:26 PM	CCV
57	CCB-5,CCB,1	5/1/2017 8:39:44 PM	CCB
58	BLANK,BLANK,1	5/1/2017 8:55:01 PM	BLANK

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/25/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0741	0.1469	0.2965	0.7606	1.5970	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/25/2017

Initial Calibration:

Bromide	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.05	0.25	0.5	1.25	2.5	R^2
Area,mAU*min	0.0000	0.0030	0.0159	0.0316	0.0790	0.1589	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817D

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/25/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0552	0.2154	0.4386	1.1109	2.3109	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **ICV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2633867**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.210	0.10	1.250	0	96.8	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633869**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.199	0.10	1.250	0	95.9	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633873**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.189	0.10	1.250	0	95.1	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633875**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.167	0.10	1.250	0	93.4	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633878**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.172	0.10	1.250	0	93.7	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	1.187	0.10	1.250	0	94.9	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **ICV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2633830**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.188	0.50	2.000	0	109	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633832**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.904	0.50	2.000	0	95.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.913	0.50	2.000	0	95.6	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633852**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.923	0.50	2.000	0	96.1	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633862**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.921	0.50	2.000	0	96.1	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_CLP** Units: **mg/L** Prep Date: RunNo: **114990**
Client ID: **CCV** Batch ID: **R114990** TestNo: **EPA 300.0** Analysis Date: **5/1/2017** SeqNo: **2633865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.920	0.50	2.000	0	96.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **ICV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2633886**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.985	0.50	4.000	0	99.6	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633888**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.858	0.50	4.000	0	96.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.889	0.50	4.000	0	97.2	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633908**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.862	0.50	4.000	0	96.5	90	110				

Sample ID **CCV-4**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCV**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633913**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.864	0.50	4.000	0	96.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCV-5** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **114990**
Client ID: **CCV** Batch ID: **R114990** TestNo: **EPA 300.0** Analysis Date: **5/1/2017** SeqNo: **2633915**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.853	0.50	4.000	0	96.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **ICB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2633868**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633870**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633874**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_BRP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_BRPGE

Sample ID	**CCB-5**	SampType:	**CCB**	TestCode:	**300_W_BRP**	Units:	**mg/L**	Prep Date:		RunNo:	**114990**
Client ID:	**CCB**	Batch ID:	**R114990**	TestNo:	**EPA 300.0**			Analysis Date:	**5/1/2017**	SeqNo:	**2633885**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Bromide	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **ICB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2633831**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633833**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.123	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **ICB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2633887**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633889**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633909**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633914**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **114990**
Client ID: **CCB**	Batch ID: **R114990**	TestNo: **EPA 300.0**		Analysis Date: **5/1/2017**	SeqNo: **2633916**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/1/2017

Sample Name	Retention Time		Evaluation
CCV-1	Chloride	3.987	
CCV-2	Chloride	3.990	
CCV-3	Chloride	3.984	
CCV-4	Chloride	3.980	
CCV-5	Chloride	3.977	
	Average	3.984	
	Applied RT Window	3.784 - 4.184	
MB-R114990_CL	Chloride	3.977	PASS
LCS-R114990_CL	Chloride	3.983	PASS
N024053-013E	Chloride	3.983	PASS
N024053-014E	Chloride	3.987	PASS
N024050-005ADUP	Chloride	3.984	PASS
N024050-001AMS	Chloride	3.980	PASS
N024050-004AMS	Chloride	3.980	PASS
N024050-001AMSD	Chloride	3.980	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/1/2017

Sample Name	Retention Time		Evaluation
CCV-1	Bromide	5.307	
CCV-2	Bromide	5.310	
CCV-3	Bromide	5.304	
CCV-4	Bromide	5.300	
CCV-5	Bromide	5.297	
	Average	5.304	
	Applied RT Window	5.104 - 5.504	
MB-R114990_BR	Bromide	N.A.	N.A.
LCS-R114990_BR	Bromide	5.303	PASS
N024053-014E	Bromide	5.290	PASS
N024053-013E	Bromide	5.293	PASS
N024053-013EDUP	Bromide	5.297	PASS
N024053-013EMS	Bromide	5.300	PASS
N024053-013EMSD	Bromide	5.300	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/1/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	8.977	
CCV-2	Sulfate	8.994	
CCV-3	Sulfate	8.980	
CCV-4	Sulfate	8.947	
CCV-5	Sulfate	8.937	
	Average	8.967	
	Applied RT Window	8.767 - 9.167	
MB-R114990_SO4	Sulfate	N.A.	N.A.
LCS-R114990_SO4	Sulfate	8.980	PASS
N024053-013E	Sulfate	8.984	PASS
N024053-014E	Sulfate	8.984	PASS
N024050-005ADUP	Sulfate	8.984	PASS
N024050-001AMS	Sulfate	8.960	PASS
N024050-004AMS	Sulfate	8.960	PASS
N024050-001AMSD	Sulfate	8.960	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 9/19/2016 , 9/20/2016
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.048	0.050	0.049	0.047	0.047	0.048	0.048	0.020	0.0011	**0.0034**	0.010	0.10
Chloride	0.217	0.214	0.214	0.214	0.215	0.216	0.214	0.025	0.0011	**0.0036**	0.010	0.50
Nitrite	0.044	0.046	0.045	0.044	0.045	0.044	0.044	0.020	0.0010	**0.0031**	0.010	0.05
Bromide	0.051	0.049	0.051	0.049	0.050	0.049	0.057	0.040	0.0029	**0.0090**	0.020	0.20
Nitrate	0.049	0.048	0.047	0.048	0.061	0.047	0.047	0.020	0.0049	**0.0154**	0.030	0.05
Phosphate	0.063	0.058	0.061	0.058	0.055	0.059	0.060	0.040	0.0025	**0.0080**	0.020	0.10
Sulfate	0.290	0.286	0.281	0.285	0.292	0.286	0.281	0.050	0.0041	**0.0129**	0.025	0.50

MDL/LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 12/5/2016
Analyst: Ria B. Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0034**	0.010	0.025	0.10	0.1029	**103**
Chloride	**0.0036**	0.010	0.120	0.50	0.5745	**115**
Nitrite	**0.0031**	0.010	0.028	0.05	0.0656	**131**
Bromide	**0.0090**	0.020	0.025	0.20	0.1962	**98**
Nitrate	**0.0154**	0.030	0.056	0.05	0.0744	**149**
Phosphate	**0.0080**	0.020	0.023	0.10	0.1004	**100**
Sulfate	**0.0129**	0.025	0.254	0.50	0.688	**138**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115137, R115162 **Analyst:** REB

ASSET #: N024053 **Date Analyzed:** 5/9/17, 5/10/17

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 05/12/17 Date:

2nd Level Reviewer 5/15/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N024053-014C** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.6685*20

= 13.37 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 13

RB 05/12/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

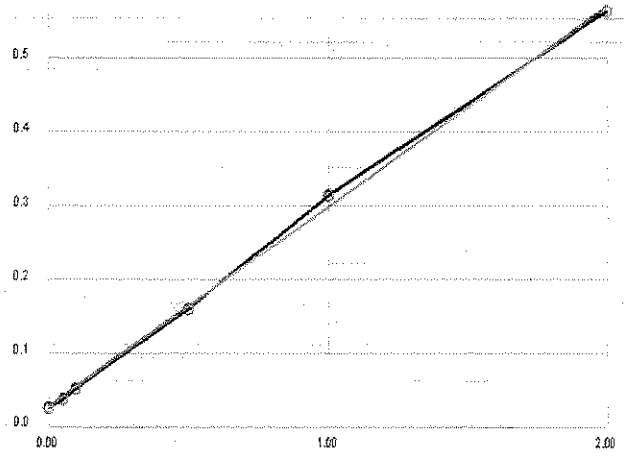
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2722x + 0.027
Correlation	.999342

Calibrant	Energy	Set	Conc
1	0.0263	0.0000	-0.0025
2	0.0375	0.0500	0.0386
3	0.0522	0.1000	0.0926
4	0.1605	0.5000	0.4904
5	0.3144	1.0000	1.0557
6	0.5647	2.0000	1.9752



Notes:

2% CuSO4- R170502D
R1 Buffer- R170502E
R2 Coloring reagent- R170502F

STD 1°- ISST160817E
STD 2°- ISST160211J

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

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High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

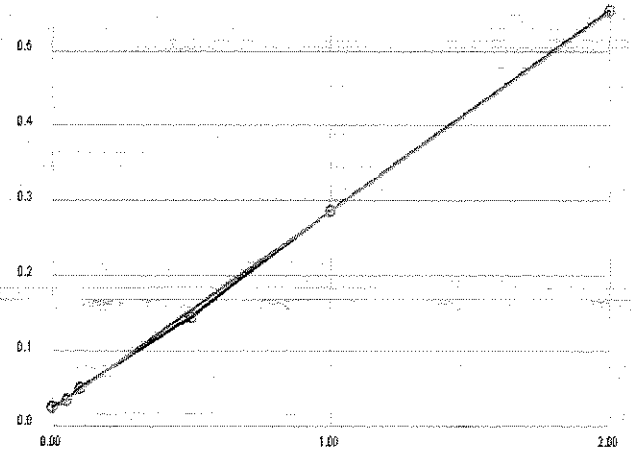
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2653x + 0.0216
Correlation	.999773

Calibrant	Energy	Set	Conc
1	0.0248	0.0000	0.0121
2	0.0360	0.0500	0.0544
3	0.0502	0.1000	0.1079
4	0.1454	0.5000	0.4668
5	0.2874	1.0000	1.0021
6	0.5539	2.0000	2.0068



Notes:

05/12/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **ICV**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **CCV**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.496	0.050	0.5000	0	99.3	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **CCV**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.457	0.050	0.5000	0	91.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115162**
Client ID: **ICV**	Batch ID: **R115162**	TestNo: **SM4500-NO3**		Analysis Date: **5/10/2017**	SeqNo: **2640328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.479	0.050	0.5000	0	95.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115162**
Client ID: **CCV**	Batch ID: **R115162**	TestNo: **SM4500-NO3**		Analysis Date: **5/10/2017**	SeqNo: **2640339**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.538	0.050	0.5000	0	108	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115162**
Client ID: **CCV**	Batch ID: **R115162**	TestNo: **SM4500-NO3**		Analysis Date: **5/10/2017**	SeqNo: **2640351**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.5	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115162**
Client ID: **CCV**	Batch ID: **R115162**	TestNo: **SM4500-NO3**		Analysis Date: **5/10/2017**	SeqNo: **2640359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.487	0.050	0.5000	0	97.4	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **ICB**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **CCB**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115137**
Client ID: **CCB**	Batch ID: **R115137**	TestNo: **SM4500-NO3**		Analysis Date: **5/9/2017**	SeqNo: **2639166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115162**
Client ID: **ICB**	Batch ID: **R115162**	TestNo: **SM4500-NO3**		Analysis Date: **5/10/2017**	SeqNo: **2640329**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115162**
Client ID: **CCB**	Batch ID: **R115162**	TestNo: **SM4500-NO3**		Analysis Date: **5/10/2017**	SeqNo: **2640340**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115162**
Client ID: **CCB**	Batch ID: **R115162**	TestNo: **SM4500-NO3**		Analysis Date: **5/10/2017**	SeqNo: **2640352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115162**
Client ID: **CCB**	Batch ID: **R115162**	TestNo: **SM4500-NO3**		Analysis Date: **5/10/2017**	SeqNo: **2640381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

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Las Vegas, NV. 89118
702-307-2659
702-307-2691
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Time start: 05-09-2017 20:53
Time end: 05-09-2017 23:14

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	22:42:25	-0.0055		0.0255
2	<BLANK>	22:43:20	-0.0073		0.0250
3	<CAL1>	22:44:20	-0.0025	[0]	0.0263
4	<CAL2>	22:45:15	0.0386	[0.05]	0.0375
5	<CAL3>	22:46:10	0.0926	[0.1]	0.0522
6	<CAL4>	22:47:12	0.4904	[0.5]	0.1605
7	<CAL5>	22:48:06	1.0557	[1]	0.3144
8	<CAL6>	22:49:01	1.9752	[2]	0.5647
9	,BLANK,BLANK,1,	22:50:03	0.0155		0.0312
10	,ICV,ICV,1,	22:50:57	0.5018		0.1636
11	,ICB,ICB,1,	22:51:58	0.0000		0.0270
12	,MB-H2O,MBLK,1,	22:52:53	-0.0106		0.0241
13	,LCS-H2O,LCS,1,	22:53:49	0.5323		0.1719
14	,N024050-002A,SAMP,10,	22:54:49	0.3740		0.1288
15	,N024050-002ADUP,DUP,10,	22:55:44	0.3475		0.1216
16	,N024050-002AMS,MS,10,	22:56:40	0.8214		0.2506
17	,N024050-002AMSD,MSD,10,	22:57:41	0.8497		0.2583
18	,N024037-010C,SAMP,1,	22:58:23	0.0621		0.0439
19	,N024037-013C,SAMP,1,	22:59:13	0.5154		0.1673
20	,N024050-009A,SAMP,10,	22:59:55	0.4915		0.1608
21	,BLANK,BLANK,1,	23:00:44	0.0041		0.0281
22	,CCV-1,CCV,1,	23:01:26	0.4963		0.1621
23	,CCB-1,CCB,1,	23:02:09	-0.0011		0.0267
24	,N024041-012D,SAMP,10,	23:02:59	0.2678		0.0999
25	,N024041-013D,SAMP,10,	23:03:41	0.4140		0.1397
26	,N024041-014I,SAMP,10,	23:04:24	0.3163		0.1131

RB 05/11/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N024050-010A,SAMP,1,	23:05:12	0.0555		0.0421
28	,N024050-011A,SAMP,20,	23:05:55	0.8923		0.2699
29	,N024053-005C,SAMP,1,	23:06:43	0.0133		0.0306
NR 30	,N024053-006C,SAMP,10,	23:07:26	-0.0099		0.0243
31	,N024053-007C,SAMP,1,	23:08:15	-0.0036		0.0260
32	,N024053-013C,SAMP,5,	23:08:57	0.4801		0.1577
NR 33	,N024053-014C,SAMP,1,	23:09:41	11.7510	[HL][OR]	3.2260
NR 34	,CCV-2,CCV,1,	23:10:29	0.6322		0.1991
35	,CCV-2,CCV,1,	23:11:12	0.4570		0.1514
36	,CCB-2,CCB,1,	23:11:54	0.0107		0.0299

RB 05/11/17

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Time start: 05-10-2017 20:08
Time end: 05-10-2017 23:00

		EPA 353.2 NO3 as N			
			ppm	Flags	OD
1	<BLANK>	22:20:21	0.0261		0.0285
2	<BLANK>	22:21:14	0.0208		0.0271
3	<CAL1>	22:22:15	0.0121	[0]	0.0248
4	<CAL2>	22:23:11	0.0544	[0.05]	0.0360
5	<CAL3>	22:24:06	0.1079	[0.1]	0.0502
6	<CAL4>	22:25:06	0.4668	[0.5]	0.1454
7	<CAL5>	22:26:02	1.0021	[1]	0.2874
8	<CAL6>	22:26:57	2.0068	[2]	0.5539
9	,BLANK,BLANK,1,	22:27:59	0.0408		0.0324
10	,ICV,ICV,1,	22:28:53	0.4785		0.1485
11	,ICB,ICB,1,	22:29:48	0.0144		0.0254
12	,MB-H2O,MBLK,1,	22:30:50	0.0076		0.0236
13	,LCS-H2O,LCS,1,	22:31:44	0.5064		0.1559
14	,N024053-006C,SAMP,1,	22:32:45	0.0238		0.0279
15	,N024053-006CDUP,DUP,1,	22:33:41	0.0140		0.0253
16	,N024053-006CMS,MS,1,	22:34:36	0.5056		0.1557
17	,N024053-006CMSD,MSD,1,	22:35:36	0.5229		0.1603
18	,N024053-014C,SAMP,20,	22:36:32	0.6685		0.1989
19	,N024064-001C,SAMP,10,	22:37:27	1.1759		0.3335
20	,N024064-002C,SAMP,1,	22:38:28	0.0363		0.0312
21	,BLANK,BLANK,1,	22:39:23	0.0099		0.0242
22	,CCV-1,CCV,1,	22:40:19	0.5376		0.1642
23	,CCB-1,CCB,1,	22:41:20	0.0163		0.0259
24	,N024064-003C,SAMP,5,	22:42:14	0.5267		0.1613
25	,N024064-004C,SAMP,1,	22:43:16	0.2726		0.0939
26	,N024064-005C,SAMP,5,	22:44:11	0.4359		0.1372

RB 05/12/17

500

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N024064-006C,SAMP,1,	22:44:59	0.4091		0.1301
28	,N024064-007C,SAMP,5,	22:45:43	0.3985		0.1273
29	,N024064-009C,SAMP,5,	22:46:33	0.6820		0.2025
30	,N024064-010C,SAMP,5,	22:47:15	0.6835		0.2029
31	,N024064-012C,SAMP,10,	22:47:58	0.8328		0.2425
32	,N024064-013C,SAMP,1,	22:48:46	0.0446		0.0334
33	,N024064-014C,SAMP,20,	22:49:29	0.7725		0.2265
34	,CCV-2,CCV,1,	22:50:11	0.4977		0.1536
35	,CCB-2,CCB,1,	22:51:01	0.0125		0.0249
36	,N024074-001C,SAMP,1,	22:51:43	0.7454		0.2193
37	,N024074-002C,SAMP,1,	22:52:26	0.5199		0.1595
38	,N024074-003C,SAMP,5,	22:53:15	0.9640		0.2773
39	,N024074-004C,SAMP,1,	22:53:58	0.6756		0.2008
40	,N024074-005C,SAMP,5,	22:54:41	0.8332		0.2426
41	,N024074-006C,SAMP,1,	22:55:29	0.1218		0.0539
42	,BLANK,	22:56:12	0.0027		0.0223
43	,CCV-3,CCV,1,	22:56:54	0.4868		0.1507
44	,CCV-3,CCV,1, not used	22:57:44	0.5007		0.1544
45	,CCB-3,CCB,1,	22:58:27	0.0080		0.0237

RB 05/12/17

501

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/09/17
Time Analyzed: 08:53 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170502E
Color reagent: R170502F
2% Copper Sulfate: R170502D
Ammonium Hydroxide: CINV-170424A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N024050-002A		8.89						
2)	N024050-009A		7.89						
3)	N024050-010A		8.50						
4)	N024050-011A		8.11						
5)	N024053-005C		8.15						
6)	N024053-006C		6.99						
7)	N024053-007C		8.34						
8)	N024053-013C		7.72						
9)	N024053-014C		7.72						
10)									
11)									
12)									
13)									
14)									
15)									
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/12/17

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62101
ASSET #: N024053
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/8/2017

Method:

- [ ] EPA 6010B / 200.7
- [ ] EPA 7470A / 7471A/245.1
- [X] EPA 6020 / 200.8
- [ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?		X				
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

Mn in N024053-003B, 008B & Cr in N024053-013B is over linear range. For dilution.
%Rec of Ge [1] & Rh [2] in N024053-005B, 006B & 013B failed. Se & Mo for rerun.
%Rec of Ge [2] in N024053-009B & 010B failed. As for rerun.
%Rec of Cr in N024038-004B PS/MS/MSD failed. However LCS & DT passed criteria.
For Confirmation:
N024053-001B (6020) = 1.3 ug/L :confirmation: 1.315 ug/L ; N024053-001A (218.6) = 0.079 ug/L :confirmation: 1.371 ug/L

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/15/2017 Date: —

2nd Level Reviewer 5/15/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62121
ASSET #: N024053

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/8/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).		X				
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For N024053-014B & 015B only.
Cr in N024053-014B PS/MS/MSD & 015B is over linear range. For dilution.
%Rec of Rh [2] in N024053-014B PS/MS/MSD failed. Mo for rerun.
%Rec of Cr in N024053-014B PS/MS/MSD failed. However LCS & DT passed criteria.
Dilution test failed for As. However PS, passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 5/15/2017 Date: —

2nd Level Reviewer _____ 5/15/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62101
ASSET #: N024053

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/10/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution Mn in N024053-003B, 008B & Cr in N024053-013B only.
For Se & Mo in N024053-005B, 006B & 013B rerun only.
For As in N024053-009B & 010B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 5/15/2017 Date: _____

2nd Level Reviewer _____ 5/15/2017 Date: _____

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62121
ASSET #: N024053

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/10/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution Cr in N024053-014B PS/MS/MSD & 015B only.
For Mo in N024053-014B PS/MS/MSD rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/15/2017 Date: —

2nd Level Reviewer 5/15/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N024053-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 1.34464 * 1 * (25/25)

Chromium , ug/L = 1.34464

Reporting results in two significant figures,

Chromium , ug/L = 1.3

% RSD SUMMARY

PERCENT RSD SUMMARY: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	2.85	15	PASS	0.11	5.86	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	5.61	15	PASS	0.52	1.87	15	PASS
Std3-5/50 ppb	ICAL	1	5.057	1.11	15	PASS	5.077	1.81	15	PASS
Std4-10/100 ppb	ICAL	1	10.11	0.86	15	PASS	10.24	0.68	15	PASS
Std5-20/200 ppb	ICAL	1	20.27	1.12	15	PASS	20.08	1.079	15	PASS
Std6-40/400 ppb	ICAL	1	40.38	0.2	15	PASS	40.52	0.82	15	PASS
Std7-100/1000 ppb	ICAL	1	100.93	1.38	15	PASS	101.93	1.42	15	PASS
Std8-200/2000 ppb	ICAL	1	199.42	0.69	15	PASS	198.91	0.95	15	PASS
ICV	ICV	1	9.57	0.8	15	PASS	94.0053	0.39	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.97	2.37	20	PASS	0.5	8.16	20	PASS
ICSA1	ICSA	1	0.036	20.91	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.91	0.95	15	PASS	18.086	1.73	15	PASS
MB-62101	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-62101	LCS	1	9.42	0.91	15	PASS	96.82	1.15	15	PASS
N024038-004B	SAMP	1	356.25	0.54	15	PASS	1.034	7.28	15	PASS
N024038-004B	SAMP	5	85.98	0.91	15	PASS	0.22	23.089	15	<PQL
N024038-004B-PS	PS	1	345.098	0.77	15	PASS	86.88	0.27	15	PASS
N024038-004B-MS	MS	1	350.16	0.8	15	PASS	87.56	1.52	15	PASS
N024038-004B-MSD	MSD	1	347.81	1.18	15	PASS	86.71	0.64	15	PASS
N024038-005B	SAMP	1	<0.000	N/A	15	<PQL	1085.99	0.46	15	PASS
N024038-006B	SAMP	1	<0.000	N/A	15	<PQL	997.48	1.98	15	PASS
N024038-007B	SAMP	1	<0.000	N/A	15	<PQL	1049.57	0.19	15	PASS
CCV1	CCV	1	20.58	0.33	15	PASS	19.9	0.53	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N024038-008B	SAMP	1	<0.000	N/A	15	<PQL	172.99	0.22	15	PASS
N024038-009B	SAMP	1	<0.000	N/A	15	<PQL	259.62	1.11	15	PASS
N024038-010B	SAMP	1	<0.000	N/A	15	<PQL	399.2	2.032	15	PASS
N024038-014B	SAMP	1	<0.000	N/A	15	<PQL	644.27	0.74	15	PASS
N024038-015B	SAMP	1	0.032	29	15	<PQL	0.17	1.96	15	PASS
N024053-001B	SAMP	1	1.34	1.74	15	PASS	17.69	1.47	15	PASS
N024053-002B	SAMP	1	0.037	12.049	15	PASS	0.18	11.34	15	PASS
N024053-003B	SAMP	1	0.19	9.48	15	PASS	266.82	0.36	15	PASS
N024053-004B	SAMP	1	0.029	4.2	15	PASS	0.21	6.49	15	PASS
N024053-005B	SAMP	1	<0.000	N/A	15	<PQL	83.83	1.91	15	PASS
CCV2	CCV	1	20.55	0.78	15	PASS	19.84	0.39	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N024053-006B	SAMP	1	<0.000	N/A	15	<PQL	84.99	0.72	15	PASS
N024053-007B	SAMP	1	0.032	15.36	15	<PQL	0.13	9.32	15	PASS
N024053-008B	SAMP	1	<0.000	N/A	15	<PQL	1618.95	1.34	15	PASS

PERCENT RSD SUMMARY: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024053-009B	SAMP	1	34.14	1.54	15	PASS	4.029	0.24	15	PASS
N024053-010B	SAMP	1	0.91	0.39	15	PASS	4.86	1.11	15	PASS
N024053-013B	SAMP	1	483.94	0.86	15	PASS	13.45	0.22	15	PASS
MB-62121	MBLK	1	0.025	37.97	15	<PQL	<0.000	N/A	15	<PQL
LCS-62121	LCS	1	9.79	0.87	15	PASS	96.25	1.008	15	PASS
N024053-014B	SAMP	1	480.23	0.51	15	PASS	14.46	0.75	15	PASS
N024053-014B	SAMP	5	107.38	0.57	15	PASS	3.13	0.89	15	PASS
CCV3	CCV	1	20.39	0.17	15	PASS	19.51	0.64	15	PASS
CCB3	CCB	1	0.0052	161.41	15	<PQL	<0.000	N/A	15	<PQL
N024053-014B-PS	PS	1	475	1.61	15	PASS	101.012	0.88	15	PASS
N024053-014B-MS	MS	1	473.15	0.54	15	PASS	99.98	0.43	15	PASS
N024053-014B-MSD	MSD	1	471.43	2.19	15	PASS	98.79	2.048	15	PASS
N024053-015B	SAMP	1	6099.51	1.15	15	PASS	4.14	0.5	15	PASS
N024064-001B	SAMP	1	73.9	0.15	15	PASS	<0.000	N/A	15	<PQL
N024064-002B	SAMP	1	0.43	1.76	15	PASS	0.018	45.66	15	<PQL
N024064-003B	SAMP	1	22.12	1.021	15	PASS	2.064	1.086	15	PASS
N024064-004B	SAMP	1	6.31	0.92	15	PASS	3.44	0.65	15	PASS
N024064-005B	SAMP	1	19.87	1.073	15	PASS	0.3	15.22	15	<PQL
N024064-006B	SAMP	1	<0.000	N/A	15	<PQL	67.48	0.36	15	PASS
CCV4	CCV	1	20.51	1.65	15	PASS	19.86	2.65	15	PASS
CCB4	CCB	1	0.051	12.59	15	PASS	<0.000	N/A	15	<PQL
N024064-007B	SAMP	1	2247.78	0.75	15	PASS	1.89	0.71	15	PASS
N024064-009B	SAMP	1	13.22	0.37	15	PASS	0.28	16.25	15	<PQL
N024064-010B	SAMP	1	12.62	2.09	15	PASS	0.24	14.38	15	PASS
N024064-012B	SAMP	1	333.92	1.05	15	PASS	1.96	5.16	15	PASS
N024064-013B	SAMP	1	4.67	2.21	15	PASS	222.93	1.0037	15	PASS
N024064-014B	SAMP	1	1711.45	0.54	15	PASS	3	0.92	15	PASS
CCV5	CCV	1	20.16	0.36	15	PASS	19.75	0.095	15	PASS
CCB5	CCB	1	0.099	9.42	15	PASS	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.94	1.27	20	PASS	0.48	2.66	20	PASS
ICSA2	ICSA	1	0.11	17.19	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.53	2.19	15	PASS	18.45	1.23	15	PASS

PERCENT RSD SUMMARY: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	21.055	15	<PQL	0.081	32.81	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	1.71	15	PASS	0.45	39.26	15	<PQL
Std3-5/50 ppb	ICAL	1	5	2.81	15	PASS	5.11	7.1	15	PASS
Std4-10/100 ppb	ICAL	1	9.98	2.24	15	PASS	10.3	1.98	15	PASS
Std5-20/200 ppb	ICAL	1	20.0042	1.43	15	PASS	19.67	2.8	15	PASS
Std6-40/400 ppb	ICAL	1	40.16	1.07	15	PASS	39.49	1.65	15	PASS
Std7-100/1000 ppb	ICAL	1	98.35	1.45	15	PASS	99.68	3.23	15	PASS
Std8-200/2000 ppb	ICAL	1	200.79	0.74	15	PASS	200.27	0.34	15	PASS
ICV	ICV	1	9.87	2.81	15	PASS	9.88	6.35	15	PASS
ICB	ICB	1	0.002	296.61	15	<PQL	0.0043	186.26	15	<PQL
LLICV	CCV1	1	0.094	25.16	20	<PQL	0.5	3.85	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.017	119.2	15	<PQL
ICSAB1	ICSAB	1	19.86	2.21	15	PASS	18.81	2.28	15	PASS
MB-62101	MBLK	1	0.0012	318.35	15	<PQL	0.007	370.43	15	<PQL
LCS-62101	LCS	1	9.54	0.95	15	PASS	8.89	6.21	15	PASS
N024038-004B	SAMP	1	1.13	7.022	15	PASS	2.11	4.3	15	PASS
N024038-004B	SAMP	5	0.25	18.11	15	NR!	0.59	23.86	15	NR!
N024038-004B-PS	PS	1	10.61	2.0037	15	PASS	11.14	4.68	15	PASS
N024038-004B-MS	MS	1	10.56	1.55	15	PASS	10.82	6.52	15	PASS
N024038-004B-MSD	MSD	1	10.91	1.47	15	PASS	10.54	8.13	15	PASS
N024038-005B	SAMP	1	0.36	2.55	15	PASS	0.34	20.99	15	<PQL
N024038-006B	SAMP	1	3	2.95	15	PASS	0.062	70.017	15	<PQL
N024038-007B	SAMP	1	2.73	4.037	15	PASS	0.031	165.59	15	<PQL
CCV1	CCV	1	19.62	2.97	15	PASS	21.37	3.16	15	PASS
CCB1	CCB	1	0.0032	327.01	15	<PQL	0.0047	342.14	15	<PQL
N024038-008B	SAMP	1	0.42	14.33	15	PASS	0.046	31.65	15	<PQL
N024038-009B	SAMP	1	1.87	5.61	15	PASS	0.082	79.28	15	<PQL
N024038-010B	SAMP	1	0.5	1.86	15	PASS	<0.000	0	15	PASS
N024038-014B	SAMP	1	26.056	1.91	15	PASS	0.23	20.4	15	<PQL
N024038-015B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N024053-001B	SAMP	1	27.56	1.55	15	PASS	0.064	58.078	15	<PQL
N024053-002B	SAMP	1	0.0011	609.89	15	<PQL	<0.000	N/A	15	<PQL
N024053-003B	SAMP	1	5.71	1.11	15	PASS	0.1	33.0062	15	<PQL
N024053-004B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N024053-005B	SAMP	1	1.29	6.94	15	PASS	0.059	18.89	15	<PQL
CCV2	CCV	1	19.78	1.38	15	PASS	20.18	1.87	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.0042	183.35	15	<PQL
N024053-006B	SAMP	1	1.33	7.36	15	PASS	0.069	69.79	15	<PQL
N024053-007B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N024053-008B	SAMP	1	13.19	2.63	15	PASS	0.39	43.61	15	<PQL

PERCENT RSD SUMMARY: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024053-009B	SAMP	1	2.7	0.79	15	PASS	4.98	11.73	15	PASS
N024053-010B	SAMP	1	4.18	3.95	15	PASS	4.9	5.92	15	PASS
N024053-013B	SAMP	1	2.71	5.39	15	PASS	3.97	1.21	15	PASS
MB-62121	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-62121	LCS	1	9.71	4.26	15	PASS	9.68	6.79	15	PASS
N024053-014B	SAMP	1	2.59	5.23	15	PASS	3.87	4.58	15	PASS
N024053-014B	SAMP	5	0.61	3.42	15	PASS	0.95	11.49	15	PASS
CCV3	CCV	1	19.73	2.13	15	PASS	20.63	0.67	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N024053-014B-PS	PS	1	12.14	0.99	15	PASS	12.36	7.58	15	PASS
N024053-014B-MS	MS	1	11.85	0.11	15	PASS	12.71	2.22	15	PASS
N024053-014B-MSD	MSD	1	12.38	1.47	15	PASS	13.18	5.79	15	PASS
N024053-015B	SAMP	1	3.19	4.76	15	PASS	4.86	2.88	15	PASS
N024064-001B	SAMP	1	1.037	3.41	15	PASS	7.4	4.92	15	PASS
N024064-002B	SAMP	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N024064-003B	SAMP	1	0.67	5.78	15	PASS	0.96	24.73	15	NR!
N024064-004B	SAMP	1	2.92	4.93	15	PASS	0.27	19.98	15	<PQL
N024064-005B	SAMP	1	0.94	4.46	15	PASS	1.04	10.92	15	PASS
N024064-006B	SAMP	1	2.053	3.29	15	PASS	0.39	13.36	15	PASS
CCV4	CCV	1	19.68	1.058	15	PASS	20.24	0.85	15	PASS
CCB4	CCB	1	0.0061	132.6	15	<PQL	0.0097	85.66	15	<PQL
N024064-007B	SAMP	1	1.98	2.19	15	PASS	1.91	11.85	15	PASS
N024064-009B	SAMP	1	0.75	8.13	15	PASS	1.76	2.73	15	PASS
N024064-010B	SAMP	1	0.74	3.28	15	PASS	1.83	17.57	15	NR!
N024064-012B	SAMP	1	1.17	5.29	15	PASS	3.12	1.47	15	PASS
N024064-013B	SAMP	1	10.61	1.54	15	PASS	0.3	34.97	15	<PQL
N024064-014B	SAMP	1	32.34	1.2	15	PASS	21.49	3.077	15	PASS
CCV5	CCV	1	19.45	1.26	15	PASS	19.9	4.74	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	0.0053	155.95	15	<PQL
LLCCV1	CCV2	1	0.08	3.97	20	PASS	0.38	9.34	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	0	15	PASS
ICSAB2	ICSAB	1	19.71	1.25	15	PASS	18.72	4.045	15	PASS

PERCENT RSD SUMMARY: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.074	15.98	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.48	1.7	15	PASS
Std3-5/50 ppb	ICAL	1	4.88	0.96	15	PASS
Std4-10/100 ppb	ICAL	1	9.86	0.53	15	PASS
Std5-20/200 ppb	ICAL	1	19.85	0.79	15	PASS
Std6-40/400 ppb	ICAL	1	39.95	1.28	15	PASS
Std7-100/1000 ppb	ICAL	1	100.071	0.8	15	PASS
Std8-200/2000 ppb	ICAL	1	205.12	0.23	15	PASS
ICV	ICV	1	10.74	2	15	PASS
ICB	ICB	1	0.35	3.97	15	PASS
LLICV	CCV1	1	0.45	4.57	20	PASS
ICSA1	ICSA	1	0.066	1.3	15	PASS
ICSAB1	ICSAB	1	22.97	0.68	15	PASS
MB-62101	MBLK	1	0.13	4.56	15	PASS
LCS-62101	LCS	1	9.97	0.84	15	PASS
N024038-004B	SAMP	1	15.0068	1.22	15	PASS
N024038-004B	SAMP	5	3.11	1.32	15	PASS
N024038-004B-PS	PS	1	25.37	1.29	15	PASS
N024038-004B-MS	MS	1	25.75	0.8	15	PASS
N024038-004B-MSD	MSD	1	25.96	0.77	15	PASS
N024038-005B	SAMP	1	4.55	1.48	15	PASS
N024038-006B	SAMP	1	192.83	0.25	15	PASS
N024038-007B	SAMP	1	191.25	0.22	15	PASS
CCV1	CCV	1	20.84	0.59	15	PASS
CCB1	CCB	1	0.33	6.26	15	PASS
N024038-008B	SAMP	1	39.8	0.46	15	PASS
N024038-009B	SAMP	1	91.95	0.85	15	PASS
N024038-010B	SAMP	1	67.83	0.76	15	PASS
N024038-014B	SAMP	1	18.019	2.27	15	PASS
N024038-015B	SAMP	1	0.15	1.34	15	PASS
N024053-001B	SAMP	1	7.41	1.11	15	PASS
N024053-002B	SAMP	1	0.037	36.72	15	<PQL
N024053-003B	SAMP	1	24.31	0.23	15	PASS
N024053-004B	SAMP	1	0.099	12.47	15	PASS
N024053-005B	SAMP	1	17.75	1.81	15	PASS
CCV2	CCV	1	20.15	0.84	15	PASS
CCB2	CCB	1	0.091	12.73	15	PASS
N024053-006B	SAMP	1	17.63	0.77	15	PASS
N024053-007B	SAMP	1	0.042	22.27	15	<PQL
N024053-008B	SAMP	1	42.56	0.37	15	PASS

PERCENT RSD SUMMARY: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N024053-009B	SAMP	1	21.97	1.38	15	PASS
N024053-010B	SAMP	1	41.49	0.29	15	PASS
N024053-013B	SAMP	1	22.78	0.9	15	PASS
MB-62121	MBLK	1	0.085	8.6	15	PASS
LCS-62121	LCS	1	10.13	2.46	15	PASS
N024053-014B	SAMP	1	22.58	1.29	15	PASS
N024053-014B	SAMP	5	4.48	1.26	15	PASS
CCV3	CCV	1	20.25	1.86	15	PASS
CCB3	CCB	1	0.12	15.3	15	<PQL
N024053-014B-PS	PS	1	33.87	0.13	15	PASS
N024053-014B-MS	MS	1	33.81	0.5	15	PASS
N024053-014B-MSD	MSD	1	34.083	1.33	15	PASS
N024053-015B	SAMP	1	47.74	1.65	15	PASS
N024064-001B	SAMP	1	3.5	3.0054	15	PASS
N024064-002B	SAMP	1	0.037	28.88	15	<PQL
N024064-003B	SAMP	1	19.75	0.74	15	PASS
N024064-004B	SAMP	1	53.35	0.96	15	PASS
N024064-005B	SAMP	1	10.34	1.91	15	PASS
N024064-006B	SAMP	1	97.17	0.29	15	PASS
CCV4	CCV	1	20.44	1.92	15	PASS
CCB4	CCB	1	0.14	19.48	15	<PQL
N024064-007B	SAMP	1	9.85	2.055	15	PASS
N024064-009B	SAMP	1	11.92	0.88	15	PASS
N024064-010B	SAMP	1	11.86	0.71	15	PASS
N024064-012B	SAMP	1	6.084	1.42	15	PASS
N024064-013B	SAMP	1	86.27	0.46	15	PASS
N024064-014B	SAMP	1	7.85	1.8	15	PASS
CCV5	CCV	1	20.3	0.41	15	PASS
CCB5	CCB	1	0.1	6.39	15	PASS
LLCCV1	CCV2	1	0.42	2.8	20	PASS
ICSA2	ICSA	1	0.0074	130.27	15	<PQL
ICSAB2	ICSAB	1	23.12	2.046	15	PASS

PERCENT RSD SUMMARY: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.099	4.98	15	PASS	0.13	17.51	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.49	4.18	15	PASS	0.57	3.17	15	PASS
Std3-5/50 ppb	ICAL	1	5.0025	2.26	15	PASS	5.12	2.7	15	PASS
Std4-10/100 ppb	ICAL	1	10	2.16	15	PASS	10.12	2.12	15	PASS
Std5-20/200 ppb	ICAL	1	19.9	0.54	15	PASS	20.46	0.24	15	PASS
Std6-40/400 ppb	ICAL	1	39.082	1.6	15	PASS	40.24	1.12	15	PASS
Std7-100/1000 ppb	ICAL	1	99.39	0.6	15	PASS	101.73	0.67	15	PASS
Std8-200/2000 ppb	ICAL	1	200.5	0.67	15	PASS	199.03	0.94	15	PASS
ICV	ICV	1	9.33	1.32	15	PASS	92.81	0.21	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.015	50.39	15	<PQL
LLICV	CCV1	1	0.88	2.94	20	PASS	0.54	1.42	20	PASS
ICSA1	ICSA	1	0.042	17.39	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.2	0.91	15	PASS	17.43	2.18	15	PASS
N024038-004B	SAMP	25	17.33	0.084	15	PASS	0.038	2.33	15	PASS
N024038-004B-PS	PS	5	78.61	1.14	15	PASS	19.92	1.92	15	PASS
N024038-004B-MS	MS	5	78.37	1.97	15	PASS	19.64	1.55	15	PASS
N024038-004B-MSD	MSD	5	77.43	0.95	15	PASS	19.55	0.25	15	PASS
N024038-005B	SAMP	5	<0.000	N/A	15	<PQL	249.35	1.29	15	PASS
N024038-005B	SAMP	10	<0.000	N/A	15	<PQL	122.21	0.92	15	PASS
N024038-006B	SAMP	5	<0.000	N/A	15	<PQL	232.25	1.89	15	PASS
N024038-006B	SAMP	10	<0.000	N/A	15	<PQL	114.05	0.49	15	PASS
N024038-007B	SAMP	5	<0.000	N/A	15	<PQL	233.37	1.47	15	PASS
N024038-007B	SAMP	10	<0.000	N/A	15	<PQL	114.27	0.77	15	PASS
CCV1	CCV	1	19.86	0.5	15	PASS	19.72	1.42	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
N024038-008B	SAMP	5	<0.000	N/A	15	<PQL	40.6	1.13	15	PASS
N024038-009B	SAMP	5	<0.000	N/A	15	<PQL	57.6	0.66	15	PASS
N024038-010B	SAMP	5	<0.000	N/A	15	<PQL	91.65	1.38	15	PASS
N024038-014B	SAMP	5	<0.000	N/A	15	<PQL	146.61	0.49	15	PASS
N024053-003B	SAMP	5	0.03	8.63	15	PASS	58.67	0.74	15	PASS
N024053-005B	SAMP	5	<0.000	N/A	15	<PQL	19.18	0.46	15	PASS
N024053-006B	SAMP	5	<0.000	N/A	15	<PQL	19.4	1.23	15	PASS
N024053-008B	SAMP	5	<0.000	N/A	15	<PQL	361.67	0.24	15	PASS
N024053-008B	SAMP	25	<0.000	N/A	15	<PQL	75.6	0.95	15	PASS
N024053-009B	SAMP	5	7.56	1.14	15	PASS	0.89	3.16	15	PASS
CCV2	CCV	1	20.13	1.16	15	PASS	19.65	0.87	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.00036	559.77	15	<PQL
N024053-010B	SAMP	5	0.2	5.67	15	PASS	1.076	0.89	15	PASS
N024053-013B	SAMP	5	105.77	1.062	15	PASS	2.89	3.95	15	PASS
N024053-014B	SAMP	25	22.58	1.16	15	PASS	0.7	6.47	15	PASS

PERCENT RSD SUMMARY: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024053-014B-PS	PS	5	106.55	1.3	15	PASS	23.19	0.89	15	PASS
N024053-014B-MS	MS	5	105.67	0.95	15	PASS	23.00044	1.23	15	PASS
N024053-014B-MSD	MSD	5	104.81	1.54	15	PASS	22.81	2.18	15	PASS
N024053-015B	SAMP	5	1409.28	1.19	15	PASS	0.9	0.32	15	PASS
N024053-015B	SAMP	50	148.35	1.58	15	PASS	0.083	6.47	15	PASS
CCV3	CCV	1	19.91	1.5	15	PASS	19.65	3.23	15	PASS
CCB3	CCB	1	0.0098	99.36	15	<PQL	0.0026	562.2	15	<PQL
N024053-009B	SAMP	5	7.67	2.56	15	PASS	0.88	1.75	15	PASS
N024053-010B	SAMP	5	0.22	4.71	15	PASS	1.08	1.29	15	PASS
CCV4	CCV	1	20.12	1.4	15	PASS	19.97	1	15	PASS
CCB4	CCB	1	0.0025	229.43	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.93	4.074	20	PASS	0.48	4.39	20	PASS
ICSA2	ICSA	1	0.058	26.61	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.28	0.95	15	PASS	18.018	0.68	15	PASS
N024053-010B	SAMP	10	0.018	63.75	15	<PQL	0.1	6.61	15	PASS
N024053-015B	SAMP	10	147.67	0.72	15	PASS	0.07	14.48	15	PASS
N024053-014B-MSD	MSD	5	106.66	2.4	15	PASS	23.31	1.93	15	PASS
CCV5	CCV	1	20.41	0.68	15	PASS	19.99	1.46	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV6	CCV	1	21.16	1.47	15	PASS	20.29	1.2	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.91	4.98	20	PASS	0.54	2.4	20	PASS
ICSA3	ICSA	1	0.051	38.73	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	20.0017	1.31	15	PASS	18.56	1.67	15	PASS

PERCENT RSD SUMMARY: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.087	18.26	15	<PQL	0.12	57.62	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.53	7.43	15	PASS	0.5	13.87	15	PASS
Std3-5/50 ppb	ICAL	1	4.9	2.56	15	PASS	4.65	11.021	15	PASS
Std4-10/100 ppb	ICAL	1	9.98	0.53	15	PASS	9.72	3.8	15	PASS
Std5-20/200 ppb	ICAL	1	19.96	0.22	15	PASS	19.94	2.35	15	PASS
Std6-40/400 ppb	ICAL	1	39.7	0.28	15	PASS	39.5	2.26	15	PASS
Std7-100/1000 ppb	ICAL	1	100.73	0.26	15	PASS	100.64	1.23	15	PASS
Std8-200/2000 ppb	ICAL	1	199.7	0.75	15	PASS	199.81	0.8	15	PASS
ICV	ICV	1	9.75	1.35	15	PASS	10.14	1.98	15	PASS
ICB	ICB	1	0.018	6.36	15	PASS	0.012	163.16	15	<PQL
LLICV	CCV1	1	0.097	19.33	20	PASS	0.48	11.23	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.0044	541.33	15	<PQL
ICSAB1	ICSAB	1	20.59	2.81	15	PASS	18.96	4.15	15	PASS
N024038-004B	SAMP	25	0.06	10.56	15	PASS	0.16	12.14	15	PASS
N024038-004B-PS	PS	5	2.41	4.2	15	PASS	2.47	6.81	15	PASS
N024038-004B-MS	MS	5	2.4	5.96	15	PASS	2.77	5.9	15	PASS
N024038-004B-MSD	MSD	5	2.27	1.28	15	PASS	2.54	10.68	15	PASS
N024038-005B	SAMP	5	0.092	17.46	15	<PQL	0.089	47.75	15	<PQL
N024038-005B	SAMP	10	0.039	27.71	15	<PQL	0.052	94.98	15	<PQL
N024038-006B	SAMP	5	0.66	8.048	15	PASS	<0.000	N/A	15	<PQL
N024038-006B	SAMP	10	0.34	2.52	15	PASS	0.00073	2404.33	15	<PQL
N024038-007B	SAMP	5	0.59	11.35	15	PASS	0.0093	347.11	15	<PQL
N024038-007B	SAMP	10	0.33	10.25	15	PASS	<0.000	0	15	PASS
CCV1	CCV	1	19.91	2.025	15	PASS	19.96	1.57	15	PASS
CCB1	CCB	1	0.0036	151.69	15	<PQL	0.0092	89.34	15	<PQL
N024038-008B	SAMP	5	0.098	35.18	15	<PQL	0.015	140.79	15	<PQL
N024038-009B	SAMP	5	0.4	6.68	15	PASS	<0.000	0	15	PASS
N024038-010B	SAMP	5	0.13	6.41	15	PASS	<0.000	N/A	15	<PQL
N024038-014B	SAMP	5	5.7	2.27	15	PASS	0.024	185.61	15	<PQL
N024053-003B	SAMP	5	1.28	2.37	15	PASS	0.00087	1019.52	15	<PQL
N024053-005B	SAMP	5	0.27	13.04	15	PASS	<0.000	N/A	15	<PQL
N024053-006B	SAMP	5	0.26	3.75	15	PASS	0.019	101.6	15	<PQL
N024053-008B	SAMP	5	2.79	6.29	15	PASS	0.053	103.13	15	<PQL
N024053-008B	SAMP	25	0.62	6.68	15	PASS	0.022	142.66	15	<PQL
N024053-009B	SAMP	5	0.63	11.72	15	PASS	1.19	15.29	15	NR!
CCV2	CCV	1	19.75	1.94	15	PASS	20.41	2.21	15	PASS
CCB2	CCB	1	0.0026	82.43	15	<PQL	0.00055	3109.45	15	<PQL
N024053-010B	SAMP	5	0.96	15.084	15	NR!	0.94	9.43	15	PASS
N024053-013B	SAMP	5	0.58	3.35	15	PASS	0.83	4.7	15	PASS
N024053-014B	SAMP	25	0.13	6.043	15	PASS	0.25	45.33	15	<PQL

PERCENT RSD SUMMARY: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	75 As [2]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024053-014B-PS	PS	5	2.81	1.64	15	PASS	2.87	1.5	15	PASS
N024053-014B-MS	MS	5	2.63	3.55	15	PASS	2.93	6.32	15	PASS
N024053-014B-MSD	MSD	5	2.61	2.12	15	PASS	2.89	19.015	15	NR!
N024053-015B	SAMP	5	0.74	4.83	15	PASS	0.78	14.9	15	PASS
N024053-015B	SAMP	50	0.063	12.88	15	PASS	0.13	12.5	15	PASS
CCV3	CCV	1	19.36	1.018	15	PASS	19.64	3.78	15	PASS
CCB3	CCB	1	0.0064	73.88	15	<PQL	0.01	222.74	15	<PQL
N024053-009B	SAMP	5	0.55	1.43	15	PASS	0.92	3.98	15	PASS
N024053-010B	SAMP	5	0.87	7.3	15	PASS	1.077	6.87	15	PASS
CCV4	CCV	1	19.76	1.86	15	PASS	20.32	5.82	15	PASS
CCB4	CCB	1	0.0078	51.75	15	<PQL	0.00047	1804.057	15	<PQL
LLCCV1	CCV2	1	0.09	25.97	20	<PQL	0.42	15.44	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.00097	1841.44	15	<PQL
ICSAB2	ICSAB	1	20.21	3.073	15	PASS	19.4	6.02	15	PASS
N024053-010B	SAMP	10	0.095	17.51	15	<PQL	0.11	36.61	15	<PQL
N024053-015B	SAMP	10	0.078	3.029	15	PASS	0.073	33.16	15	<PQL
N024053-014B-MSD	MSD	5	2.69	5.43	15	PASS	2.82	3.21	15	PASS
CCV5	CCV	1	19.61	1.85	15	PASS	20.46	3.13	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL	<0.000	0	15	PASS
CCV6	CCV	1	19.63	1.81	15	PASS	21.6	5.43	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL	<0.000	0	15	PASS
LLCCV2	CCV2	1	0.085	23.73	20	<PQL	0.47	9.32	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.0077	385.087	15	<PQL
ICSAB3	ICSAB	1	20.0049	1.79	15	PASS	19.84	1.61	15	PASS

PERCENT RSD SUMMARY: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.094	15.21	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.47	6.18	15	PASS
Std3-5/50 ppb	ICAL	1	4.89	0.39	15	PASS
Std4-10/100 ppb	ICAL	1	9.81	2.096	15	PASS
Std5-20/200 ppb	ICAL	1	19.41	1.58	15	PASS
Std6-40/400 ppb	ICAL	1	39.27	0.65	15	PASS
Std7-100/1000 ppb	ICAL	1	98.68	0.11	15	PASS
Std8-200/2000 ppb	ICAL	1	200.88	0.27	15	PASS
ICV	ICV	1	10.073	0.22	15	PASS
ICB	ICB	1	0.18	8.24	15	PASS
LLICV	CCV1	1	0.5	7.033	20	PASS
ICSA1	ICSA	1	0.078	13.56	15	PASS
ICSAB1	ICSAB	1	22.31	1.59	15	PASS
N024038-004B	SAMP	25	0.69	1.31	15	PASS
N024038-004B-PS	PS	5	5.16	0.4	15	PASS
N024038-004B-MS	MS	5	5.096	3.059	15	PASS
N024038-004B-MSD	MSD	5	5.13	2.17	15	PASS
N024038-005B	SAMP	5	0.91	1.81	15	PASS
N024038-005B	SAMP	10	0.42	0.74	15	PASS
N024038-006B	SAMP	5	36.75	1.018	15	PASS
N024038-006B	SAMP	10	17.31	1.21	15	PASS
N024038-007B	SAMP	5	37.52	1.36	15	PASS
N024038-007B	SAMP	10	16.95	1.4	15	PASS
CCV1	CCV	1	19.91	1.57	15	PASS
CCB1	CCB	1	0.13	8.58	15	PASS
N024038-008B	SAMP	5	7.76	1.4	15	PASS
N024038-009B	SAMP	5	16.92	1.76	15	PASS
N024038-010B	SAMP	5	12.95	1	15	PASS
N024038-014B	SAMP	5	3.47	3.0098	15	PASS
N024053-003B	SAMP	5	4.83	1.0081	15	PASS
N024053-005B	SAMP	5	3.37	2.068	15	PASS
N024053-006B	SAMP	5	3.36	2.94	15	PASS
N024053-008B	SAMP	5	8.1	2.041	15	PASS
N024053-008B	SAMP	25	1.54	3.71	15	PASS
N024053-009B	SAMP	5	3.89	3.093	15	PASS
CCV2	CCV	1	19.61	1.32	15	PASS
CCB2	CCB	1	0.11	9.037	15	PASS
N024053-010B	SAMP	5	8.077	1.94	15	PASS
N024053-013B	SAMP	5	4.22	2.094	15	PASS
N024053-014B	SAMP	25	0.85	3.41	15	PASS

PERCENT RSD SUMMARY: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N024053-014B-PS	PS	5	6.66	1.11	15	PASS
N024053-014B-MS	MS	5	6.42	1.3	15	PASS
N024053-014B-MSD	MSD	5	6.43	1.7	15	PASS
N024053-015B	SAMP	5	9.59	2.64	15	PASS
N024053-015B	SAMP	50	0.87	4.33	15	PASS
CCV3	CCV	1	19.6	0.3	15	PASS
CCB3	CCB	1	0.1	7.84	15	PASS
N024053-009B	SAMP	5	4.15	2.95	15	PASS
N024053-010B	SAMP	5	8.2	2.42	15	PASS
CCV4	CCV	1	19.68	1.43	15	PASS
CCB4	CCB	1	0.1	1.4	15	PASS
LLCCV1	CCV2	1	0.43	3.38	20	PASS
ICSA2	ICSA	1	0.043	22.52	15	<PQL
ICSAB2	ICSAB	1	22.2	0.82	15	PASS
N024053-010B	SAMP	10	0.86	3.16	15	PASS
N024053-015B	SAMP	10	0.86	3.88	15	PASS
N024053-014B-MSD	MSD	5	6.32	0.8	15	PASS
CCV5	CCV	1	19.76	1.21	15	PASS
CCB5	CCB	1	0.0067	75.84	15	<PQL
CCV6	CCV	1	19.14	0.69	15	PASS
CCB6	CCB	1	0.063	7.012	15	PASS
LLCCV2	CCV2	1	0.46	6.5	20	PASS
ICSA3	ICSA	1	0.044	18.38	15	<PQL
ICSAB3	ICSAB	1	22	2.28	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170508A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0508001.D	RINSE	RINSE	1	05/08/17 4:45 PM
A0508002.D	Cal Blank	IBLK	1	05/08/17 4:51 PM
A0508003.D	Std1-0.1/1 ppb	ICAL	1	05/08/17 4:57 PM
A0508004.D	Std2-0.5/5 ppb	ICAL	1	05/08/17 5:03 PM
A0508005.D	Std3-5/50 ppb	ICAL	1	05/08/17 5:08 PM
A0508006.D	Std4-10/100 ppb	ICAL	1	05/08/17 5:14 PM
A0508007.D	Std5-20/200 ppb	ICAL	1	05/08/17 5:19 PM
A0508008.D	Std6-40/400 ppb	ICAL	1	05/08/17 5:25 PM
A0508009.D	Std7-100/1000 ppb	ICAL	1	05/08/17 5:30 PM
A0508010.D	Std8-200/2000 ppb	ICAL	1	05/08/17 5:36 PM
A0508011.D	ICV	ICV	1	05/08/17 5:42 PM
A0508012.D	ICB	ICB	1	05/08/17 5:47 PM
A0508013.D	LLICV	CCV1	1	05/08/17 5:53 PM
A0508014.D	ICSA1	ICSA	1	05/08/17 5:58 PM
A0508015.D	ICSAB1	ICSAB	1	05/08/17 6:03 PM
A0508016.D	MB-62101	MBLK	1	05/08/17 6:09 PM
A0508017.D	LCS-62101	LCS	1	05/08/17 6:15 PM
A0508018.D	N024038-004B	SAMP	1	05/08/17 6:21 PM
A0508019.D	N024038-004B	SAMP	5	05/08/17 6:26 PM
A0508020.D	N024038-004B-PS	PS	1	05/08/17 6:32 PM
A0508021.D	N024038-004B-MS	MS	1	05/08/17 6:37 PM
A0508022.D	N024038-004B-MSD	MSD	1	05/08/17 6:43 PM
A0508023.D	N024038-005B	SAMP	1	05/08/17 6:48 PM
A0508024.D	N024038-006B	SAMP	1	05/08/17 6:54 PM
A0508025.D	N024038-007B	SAMP	1	05/08/17 7:00 PM
A0508026.D	CCV1	CCV	1	05/08/17 7:05 PM
A0508027.D	CCB1	CCB	1	05/08/17 7:11 PM
A0508028.D	N024038-008B	SAMP	1	05/08/17 7:16 PM
A0508029.D	N024038-009B	SAMP	1	05/08/17 7:22 PM
A0508030.D	N024038-010B	SAMP	1	05/08/17 7:27 PM
A0508031.D	N024038-014B	SAMP	1	05/08/17 7:33 PM
A0508032.D	N024038-015B	SAMP	1	05/08/17 7:39 PM
A0508033.D	N024053-001B	SAMP	1	05/08/17 7:44 PM
A0508034.D	N024053-002B	SAMP	1	05/08/17 7:50 PM
A0508035.D	N024053-003B	SAMP	1	05/08/17 7:55 PM
A0508036.D	N024053-004B	SAMP	1	05/08/17 8:01 PM
A0508037.D	N024053-005B	SAMP	1	05/08/17 8:06 PM
A0508038.D	CCV2	CCV	1	05/08/17 8:12 PM
A0508039.D	CCB2	CCB	1	05/08/17 8:17 PM
A0508040.D	N024053-006B	SAMP	1	05/08/17 8:23 PM
A0508041.D	N024053-007B	SAMP	1	05/08/17 8:29 PM
A0508042.D	N024053-008B	SAMP	1	05/08/17 8:34 PM

INJECTION LOG: 170508A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0508043.D	N024053-009B	SAMP	1	05/08/17 8:40 PM
A0508044.D	N024053-010B	SAMP	1	05/08/17 8:45 PM
A0508045.D	N024053-013B	SAMP	1	05/08/17 8:51 PM
A0508046.D	MB-62121	MBLK	1	05/08/17 8:56 PM
A0508047.D	LCS-62121	LCS	1	05/08/17 9:02 PM
A0508048.D	N024053-014B	SAMP	1	05/08/17 9:08 PM
A0508049.D	N024053-014B	SAMP	5	05/08/17 9:13 PM
A0508050.D	CCV3	CCV	1	05/08/17 9:19 PM
A0508051.D	CCB3	CCB	1	05/08/17 9:24 PM
A0508052.D	N024053-014B-PS	PS	1	05/08/17 9:30 PM
A0508053.D	N024053-014B-MS	MS	1	05/08/17 9:35 PM
A0508054.D	N024053-014B-MSD	MSD	1	05/08/17 9:41 PM
A0508055.D	N024053-015B	SAMP	1	05/08/17 9:47 PM
A0508056.D	N024064-001B	SAMP	1	05/08/17 9:52 PM
A0508057.D	N024064-002B	SAMP	1	05/08/17 9:58 PM
A0508058.D	N024064-003B	SAMP	1	05/08/17 10:03 PM
A0508059.D	N024064-004B	SAMP	1	05/08/17 10:09 PM
A0508060.D	N024064-005B	SAMP	1	05/08/17 10:15 PM
A0508061.D	N024064-006B	SAMP	1	05/08/17 10:20 PM
A0508062.D	CCV4	CCV	1	05/08/17 10:26 PM
A0508063.D	CCB4	CCB	1	05/08/17 10:31 PM
A0508064.D	N024064-007B	SAMP	1	05/08/17 10:37 PM
A0508065.D	N024064-009B	SAMP	1	05/08/17 10:42 PM
A0508066.D	N024064-010B	SAMP	1	05/08/17 10:48 PM
A0508067.D	N024064-012B	SAMP	1	05/08/17 10:54 PM
A0508068.D	N024064-013B	SAMP	1	05/08/17 10:59 PM
A0508069.D	N024064-014B	SAMP	1	05/08/17 11:05 PM
A0508070.D	CCV5	CCV	1	05/08/17 11:10 PM
A0508071.D	CCB5	CCB	1	05/08/17 11:16 PM
A0508072.D	LLCCV1	CCV2	1	05/08/17 11:21 PM
A0508073.D	ICSA2	ICSA	1	05/08/17 11:27 PM
A0508074.D	ICSAB2	ICSAB	1	05/08/17 11:33 PM

INJECTION LOG: 170510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510001.D	RINSE	RINSE	1	05/10/17 8:41 AM
A0510002.D	Cal Blank	IBLK	1	05/10/17 8:47 AM
A0510003.D	Std1-0.1/1 ppb	ICAL	1	05/10/17 8:52 AM
A0510004.D	Std2-0.5/5 ppb	ICAL	1	05/10/17 8:58 AM
A0510005.D	Std3-5/50 ppb	ICAL	1	05/10/17 9:03 AM
A0510006.D	Std4-10/100 ppb	ICAL	1	05/10/17 9:09 AM
A0510007.D	Std5-20/200 ppb	ICAL	1	05/10/17 9:14 AM
A0510008.D	Std6-40/400 ppb	ICAL	1	05/10/17 9:20 AM
A0510009.D	Std7-100/1000 ppb	ICAL	1	05/10/17 9:25 AM
A0510010.D	Std8-200/2000 ppb	ICAL	1	05/10/17 9:31 AM
A0510011.D	ICV	ICV	1	05/10/17 9:36 AM
A0510012.D	ICB	ICB	1	05/10/17 9:42 AM
A0510013.D	LLICV	CCV1	1	05/10/17 9:48 AM
A0510014.D	ICSA1	ICSA	1	05/10/17 9:53 AM
A0510015.D	ICSAB1	ICSAB	1	05/10/17 10:22 AM
A0510016.D	N024038-004B	SAMP	25	05/10/17 10:28 AM
A0510017.D	N024038-004B-PS	PS	5	05/10/17 10:34 AM
A0510018.D	N024038-004B-MS	MS	5	05/10/17 10:39 AM
A0510019.D	N024038-004B-MSD	MSD	5	05/10/17 10:45 AM
A0510020.D	N024038-005B	SAMP	5	05/10/17 10:51 AM
A0510021.D	N024038-005B	SAMP	10	05/10/17 10:57 AM
A0510022.D	N024038-006B	SAMP	5	05/10/17 11:04 AM
A0510023.D	N024038-006B	SAMP	10	05/10/17 11:10 AM
A0510024.D	N024038-007B	SAMP	5	05/10/17 11:15 AM
A0510025.D	N024038-007B	SAMP	10	05/10/17 11:21 AM
A0510026.D	CCV1	CCV	1	05/10/17 11:27 AM
A0510027.D	CCB1	CCB	1	05/10/17 11:32 AM
A0510028.D	N024038-008B	SAMP	5	05/10/17 11:38 AM
A0510029.D	N024038-009B	SAMP	5	05/10/17 11:43 AM
A0510030.D	N024038-010B	SAMP	5	05/10/17 11:49 AM
A0510031.D	N024038-014B	SAMP	5	05/10/17 11:55 AM
A0510032.D	N024053-003B	SAMP	5	05/10/17 12:00 PM
A0510033.D	N024053-005B	SAMP	5	05/10/17 12:06 PM
A0510034.D	N024053-006B	SAMP	5	05/10/17 12:11 PM
A0510035.D	N024053-008B	SAMP	5	05/10/17 12:17 PM
A0510036.D	N024053-008B	SAMP	25	05/10/17 12:22 PM
A0510037.D	N024053-009B	SAMP	5	05/10/17 12:28 PM
A0510038.D	CCV2	CCV	1	05/10/17 12:34 PM
A0510039.D	CCB2	CCB	1	05/10/17 12:39 PM
A0510040.D	N024053-010B	SAMP	5	05/10/17 12:45 PM
A0510041.D	N024053-013B	SAMP	5	05/10/17 12:50 PM
A0510042.D	N024053-014B	SAMP	25	05/10/17 12:56 PM

INJECTION LOG: 170510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510043.D	N024053-014B-PS	PS	5	05/10/17 1:02 PM
A0510044.D	N024053-014B-MS	MS	5	05/10/17 1:07 PM
A0510045.D	N024053-014B-MSD	MSD	5	05/10/17 1:13 PM
A0510046.D	N024053-015B	SAMP	5	05/10/17 1:18 PM
A0510047.D	N024053-015B	SAMP	50	05/10/17 1:24 PM
A0510048.D	N024064-003B	SAMP	5	05/10/17 1:29 PM
A0510049.D	N024064-004B	SAMP	5	05/10/17 1:35 PM
A0510050.D	CCV3	CCV	1	05/10/17 1:41 PM
A0510051.D	CCB3	CCB	1	05/10/17 1:46 PM
A0510052.D	N024064-006B	SAMP	5	05/10/17 1:52 PM
A0510053.D	N024064-007B	SAMP	5	05/10/17 1:57 PM
A0510054.D	N024064-007B	SAMP	25	05/10/17 2:03 PM
A0510055.D	N024064-010B	SAMP	1	05/10/17 2:09 PM
A0510056.D	N024064-012B	SAMP	5	05/10/17 2:15 PM
A0510057.D	N024064-013B	SAMP	5	05/10/17 2:20 PM
A0510058.D	N024064-014B	SAMP	5	05/10/17 2:26 PM
A0510059.D	N024064-014B	SAMP	25	05/10/17 2:32 PM
A0510060.D	N024053-009B	SAMP	5	05/10/17 2:37 PM
A0510061.D	N024053-010B	SAMP	5	05/10/17 2:43 PM
A0510062.D	CCV4	CCV	1	05/10/17 2:48 PM
A0510063.D	CCB4	CCB	1	05/10/17 2:54 PM
A0510064.D	LLCCV1	CCV2	1	05/10/17 3:00 PM
A0510065.D	ICSA2	ICSA	1	05/10/17 3:05 PM
A0510066.D	ICSAB2	ICSAB	1	05/10/17 3:11 PM
A0510067.D	N024053-010B	SAMP	10	05/10/17 3:16 PM
A0510068.D	N024053-015B	SAMP	10	05/10/17 3:22 PM
A0510069.D	N024053-014B-MSD	MSD	5	05/10/17 3:27 PM
A0510070.D	N024064-006B	SAMP	10	05/10/17 3:33 PM
A0510071.D	N024018-005B	SAMP	1	05/10/17 3:39 PM
A0510072.D	N024018-005A	SAMP	1	05/10/17 3:45 PM
A0510073.D	N024037-001B	SAMP	1	05/10/17 3:51 PM
A0510074.D	N024037-001A	SAMP	1	05/10/17 3:56 PM
A0510075.D	MB-62173	MBLK	1	05/10/17 4:02 PM
A0510076.D	LCS-62173	LCS	1	05/10/17 4:07 PM
A0510077.D	CCV5	CCV	1	05/10/17 4:13 PM
A0510078.D	CCB5	CCB	1	05/10/17 4:16 PM
A0510079.D	N024158-001G	SAMP	1	05/10/17 4:24 PM
A0510080.D	N024158-001G-DUP	DUP	1	05/10/17 4:29 PM
A0510081.D	N024158-001G	SAMP	5	05/10/17 4:35 PM
A0510082.D	N024158-001G-PS	PS	1	05/10/17 4:40 PM
A0510083.D	N024158-001G-MS	MS	1	05/10/17 4:46 PM
A0510084.D	N024158-001G-MSD	MSD	1	05/10/17 4:52 PM

INJECTION LOG: 170510A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0510085.D	LCS-62173	LCS	1	05/10/17 4:57 PM
A0510086.D	MB-62173	MBLK	1	05/10/17 5:23 PM
A0510087.D	CCV6	CCV	1	05/10/17 5:32 PM
A0510088.D	CCB6	CCB	1	05/10/17 5:38 PM
A0510089.D	LLCCV2	CCV2	1	05/10/17 5:43 PM
A0510090.D	ICSA3	ICSA	1	05/10/17 5:49 PM
A0510091.D	ICSAB3	ICSAB	1	05/10/17 5:54 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/1/2017 9:03:52 A**
Prep End Date: **5/1/2017 1:30:00 P**

Reviewed/ Date: 5/15/2017
Initials/ Date: 5/15/2017

Prep Batch **62101** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62101	Aqueous		25	☐	0	0	25	1.000		
MB-62101	Aqueous		25	☐	0	0	25	1.000		
N024038-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N024038-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/1/2017 9:03:52 A**
Prep End Date: **5/1/2017 1:30:00 P**

Reviewed/ Date: 5/15/2017
Initials/ Date: 5/15/2017

Prep Batch **62101** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-17**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024053-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-013B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/3/2017 9:07:01 A**
Prep End Date: **5/3/2017 1:30:00 P**

Reviewed/ Date: 5/15/2017
Initials/ Date: 5/15/2017

Prep Batch **62121** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62121	Aqueous		25	☐	0	0	25	1.000		
MB-62121	Aqueous		25	☐	0	0	25	1.000		
N024053-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-014B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-014B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024053-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-009B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/3/2017 9:07:01 A**
Prep End Date: **5/3/2017 1:30:00 P**

Reviewed/ Date: 5/15/2017
Initials/ Date: 5/15/2017

Prep Batch **62121** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-22**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024064-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N024064-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-161109	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution C		0.25
2MWST-161206	ICV/MS/MSD/LCS/LCSD Solution D		0.25
2MWST-170107	ICV/MS/MSD/LCS/LCSD Solution B		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 8 May 2017 10:01:12 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	38456.20	0.00	
24 Mg	232209.00	0.00	
25 Mg	30674.00	0.00	
26 Mg	35459.30	0.00	
59 Co	334382.00	0.00	
115 In	765621.00	0.00	
206 Pb	208239.00	0.00	
207 Pb	180056.00	0.00	
208 Pb	443513.00	0.00	

RSD (%)

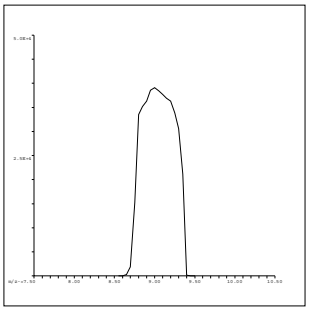
Element	Actual	Required	Flag
9 Be	0.79	5.00	
24 Mg	0.72	5.00	
25 Mg	1.27	5.00	
26 Mg	1.11	5.00	
59 Co	1.49	5.00	
115 In	0.88	5.00	
206 Pb	2.25	5.00	
207 Pb	1.55	5.00	
208 Pb	1.50	5.00	

Ion Ratio

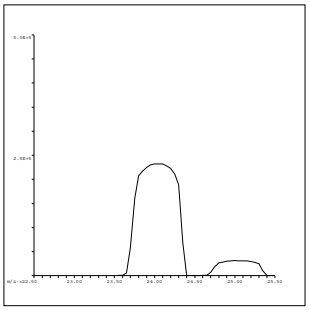
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

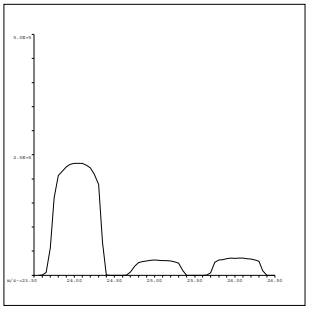
Element	Actual	Required	Flag



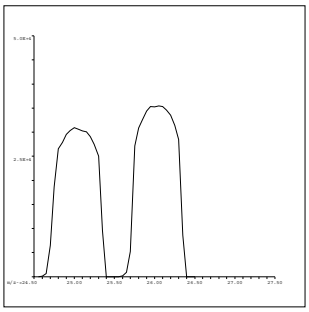
9 Be
Mass Calib.
   Actual: 9.05
   Required: 8.90-9.10
   Flag:
Peak Width
   Actual: 0.60
   Required: 0.75
   Flag:



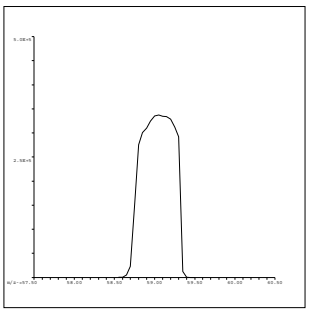
24 Mg
Mass Calib.
   Actual: 24.05
   Required: 23.90-24.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



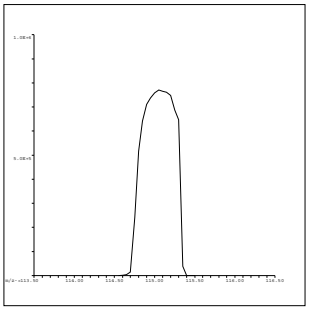
25 Mg
Mass Calib.
   Actual: 25.05
   Required: 24.90-25.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



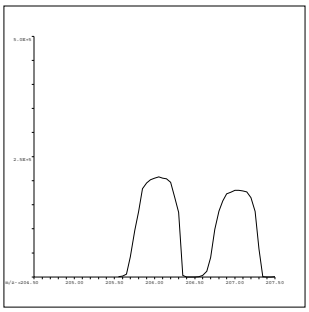
26 Mg
Mass Calib.
   Actual: 26.05
   Required: 25.90-26.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



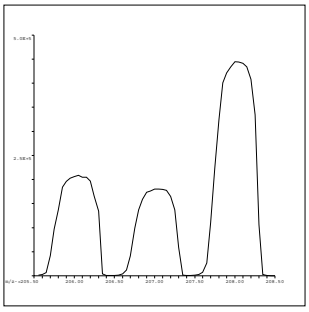
59 Co
Mass Calib.
   Actual: 59.10
   Required: 58.90-59.10
   Flag:
Peak Width
   Actual: 0.60
   Required: 0.75
   Flag:



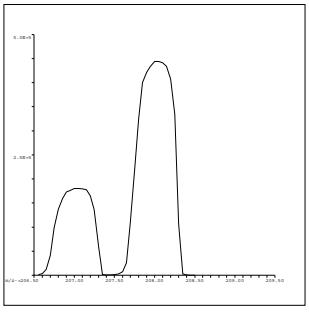
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 10 May 2017 08:12:58 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	120499.00	0.00	
24 Mg	546846.00	0.00	
25 Mg	71492.70	0.00	
26 Mg	82750.40	0.00	
59 Co	629056.00	0.00	
115 In	980384.00	0.00	
206 Pb	256544.00	0.00	
207 Pb	223359.00	0.00	
208 Pb	547155.00	0.00	

RSD (%)

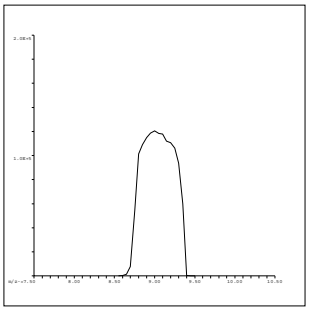
Element	Actual	Required	Flag
9 Be	0.76	5.00	
24 Mg	0.59	5.00	
25 Mg	0.87	5.00	
26 Mg	0.56	5.00	
59 Co	0.86	5.00	
115 In	0.85	5.00	
206 Pb	1.33	5.00	
207 Pb	1.42	5.00	
208 Pb	0.92	5.00	

Ion Ratio

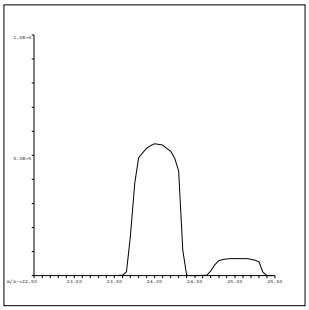
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

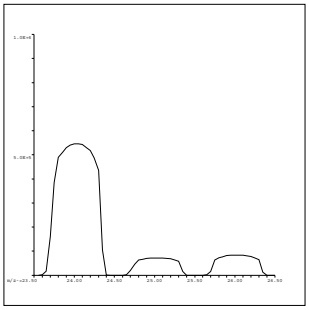
Element	Actual	Required	Flag



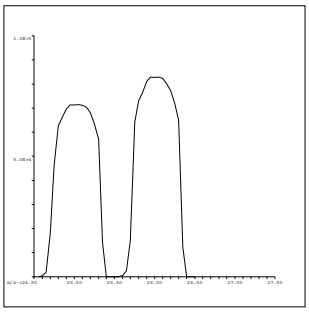
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



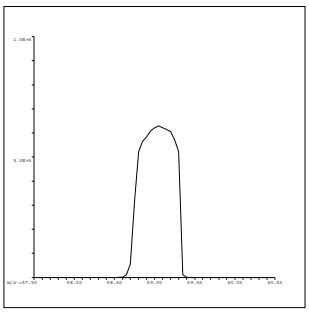
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



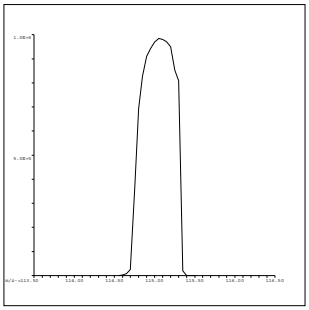
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



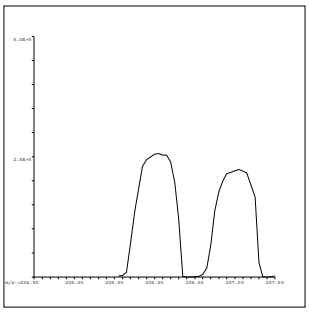
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



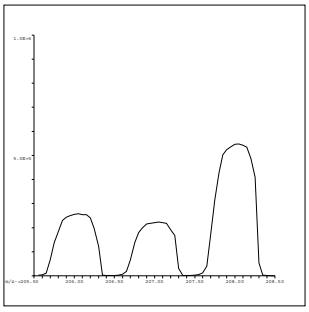
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



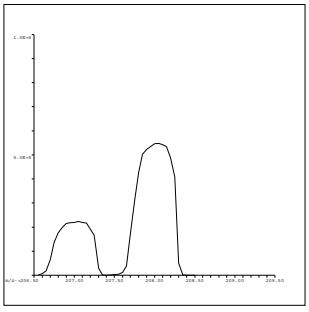
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170508A

Instrument ID: ICPMS-02

Analyte	Data File	A0508002.D	A0508003.D	A0508004.D	A0508005.D	A0508006.D	A0508007.D	A0508008.D	A0508009.D	A0508010.D	
	Acq. Date-Time	05/08/2017 04:51 PM	05/08/2017 04:57 PM	05/08/2017 05:03 PM	05/08/2017 05:08 PM	05/08/2017 05:14 PM	05/08/2017 05:19 PM	05/08/2017 05:25 PM	05/08/2017 05:30 PM	05/08/2017 05:36 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	72250.4		71167.9	71830.5	71649.9	72294.7	72281.9	70029.9	69733.9	
55 Mn [2]	CPS	103.3		1628.6	15225.8	30537.6	60306.2	121553.6	296071.6	575287.8	0.9999
52 Cr [2]	CPS	208.7		3434.8	32309.6	64256.4	129740.4	258157.9	624774.8	1229188.8	1.0000
72 Ge (ISTD) [1]	CPS	60263		59942.9	61632.5	60996.7	61722.8	61626.8	60756.9	59676.5	
78 Se [1]	CPS	3.3		112.2	1279	2550.3	4924.3	9867.8	24551.5	48448.7	1.0000
72 Ge (ISTD) [2]	CPS	48138.4	50230.4	48075	48228.8	48315.6	48716.7	47952.3	47945.7	45825.1	
75 As [2]	CPS	12	67.6	295.6	2917.2	5827.3	11760.3	23229	56851.1	110935.8	1.0000
103 Rh (ISTD) [2]	CPS	1794767.9		1787845.3	1795313.7	1800154.5	1806341.4	1818337.8	1778430.4	1720996.4	
95 Mo [2]	CPS	195.6		2039.1	19201.1	38703.2	77968.5	157746.5	386223.2	765890.6	1.0000

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170510A

Instrument ID: ICPMS-02

Analyte	Data File	A0510002.D	A0510003.D	A0510004.D	A0510005.D	A0510006.D	A0510007.D	A0510008.D	A0510009.D	A0510010.D	
	Acq. Date-Time	05/10/2017 08:47 AM	05/10/2017 08:52 AM	05/10/2017 08:58 AM	05/10/2017 09:03 AM	05/10/2017 09:09 AM	05/10/2017 09:14 AM	05/10/2017 09:20 AM	05/10/2017 09:25 AM	05/10/2017 09:31 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	71942.2		78954.1	78188.4	78945.1	80112.8	82282.3	77588.7	77418.8	
55 Mn [2]	CPS	82.1		1941.7	16694.4	33197.9	68053.7	137343.9	327350.8	638902.6	0.9999
52 Cr [2]	CPS	271		3789.3	35916.1	72170.9	145538.3	293174	702721.7	1414228.7	1.0000
72 Ge (ISTD) [1]	CPS	59435.5		65329.1	64026.4	65245.4	66174.5	68032.2	64991.9	63581	
78 Se [1]	CPS	2.2		133.3	1193.4	2534.8	5268.9	10726.2	26109.6	50712.2	1.0000
72 Ge (ISTD) [2]	CPS	47726.3	53969	52302.3	51820.7	52184.2	52866.2	53640.9	51280.4	50579.3	
75 As [2]	CPS	6.2	64	346.2	3093.7	6341.7	12838.5	25898.8	62815.2	122815.6	1.0000
103 Rh (ISTD) [2]	CPS	1805738.6		1944748.4	1923459.4	1955020.4	1993975.4	2005797.5	1926465.6	1874990.6	
95 Mo [2]	CPS	33.3		2052.4	20973.3	42740	86171.4	175367.5	423219.8	838493.3	1.0000

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **ICV**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.873	0.10	10.00	0	98.7	90	110				
Manganese	94.005	0.50	100.0	0	94.0	90	110				
Molybdenum	10.736	0.50	10.00	0	107	90	110				
Selenium	9.882	0.50	10.00	0	98.8	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **ZZZZZZ**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.094	0.10	0.1000	0	94.3	80	120				
Manganese	0.499	0.50	0.5000	0	99.8	80	120				
Molybdenum	0.452	0.50	0.5000	0	90.4	80	120				
Selenium	0.496	0.50	0.5000	0	99.1	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCV**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.620	0.10	20.00	0	98.1	90	110				
Manganese	19.897	0.50	20.00	0	99.5	90	110				
Molybdenum	20.836	0.50	20.00	0	104	90	110				
Selenium	21.371	0.50	20.00	0	107	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCV**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.778	0.10	20.00	0	98.9	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCV**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639446**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.836	0.50	20.00	0	99.2	90	110				
Molybdenum	20.149	0.50	20.00	0	101	90	110				
Selenium	20.183	0.50	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCV**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639458**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.727	0.10	20.00	0	98.6	90	110				
Manganese	19.510	0.50	20.00	0	97.5	90	110				
Molybdenum	20.253	0.50	20.00	0	101	90	110				
Selenium	20.630	0.50	20.00	0	103	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCV**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639470**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.682	0.10	20.00	0	98.4	90	110				
Manganese	19.863	0.50	20.00	0	99.3	90	110				
Molybdenum	20.442	0.50	20.00	0	102	90	110				
Selenium	20.237	0.50	20.00	0	101	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCV**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.447	0.10	20.00	0	97.2	90	110				
Manganese	19.745	0.50	20.00	0	98.7	90	110				
Molybdenum	20.303	0.50	20.00	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCV**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639478**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.896	0.50	20.00	0	99.5	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **ZZZZZZ**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639480**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.080	0.10	0.1000	0	79.6	70	130				
Manganese	0.477	0.50	0.5000	0	95.3	70	130				
Molybdenum	0.424	0.50	0.5000	0	84.7	70	130				
Selenium	0.376	0.50	0.5000	0	75.2	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICV**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639578**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.753	0.10	10.00	0	97.5	90	110				
Manganese	92.805	0.50	100.0	0	92.8	90	110				
Molybdenum	10.073	0.50	10.00	0	101	90	110				
Selenium	10.139	0.50	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ZZZZZZ**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639580**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.097	0.10	0.1000	0	97.2	80	120				
Manganese	0.544	0.50	0.5000	0	109	80	120				
Molybdenum	0.497	0.50	0.5000	0	99.3	80	120				
Selenium	0.480	0.50	0.5000	0	96.1	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCV**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.909	0.10	20.00	0	99.5	90	110				
Manganese	19.719	0.50	20.00	0	98.6	90	110				
Molybdenum	19.911	0.50	20.00	0	99.6	90	110				
Selenium	19.964	0.50	20.00	0	99.8	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCV**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.750	0.10	20.00	0	98.8	90	110				
Manganese	19.655	0.50	20.00	0	98.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCV**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	19.612	0.50	20.00	0	98.1	90	110				
Selenium	20.409	0.50	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCV**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.358	0.10	20.00	0	96.8	90	110				
Manganese	19.651	0.50	20.00	0	98.3	90	110				
Molybdenum	19.604	0.50	20.00	0	98.0	90	110				
Selenium	19.640	0.50	20.00	0	98.2	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCV**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639629**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.761	0.10	20.00	0	98.8	90	110				
Manganese	19.974	0.50	20.00	0	99.9	90	110				
Molybdenum	19.679	0.50	20.00	0	98.4	90	110				
Selenium	20.316	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ZZZZZZ**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639631**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.090	0.10	0.1000	0	90.1	70	130				
Manganese	0.485	0.50	0.5000	0	97.0	70	130				
Molybdenum	0.430	0.50	0.5000	0	86.0	70	130				
Selenium	0.417	0.50	0.5000	0	83.3	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCV**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639644**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.614	0.10	20.00	0	98.1	90	110				
Manganese	19.993	0.50	20.00	0	100	90	110				
Molybdenum	19.758	0.50	20.00	0	98.8	90	110				
Selenium	20.455	0.50	20.00	0	102	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCV**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639654**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.633	0.10	20.00	0	98.2	90	110				
Manganese	20.285	0.50	20.00	0	101	90	110				
Molybdenum	19.139	0.50	20.00	0	95.7	90	110				
Selenium	21.598	0.50	20.00	0	108	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ZZZZZZ**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639656**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.085	0.10	0.1000	0	84.9	70	130				
Manganese	0.544	0.50	0.5000	0	109	70	130				
Molybdenum	0.457	0.50	0.5000	0	91.3	70	130				
Selenium	0.467	0.50	0.5000	0	93.3	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **ICV**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639352**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.573	1.0	10.00	0	95.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **ZZZZZZ**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639354**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.968	1.0	1.000	0	96.8	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **CCV**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639367**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.585	1.0	20.00	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **CCV**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.552	1.0	20.00	0	103	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **CCV**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639391**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.388	1.0	20.00	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCV4	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115141
Client ID:	CCV	Batch ID:	R115141	TestNo:	EPA 6020			Analysis Date:	5/8/2017	SeqNo:	2639403

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.513	1.0	20.00	0	103	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115141
Client ID:	CCV	Batch ID:	R115141	TestNo:	EPA 6020			Analysis Date:	5/8/2017	SeqNo:	2639411

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.162	1.0	20.00	0	101	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115141
Client ID:	ZZZZZZ	Batch ID:	R115141	TestNo:	EPA 6020			Analysis Date:	5/8/2017	SeqNo:	2639413

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.939	1.0	1.000	0	93.9	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **ICV**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639492**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.332	1.0	10.00	0	93.3	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639494**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.885	1.0	1.000	0	88.5	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCV**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639507**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.860	1.0	20.00	0	99.3	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCV**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.134	1.0	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCV**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.915	1.0	20.00	0	99.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCV**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639543**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.122	1.0	20.00	0	101	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.934	1.0	1.000	0	93.4	70	130				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCV**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639558**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.412	1.0	20.00	0	102	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCV**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639568**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.161	1.0	20.00	0	106	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **ZZZZZZ**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.905	1.0	1.000	0	90.5	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **ICB**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639420**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.352	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCB**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.328	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCB**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639447**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCB**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCB**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639459**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									
Molybdenum	0.116	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCB**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639471**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.144	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **CCB**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639479**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.101	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.177	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639594**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.129	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.113	0.50									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639618**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	0.104	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639630**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.103	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639645**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **CCB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.063	0.50									
Selenium	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **ICB**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639353**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **CCB**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639368**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **CCB**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **CCB**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639392**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **CCB**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.051	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **CCB**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639412**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.099	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **ICB**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639493**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCB**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCB**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639520**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCB**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639532**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCB**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCB**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639559**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **CCB**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **115142**
Client ID: **ICSA** Batch ID: **R115142** TestNo: **EPA 6020** Analysis Date: **5/8/2017** SeqNo: **2639422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.066	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **115142**
Client ID: **ICSAB** Batch ID: **R115142** TestNo: **EPA 6020** Analysis Date: **5/8/2017** SeqNo: **2639423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.862	0.10	20.00	0	99.3	80	120				
Manganese	18.086	0.50	20.00	0	90.4	80	120				
Molybdenum	22.971	0.50	20.00	0	115	80	120				
Selenium	18.815	0.50	20.00	0	94.1	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **115142**
Client ID: **ICSA** Batch ID: **R115142** TestNo: **EPA 6020** Analysis Date: **5/8/2017** SeqNo: **2639481**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **115142**
Client ID: **ICSAB** Batch ID: **R115142** TestNo: **EPA 6020** Analysis Date: **5/8/2017** SeqNo: **2639482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.714	0.10	20.00	0	98.6	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID: **ICSAB**	Batch ID: **R115142**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639482**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.454	0.50	20.00	0	92.3	80	120				
Molybdenum	23.118	0.50	20.00	0	116	80	120				
Selenium	18.715	0.50	20.00	0	93.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICSA**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICSAB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639582**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.593	0.10	20.00	0	103	80	120				
Manganese	17.430	0.50	20.00	0	87.2	80	120				
Molybdenum	22.313	0.50	20.00	0	112	80	120				
Selenium	18.958	0.50	20.00	0	94.8	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICSA**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639632**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.043	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICSAB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.210	0.10	20.00	0	101	80	120				
Manganese	18.018	0.50	20.00	0	90.1	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICSAB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639633**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	22.198	0.50	20.00	0	111	80	120				
Selenium	19.403	0.50	20.00	0	97.0	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICSA**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639657**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115146**
Client ID: **ICSAB**	Batch ID: **R115146**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639658**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.005	0.10	20.00	0	100	80	120				
Manganese	18.559	0.50	20.00	0	92.8	80	120				
Molybdenum	21.996	0.50	20.00	0	110	80	120				
Selenium	19.843	0.50	20.00	0	99.2	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **ICSA**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639355**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.036	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **ICSAB**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639356**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.913	1.0	20.00	0	99.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **ICSA**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.113	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115141**
Client ID: **ICSAB**	Batch ID: **R115141**	TestNo: **EPA 6020**		Analysis Date: **5/8/2017**	SeqNo: **2639415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.532	1.0	20.00	0	97.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115144
Client ID:	ICSA	Batch ID:	R115144	TestNo:	EPA 6020			Analysis Date:	5/10/2017	SeqNo:	2639495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.042	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115144
Client ID:	ICSAB	Batch ID:	R115144	TestNo:	EPA 6020			Analysis Date:	5/10/2017	SeqNo:	2639496

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.203	1.0	20.00	0	96.0	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115144
Client ID:	ICSA	Batch ID:	R115144	TestNo:	EPA 6020			Analysis Date:	5/10/2017	SeqNo:	2639546

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.058	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115144
Client ID:	ICSAB	Batch ID:	R115144	TestNo:	EPA 6020			Analysis Date:	5/10/2017	SeqNo:	2639547

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.276	1.0	20.00	0	96.4	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115144
Client ID:	ICSA	Batch ID:	R115144	TestNo:	EPA 6020			Analysis Date:	5/10/2017	SeqNo:	2639571

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.051	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115144**
Client ID: **ICSAB**	Batch ID: **R115144**	TestNo: **EPA 6020**		Analysis Date: **5/10/2017**	SeqNo: **2639572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.002	1.0	20.00	0	100	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	72250.4	72250.4	100	PASS	70-125	48138.4	48138.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	75275.8	72250.4	104.19	PASS	70-125	50230.4	48138.4	104.35	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	71167.9	72250.4	98.5	PASS	70-125	48075	48138.4	99.87	PASS	70-125
Std3-5/50 ppb	ICAL	1	71830.5	72250.4	99.42	PASS	70-125	48228.8	48138.4	100.19	PASS	70-125
Std4-10/100 ppb	ICAL	1	71649.9	72250.4	99.17	PASS	70-125	48315.6	48138.4	100.37	PASS	70-125
Std5-20/200 ppb	ICAL	1	72294.7	72250.4	100.06	PASS	70-125	48716.7	48138.4	101.2	PASS	70-125
Std6-40/400 ppb	ICAL	1	72281.9	72250.4	100.04	PASS	70-125	47952.3	48138.4	99.61	PASS	70-125
Std7-100/1000 ppb	ICAL	1	70029.9	72250.4	96.93	PASS	70-125	47945.7	48138.4	99.6	PASS	70-125
Std8-200/2000 ppb	ICAL	1	69733.9	72250.4	96.52	PASS	70-125	45825.1	48138.4	95.19	PASS	70-125
ICV	ICV	1	75693.3	72250.4	104.77	PASS	70-125	50145.6	48138.4	104.17	PASS	70-125
ICB	ICB	1	71357.7	72250.4	98.76	PASS	70-125	48702.2	48138.4	101.17	PASS	70-125
LLICV	CCV1	1	58132.1	72250.4	80.46	PASS	70-125	42285.7	48138.4	87.84	PASS	70-125
ICSA1	ICSA	1	85551.5	72250.4	118.41	PASS	70-125	53802.7	48138.4	111.77	PASS	70-125
ICSAB1	ICSAB	1	63161.4	72250.4	87.42	PASS	70-125	43434.1	48138.4	90.23	PASS	70-125
MB-62101	MBLK	1	75576	72250.4	104.6	PASS	70-125	50553.7	48138.4	105.02	PASS	70-125
LCS-62101	LCS	1	82728.4	72250.4	114.5	PASS	70-125	54164.9	48138.4	112.52	PASS	70-125
N024038-004B	SAMP	1	78523.1	72250.4	108.68	PASS	70-125	49011	48138.4	101.81	PASS	70-125
N024038-004B	SAMP	5	50860.7	72250.4	70.4	PASS	70-125	36834.7	48138.4	76.52	PASS	70-125
N024038-004B-PS	PS	1	77798.4	72250.4	107.68	PASS	70-125	48676.5	48138.4	101.12	PASS	70-125
N024038-004B-MS	MS	1	75437.4	72250.4	104.41	PASS	70-125	47826.3	48138.4	99.35	PASS	70-125
N024038-004B-MSD	MSD	1	76358.3	72250.4	105.69	PASS	70-125	48053.8	48138.4	99.82	PASS	70-125
N024038-005B	SAMP	1	67450.4	72250.4	93.36	PASS	70-125	39463	48138.4	81.98	PASS	70-125
N024038-006B	SAMP	1	51857	72250.4	71.77	PASS	70-125	27974.7	48138.4	58.11	NR!	70-125
N024038-007B	SAMP	1	44927	72250.4	62.18	NR!	70-125	25906.8	48138.4	53.82	NR!	70-125
CCV1	CCV	1	86878.6	72250.4	120.25	PASS	70-125	59020.8	48138.4	122.61	PASS	70-125
CCB1	CCB	1	76357.6	72250.4	105.68	PASS	70-125	52449.5	48138.4	108.96	PASS	70-125
N024038-008B	SAMP	1	53611.6	72250.4	74.2	PASS	70-125	32069	48138.4	66.62	NR!	70-125
N024038-009B	SAMP	1	46531.5	72250.4	64.4	NR!	70-125	27822.2	48138.4	57.8	NR!	70-125
N024038-010B	SAMP	1	49552.1	72250.4	68.58	NR!	70-125	29645.4	48138.4	61.58	NR!	70-125
N024038-014B	SAMP	1	61794.3	72250.4	85.53	PASS	70-125	37271.1	48138.4	77.42	PASS	70-125
N024038-015B	SAMP	1	86255.7	72250.4	119.38	PASS	70-125	58097.5	48138.4	120.69	PASS	70-125
N024053-001B	SAMP	1	75327.3	72250.4	104.26	PASS	70-125	50932.6	48138.4	105.8	PASS	70-125
N024053-002B	SAMP	1	81957.4	72250.4	113.44	PASS	70-125	55730.3	48138.4	115.77	PASS	70-125
N024053-003B	SAMP	1	69461.9	72250.4	96.14	PASS	70-125	45732.8	48138.4	95.003	PASS	70-125
N024053-004B	SAMP	1	83871.1	72250.4	116.08	PASS	70-125	55713.5	48138.4	115.74	PASS	70-125
N024053-005B	SAMP	1	60888.8	72250.4	84.27	PASS	70-125	37612.1	48138.4	78.13	PASS	70-125
CCV2	CCV	1	86483.9	72250.4	119.7	PASS	70-125	58882.6	48138.4	122.32	PASS	70-125
CCB2	CCB	1	75523.4	72250.4	104.53	PASS	70-125	53274.4	48138.4	110.67	PASS	70-125
N024053-006B	SAMP	1	59801.2	72250.4	82.77	PASS	70-125	36587.4	48138.4	76.005	PASS	70-125
N024053-007B	SAMP	1	87060.7	72250.4	120.5	PASS	70-125	58967.2	48138.4	122.5	PASS	70-125
N024053-008B	SAMP	1	58718.5	72250.4	81.27	PASS	70-125	35812.4	48138.4	74.39	PASS	70-125

INTERNAL STANDARD: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N024053-009B	SAMP	1	51037.8	72250.4	70.64	PASS	70-125	29632.1	48138.4	61.56	NR!	70-125
N024053-010B	SAMP	1	51876.1	72250.4	71.8	PASS	70-125	30298.8	48138.4	62.94	NR!	70-125
N024053-013B	SAMP	1	64214.6	72250.4	88.88	PASS	70-125	40814.2	48138.4	84.79	PASS	70-125
MB-62121	MBLK	1	74232.3	72250.4	102.74	PASS	70-125	51507.7	48138.4	107	PASS	70-125
LCS-62121	LCS	1	78710.2	72250.4	108.94	PASS	70-125	53822.9	48138.4	111.81	PASS	70-125
N024053-014B	SAMP	1	62929.7	72250.4	87.099	PASS	70-125	40228.2	48138.4	83.57	PASS	70-125
N024053-014B	SAMP	5	70112.2	72250.4	97.041	PASS	70-125	46346.6	48138.4	96.28	PASS	70-125
CCV3	CCV	1	80947.8	72250.4	112.04	PASS	70-125	55450.5	48138.4	115.19	PASS	70-125
CCB3	CCB	1	70663.9	72250.4	97.8	PASS	70-125	49387.9	48138.4	102.6	PASS	70-125
N024053-014B-PS	PS	1	61829.9	72250.4	85.58	PASS	70-125	39742.6	48138.4	82.56	PASS	70-125
N024053-014B-MS	MS	1	64804.5	72250.4	89.69	PASS	70-125	41725.4	48138.4	86.68	PASS	70-125
N024053-014B-MSD	MSD	1	65864.1	72250.4	91.16	PASS	70-125	41323.1	48138.4	85.84	PASS	70-125
N024053-015B	SAMP	1	44976.1	72250.4	62.25	NR!	70-125	26562.3	48138.4	55.18	NR!	70-125
N024064-001B	SAMP	1	71899	72250.4	99.51	PASS	70-125	49572.6	48138.4	102.98	PASS	70-125
N024064-002B	SAMP	1	82510.9	72250.4	114.2	PASS	70-125	55869.8	48138.4	116.06	PASS	70-125
N024064-003B	SAMP	1	58839.1	72250.4	81.44	PASS	70-125	36896.9	48138.4	76.65	PASS	70-125
N024064-004B	SAMP	1	55283.6	72250.4	76.52	PASS	70-125	33658.8	48138.4	69.92	NR!	70-125
N024064-005B	SAMP	1	67879	72250.4	93.95	PASS	70-125	43802.9	48138.4	90.99	PASS	70-125
N024064-006B	SAMP	1	47097.7	72250.4	65.19	NR!	70-125	28496.8	48138.4	59.2	NR!	70-125
CCV4	CCV	1	82016.3	72250.4	113.52	PASS	70-125	56640.1	48138.4	117.66	PASS	70-125
CCB4	CCB	1	71143.5	72250.4	98.47	PASS	70-125	49537.1	48138.4	102.91	PASS	70-125
N024064-007B	SAMP	1	50485.3	72250.4	69.88	NR!	70-125	31576.8	48138.4	65.6	NR!	70-125
N024064-009B	SAMP	1	68030.5	72250.4	94.16	PASS	70-125	46331.1	48138.4	96.25	PASS	70-125
N024064-010B	SAMP	1	67217.4	72250.4	93.034	PASS	70-125	45759.4	48138.4	95.058	PASS	70-125
N024064-012B	SAMP	1	64793.1	72250.4	89.68	PASS	70-125	44421.3	48138.4	92.28	PASS	70-125
N024064-013B	SAMP	1	48085.9	72250.4	66.55	NR!	70-125	28945.3	48138.4	60.13	NR!	70-125
N024064-014B	SAMP	1	62634.7	72250.4	86.69	PASS	70-125	39611.1	48138.4	82.29	PASS	70-125
CCV5	CCV	1	79693.5	72250.4	110.3	PASS	70-125	54620	48138.4	113.46	PASS	70-125
CCB5	CCB	1	70001.8	72250.4	96.89	PASS	70-125	48634.6	48138.4	101.03	PASS	70-125
LLCCV1	CCV2	1	68080.9	72250.4	94.23	PASS	70-125	48536.3	48138.4	100.83	PASS	70-125
ICSA2	ICSA	1	69561	72250.4	96.28	PASS	70-125	47978	48138.4	99.67	PASS	70-125
ICSAB2	ICSAB	1	70771.6	72250.4	97.95	PASS	70-125	48141.8	48138.4	100.01	PASS	70-125

INTERNAL STANDARD: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	60263	60263	100	PASS	70-125	1794767.9	1794767.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	63703.7	60263	105.71	PASS	70-125	1882849	1794767.9	104.91	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	59942.9	60263	99.47	PASS	70-125	1787845.3	1794767.9	99.61	PASS	70-125
Std3-5/50 ppb	ICAL	1	61632.5	60263	102.27	PASS	70-125	1795313.7	1794767.9	100.03	PASS	70-125
Std4-10/100 ppb	ICAL	1	60996.7	60263	101.22	PASS	70-125	1800154.5	1794767.9	100.3	PASS	70-125
Std5-20/200 ppb	ICAL	1	61722.8	60263	102.42	PASS	70-125	1806341.4	1794767.9	100.64	PASS	70-125
Std6-40/400 ppb	ICAL	1	61626.8	60263	102.26	PASS	70-125	1818337.8	1794767.9	101.31	PASS	70-125
Std7-100/1000 ppb	ICAL	1	60756.9	60263	100.82	PASS	70-125	1778430.4	1794767.9	99.09	PASS	70-125
Std8-200/2000 ppb	ICAL	1	59676.5	60263	99.027	PASS	70-125	1720996.4	1794767.9	95.89	PASS	70-125
ICV	ICV	1	62412.2	60263	103.57	PASS	70-125	1945418.8	1794767.9	108.39	PASS	70-125
ICB	ICB	1	60845.1	60263	100.97	PASS	70-125	1854961.5	1794767.9	103.35	PASS	70-125
LLICV	CCV1	1	50032	60263	83.023	PASS	70-125	1567396	1794767.9	87.33	PASS	70-125
ICSA1	ICSA	1	62515.8	60263	103.74	PASS	70-125	1730448.4	1794767.9	96.42	PASS	70-125
ICSAB1	ICSAB	1	45700.4	60263	75.83	PASS	70-125	1440361.8	1794767.9	80.25	PASS	70-125
MB-62101	MBLK	1	65919.2	60263	109.39	PASS	70-125	1801261.6	1794767.9	100.36	PASS	70-125
LCS-62101	LCS	1	72917.1	60263	121	PASS	70-125	1882426.7	1794767.9	104.88	PASS	70-125
N024038-004B	SAMP	1	59858	60263	99.33	PASS	70-125	1499798.6	1794767.9	83.57	PASS	70-125
N024038-004B	SAMP	5	42847.1	60263	71.1	PASS	70-125	1256145.1	1794767.9	69.99	NR!	70-125
N024038-004B-PS	PS	1	57837.6	60263	95.98	PASS	70-125	1537105.9	1794767.9	85.64	PASS	70-125
N024038-004B-MS	MS	1	58308.2	60263	96.76	PASS	70-125	1487582.6	1794767.9	82.88	PASS	70-125
N024038-004B-MSD	MSD	1	57823	60263	95.95	PASS	70-125	1506445.6	1794767.9	83.94	PASS	70-125
N024038-005B	SAMP	1	42880.5	60263	71.16	PASS	70-125	1106706.2	1794767.9	61.66	NR!	70-125
N024038-006B	SAMP	1	29038.8	60263	48.19	NR!	70-125	760067.4	1794767.9	42.35	NR!	70-125
N024038-007B	SAMP	1	24892	60263	41.31	NR!	70-125	712781.9	1794767.9	39.71	NR!	70-125
CCV1	CCV	1	69000.9	60263	114.5	PASS	70-125	2103719.6	1794767.9	117.21	PASS	70-125
CCB1	CCB	1	59828.1	60263	99.28	PASS	70-125	1888041	1794767.9	105.2	PASS	70-125
N024038-008B	SAMP	1	32271.6	60263	53.55	NR!	70-125	911030.1	1794767.9	50.76	NR!	70-125
N024038-009B	SAMP	1	26066	60263	43.25	NR!	70-125	769850.1	1794767.9	42.89	NR!	70-125
N024038-010B	SAMP	1	28542.4	60263	47.36	NR!	70-125	837532.1	1794767.9	46.67	NR!	70-125
N024038-014B	SAMP	1	36865.7	60263	61.17	NR!	70-125	1086730.1	1794767.9	60.55	NR!	70-125
N024038-015B	SAMP	1	68089	60263	112.99	PASS	70-125	2058440.8	1794767.9	114.69	PASS	70-125
N024053-001B	SAMP	1	56838.4	60263	94.32	PASS	70-125	1667327.5	1794767.9	92.9	PASS	70-125
N024053-002B	SAMP	1	66944.5	60263	111.09	PASS	70-125	2003931.8	1794767.9	111.65	PASS	70-125
N024053-003B	SAMP	1	49874.7	60263	82.76	PASS	70-125	1461991.7	1794767.9	81.46	PASS	70-125
N024053-004B	SAMP	1	65679.6	60263	108.99	PASS	70-125	2005180.4	1794767.9	111.72	PASS	70-125
N024053-005B	SAMP	1	37372.4	60263	62.015	NR!	70-125	1075804.1	1794767.9	59.94	NR!	70-125
CCV2	CCV	1	69246.3	60263	114.91	PASS	70-125	2110332.3	1794767.9	117.58	PASS	70-125
CCB2	CCB	1	60879.6	60263	101.02	PASS	70-125	1881659.2	1794767.9	104.84	PASS	70-125
N024053-006B	SAMP	1	36460.5	60263	60.5	NR!	70-125	1068744.8	1794767.9	59.55	NR!	70-125
N024053-007B	SAMP	1	70494.6	60263	116.98	PASS	70-125	2094948.8	1794767.9	116.73	PASS	70-125
N024053-008B	SAMP	1	35686.5	60263	59.22	NR!	70-125	1032913.9	1794767.9	57.55	NR!	70-125

INTERNAL STANDARD: 170508A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N024053-009B	SAMP	1	28973.1	60263	48.078	NR!	70-125	859141	1794767.9	47.87	NR!	70-125
N024053-010B	SAMP	1	29301.5	60263	48.62	NR!	70-125	869495.4	1794767.9	48.45	NR!	70-125
N024053-013B	SAMP	1	42362.5	60263	70.3	PASS	70-125	1201000.6	1794767.9	66.92	NR!	70-125
MB-62121	MBLK	1	60769.2	60263	100.84	PASS	70-125	1819062.1	1794767.9	101.35	PASS	70-125
LCS-62121	LCS	1	62751.2	60263	104.13	PASS	70-125	1934217.8	1794767.9	107.77	PASS	70-125
N024053-014B	SAMP	1	42275.6	60263	70.15	PASS	70-125	1193560.2	1794767.9	66.5	NR!	70-125
N024053-014B	SAMP	5	54013.5	60263	89.63	PASS	70-125	1530899.3	1794767.9	85.3	PASS	70-125
CCV3	CCV	1	66310.9	60263	110.04	PASS	70-125	1991946.5	1794767.9	110.99	PASS	70-125
CCB3	CCB	1	58144.3	60263	96.48	PASS	70-125	1812288.2	1794767.9	100.98	PASS	70-125
N024053-014B-PS	PS	1	41047.9	60263	68.11	NR!	70-125	1195799.9	1794767.9	66.63	NR!	70-125
N024053-014B-MS	MS	1	43140.1	60263	71.59	PASS	70-125	1203470.1	1794767.9	67.054	NR!	70-125
N024053-014B-MSD	MSD	1	44433.4	60263	73.73	PASS	70-125	1209575.6	1794767.9	67.39	NR!	70-125
N024053-015B	SAMP	1	26004.8	60263	43.15	NR!	70-125	734053.8	1794767.9	40.9	NR!	70-125
N024064-001B	SAMP	1	55420.3	60263	91.96	PASS	70-125	1552311.3	1794767.9	86.49	PASS	70-125
N024064-002B	SAMP	1	67303.5	60263	111.68	PASS	70-125	1978548.4	1794767.9	110.24	PASS	70-125
N024064-003B	SAMP	1	37333.5	60263	61.95	NR!	70-125	1048341.4	1794767.9	58.41	NR!	70-125
N024064-004B	SAMP	1	33294.8	60263	55.25	NR!	70-125	948689.9	1794767.9	52.86	NR!	70-125
N024064-005B	SAMP	1	46291	60263	76.81	PASS	70-125	1348859.8	1794767.9	75.16	PASS	70-125
N024064-006B	SAMP	1	28365.4	60263	47.069	NR!	70-125	785319	1794767.9	43.76	NR!	70-125
CCV4	CCV	1	66418.9	60263	110.22	PASS	70-125	2019458.6	1794767.9	112.52	PASS	70-125
CCB4	CCB	1	58525.8	60263	97.12	PASS	70-125	1822469.4	1794767.9	101.54	PASS	70-125
N024064-007B	SAMP	1	31604.6	60263	52.44	NR!	70-125	902995.1	1794767.9	50.31	NR!	70-125
N024064-009B	SAMP	1	51866.5	60263	86.067	PASS	70-125	1466768.3	1794767.9	81.72	PASS	70-125
N024064-010B	SAMP	1	51041.5	60263	84.7	PASS	70-125	1448223.3	1794767.9	80.69	PASS	70-125
N024064-012B	SAMP	1	50159	60263	83.23	PASS	70-125	1425401.6	1794767.9	79.42	PASS	70-125
N024064-013B	SAMP	1	29244.7	60263	48.53	NR!	70-125	816920.4	1794767.9	45.52	NR!	70-125
N024064-014B	SAMP	1	41466.9	60263	68.81	NR!	70-125	1159745.5	1794767.9	64.62	NR!	70-125
CCV5	CCV	1	64554.6	60263	107.12	PASS	70-125	1939610	1794767.9	108.07	PASS	70-125
CCB5	CCB	1	57379.3	60263	95.21	PASS	70-125	1779003.5	1794767.9	99.12	PASS	70-125
LLCCV1	CCV2	1	57680.4	60263	95.71	PASS	70-125	1770822.5	1794767.9	98.67	PASS	70-125
ICSA2	ICSA	1	52692.3	60263	87.44	PASS	70-125	1563273.7	1794767.9	87.1	PASS	70-125
ICSAB2	ICSAB	1	54072.5	60263	89.73	PASS	70-125	1561865.1	1794767.9	87.023	PASS	70-125

INTERNAL STANDARD: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	71942.2	71942.2	100	PASS	70-125	47726.3	47726.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	81841.3	71942.2	113.76	PASS	70-125	53969	47726.3	113.08	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	78954.1	71942.2	109.75	PASS	70-125	52302.3	47726.3	109.59	PASS	70-125
Std3-5/50 ppb	ICAL	1	78188.4	71942.2	108.68	PASS	70-125	51820.7	47726.3	108.58	PASS	70-125
Std4-10/100 ppb	ICAL	1	78945.1	71942.2	109.73	PASS	70-125	52184.2	47726.3	109.34	PASS	70-125
Std5-20/200 ppb	ICAL	1	80112.8	71942.2	111.36	PASS	70-125	52866.2	47726.3	110.77	PASS	70-125
Std6-40/400 ppb	ICAL	1	82282.3	71942.2	114.37	PASS	70-125	53640.9	47726.3	112.39	PASS	70-125
Std7-100/1000 ppb	ICAL	1	77588.7	71942.2	107.85	PASS	70-125	51280.4	47726.3	107.45	PASS	70-125
Std8-200/2000 ppb	ICAL	1	77418.8	71942.2	107.61	PASS	70-125	50579.3	47726.3	105.98	PASS	70-125
ICV	ICV	1	84524	71942.2	117.49	PASS	70-125	54383.5	47726.3	113.95	PASS	70-125
ICB	ICB	1	78847.4	71942.2	109.6	PASS	70-125	52519.8	47726.3	110.04	PASS	70-125
LLICV	CCV1	1	70959.1	71942.2	98.63	PASS	70-125	46735.4	47726.3	97.92	PASS	70-125
ICSA1	ICSA	1	87583.3	71942.2	121.74	PASS	70-125	53284.5	47726.3	111.65	PASS	70-125
ICSAB1	ICSAB	1	79817	71942.2	110.95	PASS	70-125	49250.8	47726.3	103.19	PASS	70-125
N024038-004B	SAMP	25	71629.8	71942.2	99.57	PASS	70-125	47230.3	47726.3	98.96	PASS	70-125
N024038-004B-PS	PS	5	70334.6	71942.2	97.77	PASS	70-125	46157.1	47726.3	96.71	PASS	70-125
N024038-004B-MS	MS	5	68474.6	71942.2	95.18	PASS	70-125	44511.7	47726.3	93.26	PASS	70-125
N024038-004B-MSD	MSD	5	68886.3	71942.2	95.75	PASS	70-125	44921.4	47726.3	94.12	PASS	70-125
N024038-005B	SAMP	5	69205.3	71942.2	96.2	PASS	70-125	44670.7	47726.3	93.6	PASS	70-125
N024038-005B	SAMP	10	76210.2	71942.2	105.93	PASS	70-125	49546	47726.3	103.81	PASS	70-125
N024038-006B	SAMP	5	69424.1	71942.2	96.5	PASS	70-125	42879.5	47726.3	89.84	PASS	70-125
N024038-006B	SAMP	10	75245.9	71942.2	104.59	PASS	70-125	47758.5	47726.3	100.07	PASS	70-125
N024038-007B	SAMP	5	66288	71942.2	92.14	PASS	70-125	40698.3	47726.3	85.27	PASS	70-125
N024038-007B	SAMP	10	73447.2	71942.2	102.09	PASS	70-125	47017.6	47726.3	98.52	PASS	70-125
CCV1	CCV	1	87758.9	71942.2	121.99	PASS	70-125	57345.9	47726.3	120.16	PASS	70-125
CCB1	CCB	1	76210.5	71942.2	105.93	PASS	70-125	51195.7	47726.3	107.27	PASS	70-125
N024038-008B	SAMP	5	64053.9	71942.2	89.035	PASS	70-125	42106.2	47726.3	88.22	PASS	70-125
N024038-009B	SAMP	5	66806.8	71942.2	92.86	PASS	70-125	42343.5	47726.3	88.72	PASS	70-125
N024038-010B	SAMP	5	66965.2	71942.2	93.082	PASS	70-125	42401.6	47726.3	88.84	PASS	70-125
N024038-014B	SAMP	5	70127.8	71942.2	97.48	PASS	70-125	45545.7	47726.3	95.43	PASS	70-125
N024053-003B	SAMP	5	70998.3	71942.2	98.69	PASS	70-125	47151.2	47726.3	98.8	PASS	70-125
N024053-005B	SAMP	5	67109.1	71942.2	93.28	PASS	70-125	43682.7	47726.3	91.53	PASS	70-125
N024053-006B	SAMP	5	68814.8	71942.2	95.65	PASS	70-125	45376.1	47726.3	95.076	PASS	70-125
N024053-008B	SAMP	5	67276.3	71942.2	93.51	PASS	70-125	43629.1	47726.3	91.42	PASS	70-125
N024053-008B	SAMP	25	70008.9	71942.2	97.31	PASS	70-125	45925.4	47726.3	96.23	PASS	70-125
N024053-009B	SAMP	5	63046.5	71942.2	87.63	PASS	70-125	41154.9	47726.3	86.23	PASS	70-125
CCV2	CCV	1	82242.9	71942.2	114.32	PASS	70-125	54972.1	47726.3	115.18	PASS	70-125
CCB2	CCB	1	71027.9	71942.2	98.73	PASS	70-125	49419.9	47726.3	103.55	PASS	70-125
N024053-010B	SAMP	5	61446.4	71942.2	85.41	PASS	70-125	39825	47726.3	83.44	PASS	70-125
N024053-013B	SAMP	5	66061.5	71942.2	91.83	PASS	70-125	44139.4	47726.3	92.48	PASS	70-125
N024053-014B	SAMP	25	67109.2	71942.2	93.28	PASS	70-125	46012.3	47726.3	96.41	PASS	70-125

INTERNAL STANDARD: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]					72 Ge (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N024053-014B-PS	PS	5	65564	71942.2	91.13	PASS	70-125	42908.5	47726.3	89.91	PASS	70-125
N024053-014B-MS	MS	5	65223.8	71942.2	90.66	PASS	70-125	43413	47726.3	90.96	PASS	70-125
N024053-014B-MSD	MSD	5	64842.3	71942.2	90.13	PASS	70-125	43099	47726.3	90.3	PASS	70-125
N024053-015B	SAMP	5	60594.6	71942.2	84.23	PASS	70-125	39203.4	47726.3	82.14	PASS	70-125
N024053-015B	SAMP	50	68634.1	71942.2	95.4	PASS	70-125	45388.3	47726.3	95.1	PASS	70-125
CCV3	CCV	1	81397.4	71942.2	113.14	PASS	70-125	55160.4	47726.3	115.58	PASS	70-125
CCB3	CCB	1	69242.2	71942.2	96.25	PASS	70-125	49208.3	47726.3	103.11	PASS	70-125
N024053-009B	SAMP	5	60488.2	71942.2	84.079	PASS	70-125	40183.7	47726.3	84.2	PASS	70-125
N024053-010B	SAMP	5	61229.1	71942.2	85.11	PASS	70-125	39810.5	47726.3	83.41	PASS	70-125
CCV4	CCV	1	77834	71942.2	108.19	PASS	70-125	53267.7	47726.3	111.61	PASS	70-125
CCB4	CCB	1	67386.9	71942.2	93.67	PASS	70-125	47453.1	47726.3	99.43	PASS	70-125
LLCCV1	CCV2	1	67096.8	71942.2	93.26	PASS	70-125	47822.9	47726.3	100.2	PASS	70-125
ICSA2	ICSA	1	74257	71942.2	103.22	PASS	70-125	49912.6	47726.3	104.58	PASS	70-125
ICSAB2	ICSAB	1	70962.6	71942.2	98.64	PASS	70-125	48079.6	47726.3	100.74	PASS	70-125
N024053-010B	SAMP	10	69726.4	71942.2	96.92	PASS	70-125	46734.5	47726.3	97.92	PASS	70-125
N024053-015B	SAMP	10	64547.9	71942.2	89.72	PASS	70-125	44376.7	47726.3	92.98	PASS	70-125
N024053-014B-MSD	MSD	5	60469.2	71942.2	84.052	PASS	70-125	41632.9	47726.3	87.23	PASS	70-125
CCV5	CCV	1	74761.4	71942.2	103.92	PASS	70-125	52743.8	47726.3	110.51	PASS	70-125
CCB5	CCB	1	73645.5	71942.2	102.37	PASS	70-125	54466	47726.3	114.12	PASS	70-125
CCV6	CCV	1	56377.4	71942.2	78.36	PASS	70-125	41546	47726.3	87.051	PASS	70-125
CCB6	CCB	1	74049.1	71942.2	102.93	PASS	70-125	54674.6	47726.3	114.56	PASS	70-125
LLCCV2	CCV2	1	55998.4	71942.2	77.84	PASS	70-125	41680.8	47726.3	87.33	PASS	70-125
ICSA3	ICSA	1	66970.8	71942.2	93.09	PASS	70-125	47624.7	47726.3	99.79	PASS	70-125
ICSAB3	ICSAB	1	64098.7	71942.2	89.097	PASS	70-125	44992.9	47726.3	94.27	PASS	70-125

INTERNAL STANDARD: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	59435.5	59435.5	100	PASS	70-125	1805738.6	1805738.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	66536.1	59435.5	111.95	PASS	70-125	2013783	1805738.6	111.52	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	65329.1	59435.5	109.92	PASS	70-125	1944748.4	1805738.6	107.7	PASS	70-125
Std3-5/50 ppb	ICAL	1	64026.4	59435.5	107.72	PASS	70-125	1923459.4	1805738.6	106.52	PASS	70-125
Std4-10/100 ppb	ICAL	1	65245.4	59435.5	109.78	PASS	70-125	1955020.4	1805738.6	108.27	PASS	70-125
Std5-20/200 ppb	ICAL	1	66174.5	59435.5	111.34	PASS	70-125	1993975.4	1805738.6	110.42	PASS	70-125
Std6-40/400 ppb	ICAL	1	68032.2	59435.5	114.46	PASS	70-125	2005797.5	1805738.6	111.08	PASS	70-125
Std7-100/1000 ppb	ICAL	1	64991.9	59435.5	109.35	PASS	70-125	1926465.6	1805738.6	106.69	PASS	70-125
Std8-200/2000 ppb	ICAL	1	63581	59435.5	106.97	PASS	70-125	1874990.6	1805738.6	103.84	PASS	70-125
ICV	ICV	1	66097.5	59435.5	111.21	PASS	70-125	2114957.4	1805738.6	117.12	PASS	70-125
ICB	ICB	1	64783.6	59435.5	109	PASS	70-125	2012151	1805738.6	111.43	PASS	70-125
LLICV	CCV1	1	59153.2	59435.5	99.53	PASS	70-125	1793784.6	1805738.6	99.34	PASS	70-125
ICSA1	ICSA	1	61941.4	59435.5	104.22	PASS	70-125	1763843.3	1805738.6	97.68	PASS	70-125
ICSAB1	ICSAB	1	55642.2	59435.5	93.62	PASS	70-125	1625341.3	1805738.6	90.01	PASS	70-125
N024038-004B	SAMP	25	59596.1	59435.5	100.27	PASS	70-125	1696334.9	1805738.6	93.94	PASS	70-125
N024038-004B-PS	PS	5	55737.2	59435.5	93.78	PASS	70-125	1582368.7	1805738.6	87.63	PASS	70-125
N024038-004B-MS	MS	5	53798.4	59435.5	90.52	PASS	70-125	1548966.1	1805738.6	85.78	PASS	70-125
N024038-004B-MSD	MSD	5	54771.3	59435.5	92.15	PASS	70-125	1541343.7	1805738.6	85.36	PASS	70-125
N024038-005B	SAMP	5	50923.6	59435.5	85.68	PASS	70-125	1446618.2	1805738.6	80.11	PASS	70-125
N024038-005B	SAMP	10	58652.6	59435.5	98.68	PASS	70-125	1643725.1	1805738.6	91.028	PASS	70-125
N024038-006B	SAMP	5	48511.7	59435.5	81.62	PASS	70-125	1324854.6	1805738.6	73.37	PASS	70-125
N024038-006B	SAMP	10	55587.4	59435.5	93.53	PASS	70-125	1525896.2	1805738.6	84.5	PASS	70-125
N024038-007B	SAMP	5	44384.4	59435.5	74.68	PASS	70-125	1212493.8	1805738.6	67.15	NR!	70-125
N024038-007B	SAMP	10	52654.5	59435.5	88.59	PASS	70-125	1512960	1805738.6	83.79	PASS	70-125
CCV1	CCV	1	68974	59435.5	116.05	PASS	70-125	2080932.7	1805738.6	115.24	PASS	70-125
CCB1	CCB	1	59962.9	59435.5	100.89	PASS	70-125	1870978.2	1805738.6	103.61	PASS	70-125
N024038-008B	SAMP	5	45662.3	59435.5	76.83	PASS	70-125	1347600.4	1805738.6	74.63	PASS	70-125
N024038-009B	SAMP	5	45334.8	59435.5	76.28	PASS	70-125	1315854	1805738.6	72.87	PASS	70-125
N024038-010B	SAMP	5	47893.3	59435.5	80.58	PASS	70-125	1358942.3	1805738.6	75.26	PASS	70-125
N024038-014B	SAMP	5	50467.7	59435.5	84.91	PASS	70-125	1473327.9	1805738.6	81.59	PASS	70-125
N024053-003B	SAMP	5	54324.4	59435.5	91.4	PASS	70-125	1594345.1	1805738.6	88.29	PASS	70-125
N024053-005B	SAMP	5	49187	59435.5	82.76	PASS	70-125	1425206.9	1805738.6	78.93	PASS	70-125
N024053-006B	SAMP	5	49437.7	59435.5	83.18	PASS	70-125	1449964.6	1805738.6	80.3	PASS	70-125
N024053-008B	SAMP	5	48434.8	59435.5	81.49	PASS	70-125	1397442.5	1805738.6	77.39	PASS	70-125
N024053-008B	SAMP	25	53244.4	59435.5	89.58	PASS	70-125	1597809.4	1805738.6	88.49	PASS	70-125
N024053-009B	SAMP	5	43816.2	59435.5	73.72	PASS	70-125	1360634.5	1805738.6	75.35	PASS	70-125
CCV2	CCV	1	64348.5	59435.5	108.27	PASS	70-125	2009051.8	1805738.6	111.26	PASS	70-125
CCB2	CCB	1	56762.8	59435.5	95.5	PASS	70-125	1821544.2	1805738.6	100.88	PASS	70-125
N024053-010B	SAMP	5	43417.3	59435.5	73.049	PASS	70-125	1260572.1	1805738.6	69.81	NR!	70-125
N024053-013B	SAMP	5	48671.2	59435.5	81.89	PASS	70-125	1412625.1	1805738.6	78.23	PASS	70-125
N024053-014B	SAMP	25	53905.2	59435.5	90.7	PASS	70-125	1583367.5	1805738.6	87.69	PASS	70-125

INTERNAL STANDARD: 170510A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]					103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N024053-014B-PS	PS	5	48483	59435.5	81.57	PASS	70-125	1440021.7	1805738.6	79.75	PASS	70-125
N024053-014B-MS	MS	5	49990.7	59435.5	84.11	PASS	70-125	1433566.3	1805738.6	79.39	PASS	70-125
N024053-014B-MSD	MSD	5	49142.4	59435.5	82.68	PASS	70-125	1417375.6	1805738.6	78.49	PASS	70-125
N024053-015B	SAMP	5	42946.2	59435.5	72.26	PASS	70-125	1196258.9	1805738.6	66.25	NR!	70-125
N024053-015B	SAMP	50	53183	59435.5	89.48	PASS	70-125	1563406.4	1805738.6	86.58	PASS	70-125
CCV3	CCV	1	65181.5	59435.5	109.67	PASS	70-125	1992689.2	1805738.6	110.35	PASS	70-125
CCB3	CCB	1	57415	59435.5	96.6	PASS	70-125	1780377.6	1805738.6	98.6	PASS	70-125
N024053-009B	SAMP	5	43675.9	59435.5	73.48	PASS	70-125	1291461.9	1805738.6	71.52	PASS	70-125
N024053-010B	SAMP	5	43813	59435.5	73.72	PASS	70-125	1248969.9	1805738.6	69.17	NR!	70-125
CCV4	CCV	1	62975.2	59435.5	105.96	PASS	70-125	1962887.8	1805738.6	108.7	PASS	70-125
CCB4	CCB	1	56569.8	59435.5	95.18	PASS	70-125	1771072.7	1805738.6	98.08	PASS	70-125
LLCCV1	CCV2	1	55511.8	59435.5	93.4	PASS	70-125	1772781.7	1805738.6	98.17	PASS	70-125
ICSA2	ICSA	1	54905.1	59435.5	92.38	PASS	70-125	1659416.7	1805738.6	91.9	PASS	70-125
ICSAB2	ICSAB	1	54571.7	59435.5	91.82	PASS	70-125	1569621.7	1805738.6	86.92	PASS	70-125
N024053-010B	SAMP	10	57001.3	59435.5	95.9	PASS	70-125	1653983.8	1805738.6	91.6	PASS	70-125
N024053-015B	SAMP	10	53986.5	59435.5	90.83	PASS	70-125	1533849	1805738.6	84.94	PASS	70-125
N024053-014B-MSD	MSD	5	48319	59435.5	81.3	PASS	70-125	1401920.9	1805738.6	77.64	PASS	70-125
CCV5	CCV	1	61055.8	59435.5	102.73	PASS	70-125	1961433.5	1805738.6	108.62	PASS	70-125
CCB5	CCB	1	55972.3	59435.5	94.17	PASS	70-125	2107513.3	1805738.6	116.71	PASS	70-125
CCV6	CCV	1	43708.2	59435.5	73.54	PASS	70-125	1639445.7	1805738.6	90.79	PASS	70-125
CCB6	CCB	1	60055.3	59435.5	101.04	PASS	70-125	2140030.4	1805738.6	118.51	PASS	70-125
LLCCV2	CCV2	1	46203	59435.5	77.74	PASS	70-125	1646287.4	1805738.6	91.17	PASS	70-125
ICSA3	ICSA	1	48416.9	59435.5	81.46	PASS	70-125	1611639.2	1805738.6	89.25	PASS	70-125
ICSAB3	ICSAB	1	47817.5	59435.5	80.45	PASS	70-125	1510499.4	1805738.6	83.65	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024053
Test Method: EPA 6020
Analysis Date: 5/8/2017

Matrix: Groundwater
Batch No.: 62101

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Mn & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024038-004B DT 5X	Arsenic	ug/L	1.264433	NA	1.12959	11.94%	10
N024038-004B DT 25X	Chromium	ug/L	433.3698	PASS	429.88	0.81%	10
N024038-004B DT 5X	Manganese	ug/L	1.100791	NA	1.03439	6.42%	10
N024038-004B DT 5X	Molybdenum	ug/L	15.57396	PASS	15.00681	3.78%	10
N024038-004B DT 5X	Selenium	ug/L	2.948828	NA	2.111424	39.66%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024053
Test Method: EPA 60201
Analysis Date: 5/8/2017 , 5/10/17

Matrix: Groundwater
Batch No.: 62121

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Se. The calculated concentration is <25RL.
Dilution test failed for As. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024053-014B DT 5X	Arsenic	ug/L	3.074042	FAIL	2.586251	18.86%	10
N024053-014B DT 25X	Chromium	ug/L	564.4483	PASS	536.8853	5.13%	10
N024053-014B DT 5X	Manganese	ug/L	15.6511	PASS	14.46257	8.22%	10
N024053-014B DT 25X	Molybdenum	ug/L	21.15254	PASS	22.37566	5.47%	10
N024053-014B DT 5X	Selenium	ug/L	~~4.753479~~ 6.337377	NA	~~3.669353~~ 4.753479	~~22.85~~% 33.3%	10

Note: NA - Not applicable

5/15/2017
FOR

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N024038-004B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115142**
Client ID:	**ZZZZZZ**	Batch ID: **62101**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.612	0.10	10.00	1.130	94.8	80	120				
Manganese	86.881	0.50	100.0	1.034	85.8	80	120				
Molybdenum	25.370	0.50	10.00	15.01	104	80	120				
Selenium	11.139	0.50	10.00	2.111	90.3	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024053-014B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	115142
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639460

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.141	0.10	10.00	2.586	95.5	80	120				
Manganese	101.012	0.50	100.0	14.46	86.5	80	120				

Sample ID	N024053-014B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	115146
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639610

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	33.290	2.5	10.00	22.38	109	80	120				
Selenium	14.366	2.5	10.00	4.753	96.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N024038-004B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115144
Client ID:	ZZZZZZ	Batch ID:	62101	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639498

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	393.049	5.0	10.00	429.9	-368	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024053
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N024053-014B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115144
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639524

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	532.754	5.0	10.00	536.9	-41.3	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

May 12, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024054

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on April 28, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucan for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024054

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
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EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *12-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024054
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024054-001A	MW-50-095-Q217	Groundwater	4/28/2017 9:03:00 AM	4/28/2017	5/12/2017
N024054-001B	MW-50-095-Q217	Groundwater	4/28/2017 9:03:00 AM	4/28/2017	5/12/2017
N024054-002A	MW-709-Q217	Groundwater	4/28/2017 9:50:00 AM	4/28/2017	5/12/2017
N024054-003A	MW-19-Q217	Groundwater	4/28/2017 9:45:00 AM	4/28/2017	5/12/2017
N024054-003B	MW-19-Q217	Groundwater	4/28/2017 9:45:00 AM	4/28/2017	5/12/2017

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024054
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024054-001

Client Sample ID: MW-50-095-Q217
Collection Date: 4/28/2017 9:03:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170503B** QC Batch: **R115041**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	10	0.33	1.0		µg/L	5	5/3/2017 07:29 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170502C** QC Batch: **62098**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	10	0.019	1.0		µg/L	1	5/3/2017 04:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-709-Q217
Lab Order:	N024054	**Collection Date:**	4/28/2017 9:50:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024054-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A**	QC Batch: **R115079**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2017 10:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024054
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024054-003

Client Sample ID: MW-19-Q217
Collection Date: 4/28/2017 9:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A** QC Batch: **R115079**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	440	3.3	10		µg/L	50	5/4/2017 10:53 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170503A** QC Batch: **62098**				PrepDate	**5/1/2017**		Analyst: **CEI**
Chromium	430	0.096	5.0		µg/L	5	5/4/2017 01:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024054
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R115041**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **LCSW**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636147**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.119	0.20	5.000	0	102	90	110				

Sample ID **MB-R115041**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **PBW**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N024053-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636162**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1030.660	20	500.0	524.7	101	90	110				

Sample ID **N024053-013AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636165**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1040.040	20	500.0	524.7	103	90	110	1031	0.906	20	

Sample ID **N024053-013ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2636166**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	539.530	20						524.7	2.79	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024054
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024053-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2636168**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1044.570	20	500.0	528.1	103	90	110				

Sample ID **N024054-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115041**
Client ID: **ZZZZZZ**	Batch ID: **R115041**	TestNo: **EPA 218.6**		Analysis Date: **5/3/2017**	SeqNo: **2641786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36.469	1.0	25.00	10.33	105	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024054
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115079**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **PBW**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115079**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **LCSW**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.975	0.20	5.000	0	99.5	90	110				

Sample ID **N024054-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	0	101	90	110				

Sample ID **N024054-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	688.065	10	250.0	442.2	98.3	90	110				

Sample ID **N024064-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	176.964	4.0	100.0	76.47	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024054
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024064-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110				

Sample ID **N024064-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	50.296	1.0	25.00	24.86	102	90	110				

Sample ID **N024064-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.135	1.0	25.00	21.11	100	90	110				

Sample ID **N024064-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.580	1.0	5.000	6.609	99.4	90	110				

Sample ID **N024064-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	75.106	4.0						76.47	1.79	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024054
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024064-003AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	50.053	1.0	25.00	24.86	101	90	110	50.30	0.484	20	

Sample ID **N024064-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7538.900	200	5000	2515	100	90	110				

Sample ID **N024064-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110				

Sample ID **N024064-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.720	1.0	5.000	12.69	101	90	110				

Sample ID **N024064-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.789	1.0	5.000	13.24	90.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024054
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024064-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.910	0.20	1.000	0	91.0	90	110				

Sample ID **N024064-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4361.900	100	2500	1882	99.2	90	110				

Sample ID **N024064-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.727	1.0	5.000	0	94.5	90	110				

Sample ID **N024064-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	614.815	10	250.0	354.5	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024054
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **MB-62098**	SampType: **MBLK**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115010**
Client ID: **PBW**	Batch ID: **62098**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2017**	SeqNo: **2634918**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.030	1.0									

Sample ID **LCS-62098**	SampType: **LCS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115010**
Client ID: **LCSW**	Batch ID: **62098**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2017**	SeqNo: **2634924**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.743	1.0	10.00	0	97.4	85	115				

Sample ID **N023952-001B-MS**	SampType: **MS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115010**
Client ID: **ZZZZZZ**	Batch ID: **62098**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2017**	SeqNo: **2634928**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.426	1.0	10.00	0.1275	93.0	75	125				

Sample ID **N023952-001B-MSD**	SampType: **MSD**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date: **5/1/2017**	RunNo: **115010**
Client ID: **ZZZZZZ**	Batch ID: **62098**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/3/2017**	SeqNo: **2634929**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.663	1.0	10.00	0.1275	95.4	75	125	9.426	2.49	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

Page 1 of 2

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State: CA
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:	Sample Receipt Condition (Y / N): 1. Chilled ✓; 2. Headspace; 3. Container Intact ✓; 4. Seal Present; 5. IR number; 6. Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#	Sample Temp: 2.8 / 3.0 °C
Submitted By: Alexis McIntyre	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	Courier: LAB
Title: Geologist 1			Tracking No.:
Signature: Date: 4/28/17	Sampled By: Jacob Mowhwig		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - GMP	Signature: Date: 4/28/17		
Project Number: RC000753.801B			

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 2 X 250 mL poly	Metals Dissolved (6020FF) As, HNO3 500 mL poly	Metals Dissolved (6020FF) Mo, HNO3 500 mL poly	Metals Dissolved (6020FF) Se, HNO3 500 mL poly	Metals Dissolved (6020FF) Cr, HNO3 500 mL poly	Metals Dissolved (6020FF) Mn, HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 125 mL poly	Calcium, Dissolved (EPA 200.7), HNO3 500 mL poly	IRON, Dissolved (EPA 200.7), HNO3 500 mL poly	Sodium, Dissolved (EPA 200.7) HNO3 500 mL poly	Manganese, Chromium, Dissolved (EPA 200.8), HNO3 500 mL poly	Magnesium, Dissolved (EPA 200.7), HNO3 500 mL poly	Chloride, E300 1000 mL poly	Alkalinity, (SM2320B), Total as CaCO3 1000 mL poly	TDS, SM2540C 1000 mL poly	Bromide, E300 1000 mL poly	Sulfate, E300 1000 mL poly	Specific conductance 120.1 1000 mL poly	pH (SM4500-HB) 1000 mL poly	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N024054 - 01	MW-50-095-Q217	4/28/17	0903		X					X																	E	2	P	BNS	
2	- 02	MW-709-Q217	4/28/17	0950		X																						E	1	P	BNS	
3	- 03	MW-19-Q217	4/28/17	0945		X					X																	E	2	P	BNS	
4																																
5																																
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Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Jordan Jarvis	4/28/17 1115	FEDEX PRIORITY	4/28/17 11:13
FEDEX PRIORITY	4/28/17 13:23	Yoandra Rodriguez	4/28/17 13:23
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for***: Title 22 metals,Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	4/28/2017	Workorder:	N024054
Rep sample Temp (Deg C):	2.8/3.1	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 5/4/2017

Reviewed By: MBC 5/5/2017

ASSET Laboratories

WORK ORDER Summary

30-Apr-17

WorkOrder: N024054

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 4/28/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024054-001A	MW-50-095-Q217	4/28/2017 9:03:00 AM	5/12/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024054-001B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024054-002A	MW-709-Q217	4/28/2017 9:50:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024054-003A	MW-19-Q217	4/28/2017 9:45:00 AM	5/12/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024054-003B			5/12/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/12/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024054-004A	FOLDER	5/12/2017	5/12/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/12/2017		Folder	Folder	☐	☐	☐	LAB

May 15, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024064

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 01, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N024064-004, N024064-006 and N024064-013 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024064-003, N024064-004, N024064-006, N024064-007, N024064-013 and N024064-014 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N024053-014B-MS and N024053-014BMSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

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ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *15-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024064
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024064-001A	MW-25-Q217	Groundwater	5/1/2017 12:24:00 PM	5/1/2017	5/15/2017
N024064-001B	MW-25-Q217	Groundwater	5/1/2017 12:24:00 PM	5/1/2017	5/15/2017
N024064-001C	MW-25-Q217	Groundwater	5/1/2017 12:24:00 PM	5/1/2017	5/15/2017
N024064-002A	MW-21-EB-Q217	Groundwater	5/1/2017 12:20:00 PM	5/1/2017	5/15/2017
N024064-002B	MW-21-EB-Q217	Groundwater	5/1/2017 12:20:00 PM	5/1/2017	5/15/2017
N024064-002C	MW-21-EB-Q217	Groundwater	5/1/2017 12:20:00 PM	5/1/2017	5/15/2017
N024064-003A	MW-35-135-Q217	Groundwater	5/1/2017 1:01:00 PM	5/1/2017	5/15/2017
N024064-003B	MW-35-135-Q217	Groundwater	5/1/2017 1:01:00 PM	5/1/2017	5/15/2017
N024064-003C	MW-35-135-Q217	Groundwater	5/1/2017 1:01:00 PM	5/1/2017	5/15/2017
N024064-004A	MW-37D-Q217	Groundwater	5/1/2017 1:52:00 PM	5/1/2017	5/15/2017
N024064-004B	MW-37D-Q217	Groundwater	5/1/2017 1:52:00 PM	5/1/2017	5/15/2017
N024064-004C	MW-37D-Q217	Groundwater	5/1/2017 1:52:00 PM	5/1/2017	5/15/2017
N024064-005A	MW-35-060-Q217	Groundwater	5/1/2017 1:47:00 PM	5/1/2017	5/15/2017
N024064-005B	MW-35-060-Q217	Groundwater	5/1/2017 1:47:00 PM	5/1/2017	5/15/2017
N024064-005C	MW-35-060-Q217	Groundwater	5/1/2017 1:47:00 PM	5/1/2017	5/15/2017
N024064-006A	MW-41D-Q217	Groundwater	5/1/2017 2:54:00 PM	5/1/2017	5/15/2017
N024064-006B	MW-41D-Q217	Groundwater	5/1/2017 2:54:00 PM	5/1/2017	5/15/2017
N024064-006C	MW-41D-Q217	Groundwater	5/1/2017 2:54:00 PM	5/1/2017	5/15/2017
N024064-007A	MW-59-100-Q217	Groundwater	5/1/2017 2:41:00 PM	5/1/2017	5/15/2017
N024064-007B	MW-59-100-Q217	Groundwater	5/1/2017 2:41:00 PM	5/1/2017	5/15/2017
N024064-007C	MW-59-100-Q217	Groundwater	5/1/2017 2:41:00 PM	5/1/2017	5/15/2017
N024064-008A	MW-711-Q217	Groundwater	5/1/2017 3:30:00 PM	5/1/2017	5/15/2017
N024064-009A	MW-14-Q217	Groundwater	5/1/2017 3:52:00 PM	5/1/2017	5/15/2017
N024064-009B	MW-14-Q217	Groundwater	5/1/2017 3:52:00 PM	5/1/2017	5/15/2017
N024064-009C	MW-14-Q217	Groundwater	5/1/2017 3:52:00 PM	5/1/2017	5/15/2017
N024064-010A	MW-901-Q217	Groundwater	5/1/2017 4:02:00 PM	5/1/2017	5/15/2017
N024064-010B	MW-901-Q217	Groundwater	5/1/2017 4:02:00 PM	5/1/2017	5/15/2017
N024064-010C	MW-901-Q217	Groundwater	5/1/2017 4:02:00 PM	5/1/2017	5/15/2017
N024064-011A	MW-713-Q217	Groundwater	5/1/2017 4:10:00 PM	5/1/2017	5/15/2017

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11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024064
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024064-012A	MW-57-70-Q217	Groundwater	5/1/2017 11:58:00 AM	5/1/2017	5/15/2017
N024064-012B	MW-57-70-Q217	Groundwater	5/1/2017 11:58:00 AM	5/1/2017	5/15/2017
N024064-012C	MW-57-70-Q217	Groundwater	5/1/2017 11:58:00 AM	5/1/2017	5/15/2017
N024064-013A	MW-57-185-Q217	Groundwater	5/1/2017 2:06:00 PM	5/1/2017	5/15/2017
N024064-013B	MW-57-185-Q217	Groundwater	5/1/2017 2:06:00 PM	5/1/2017	5/15/2017
N024064-013C	MW-57-185-Q217	Groundwater	5/1/2017 2:06:00 PM	5/1/2017	5/15/2017
N024064-014A	MW-12-Q217	Groundwater	5/1/2017 3:18:00 PM	5/1/2017	5/15/2017
N024064-014B	MW-12-Q217	Groundwater	5/1/2017 3:18:00 PM	5/1/2017	5/15/2017
N024064-014C	MW-12-Q217	Groundwater	5/1/2017 3:18:00 PM	5/1/2017	5/15/2017
N024064-015A	MW-712-Q217	Groundwater	5/1/2017 2:20:00 PM	5/1/2017	5/15/2017

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170504A** QC Batch: **R115079** PrepDate							Analyst: **RAB**
Hexavalent Chromium	76	1.3	4.0		µg/L	20	5/4/2017 12:09 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170508A** QC Batch: **62121** PrepDate **5/3/2017**							Analyst: **CEI**
Chromium	74	0.019	1.0		µg/L	1	5/8/2017 09:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A** QC Batch: **R115079**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2017 12:28 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62121**				PrepDate		**5/3/2017**	Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/8/2017 09:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A** QC Batch: **R115079**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	25	0.33	1.0		µg/L	5	5/4/2017 12:47 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62121**				PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	22	0.019	1.0		µg/L	1	5/8/2017 10:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 1:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A** QC Batch: **R115079**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	6.6	0.33	1.0		µg/L	5	5/4/2017 02:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170508A** QC Batch: **62121**				PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	6.3	0.019	1.0		µg/L	1	5/8/2017 10:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A** QC Batch: **R115079**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	21	0.33	1.0		µg/L	5	5/4/2017 01:25 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62121**				PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	20	0.019	1.0		µg/L	1	5/8/2017 10:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A** QC Batch: **R115079**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/4/2017 07:04 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170510B** QC Batch: **62121**				PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/10/2017 01:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A**	QC Batch: **R115079**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2500	66	200		µg/L	1000	5/4/2017 04:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510B**	QC Batch: **62121**			PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	2600	0.48	25		µg/L	25	5/10/2017 02:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-711-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A**	QC Batch: **R115079**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2017 04:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024064
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024064-009

Client Sample ID: MW-14-Q217
Collection Date: 5/1/2017 3:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A** QC Batch: **R115079**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.33	1.0		µg/L	5	5/4/2017 04:41 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62121**				PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	5/8/2017 10:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024064
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024064-010

Client Sample ID: MW-901-Q217
Collection Date: 5/1/2017 4:02:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A** QC Batch: **R115079**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	13	0.33	1.0		µg/L	5	5/4/2017 05:01 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170508A** QC Batch: **62121**				PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	13	0.019	1.0		µg/L	1	5/8/2017 10:48 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-713-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 4:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A**	QC Batch: **R115079**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/4/2017 05:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024064
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024064-012

Client Sample ID: MW-57-70-Q217
Collection Date: 5/1/2017 11:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A**	QC Batch: **R115079**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	350	3.3	10		µg/L	50	5/4/2017 07:42 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510B**	QC Batch: **62121**			PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	340	0.096	5.0		µg/L	5	5/10/2017 02:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.9	0.33	1.0		µg/L	5	5/5/2017 09:26 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510B**	QC Batch: **62121**			PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	5.2	0.096	5.0		µg/L	5	5/10/2017 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170504A**	QC Batch: **R115079**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1900	33	100		µg/L	500	5/4/2017 06:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510B**	QC Batch: **62121**			PrepDate	**5/3/2017**		Analyst: **CEI**
Chromium	2000	0.48	25		µg/L	25	5/10/2017 02:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-712-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2017 09:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115079**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **PBW**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637074**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115079**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **LCSW**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637075**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.975	0.20	5.000	0	99.5	90	110				

Sample ID **N024054-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.013	0.20	1.000	0	101	90	110				

Sample ID **N024054-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637079**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	688.065	10	250.0	442.2	98.3	90	110				

Sample ID **N024064-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	176.964	4.0	100.0	76.47	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024064-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637088**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110				

Sample ID **N024064-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637090**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	50.296	1.0	25.00	24.86	102	90	110				

Sample ID **N024064-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637092**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	46.135	1.0	25.00	21.11	100	90	110				

Sample ID **N024064-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637096**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	11.580	1.0	5.000	6.609	99.4	90	110				

Sample ID **N024064-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637097**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	75.106	4.0						76.47	1.79	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024064-003AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	50.053	1.0	25.00	24.86	101	90	110	50.30	0.484	20	

Sample ID **N024064-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637102**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7538.900	200	5000	2515	100	90	110				

Sample ID **N024064-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637104**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.041	0.20	1.000	0	104	90	110				

Sample ID **N024064-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637106**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.720	1.0	5.000	12.69	101	90	110				

Sample ID **N024064-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	17.789	1.0	5.000	13.24	90.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024064-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.910	0.20	1.000	0	91.0	90	110				

Sample ID **N024064-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637114**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4361.900	100	2500	1882	99.2	90	110				

Sample ID **N024064-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637117**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.727	1.0	5.000	0	94.5	90	110				

Sample ID **N024064-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115079**
Client ID: **ZZZZZZ**	Batch ID: **R115079**	TestNo: **EPA 218.6**		Analysis Date: **5/4/2017**	SeqNo: **2637121**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	614.815	10	250.0	354.5	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115084	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	PBW	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637214

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R115084	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	LCSW	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637215

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.011	0.20	5.000	0	100	90	110				

Sample ID	N024064-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.864	1.0	5.000	5.861	100	90	110				

Sample ID	N024064-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Sample ID	N024074-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.130	0.20	1.000	1.109	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637222

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	171.480	4.0	100.0	70.94	101	90	110				

Sample ID	N024074-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1078.390	20	500.0	581.6	99.4	90	110				

Sample ID	N024074-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637228

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	878.150	20	500.0	367.6	102	90	110				

Sample ID	N024074-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1332.790	20	500.0	829.4	101	90	110				

Sample ID	N024074-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2832.260	40	1000	1813	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637234

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	234.004	4.0	100.0	133.1	101	90	110				

Sample ID	N024074-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110				

Sample ID	N024074-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.925	1.0	5.000	2.946	99.6	90	110				

Sample ID	N024074-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637242

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	576.350	20						581.6	0.905	20	

Sample ID	N024074-008AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637243

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2847.440	40	1000	1813	103	90	110	2832	0.535	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024074-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.074	1.0	5.000	0	101	90	110				

Sample ID **N024074-012AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID **N024074-013AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID **N024074-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.588	0.20	5.000	5.442	103	90	110				

Sample ID **N024107-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024107-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1046.900	20	500.0	546.3	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62121	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115141
Client ID:	PBW	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639387

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.025	1.0									

Sample ID	LCS-62121	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115141
Client ID:	LCSW	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/8/2017	SeqNo:	2639388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.786	1.0	10.00	0	97.9	85	115				

Sample ID	N024053-014B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115144
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639525

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	528.347	5.0	10.00	536.9	-85.4	75	125				S

Sample ID	N024053-014B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115144
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639550

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	533.278	5.0	10.00	536.9	-36.1	75	125	528.3	0.929	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.6	0.11	0.25		mg/L	5	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 1:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.27	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-060-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 1:47:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.2	0.11	0.25		mg/L	5	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.41	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.0	0.11	0.25		mg/L	5	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-14-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 3:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 4:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.4	0.11	0.25		mg/L	5	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-70-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 11:58:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	8.3	0.22	0.50		mg/L	10	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-57-185-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:06:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-12-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	15	0.44	1.0		mg/L	20	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115162	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	PBW	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115162	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	LCSW	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0	101	85	115				

Sample ID	N024053-006CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.02380	0	20	

Sample ID	N024053-006CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640334

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0.02380	96.4	75	125				

Sample ID	N024053-006CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.523	0.050	0.5000	0.02380	99.8	75	125	0.5056	3.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-25-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 12:24:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62121**				PrepDate	**5/3/2017**	Analyst: **CEI**
Arsenic	1.0	0.025	0.10		µg/L	1	5/8/2017 09:52 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 09:52 PM
Molybdenum	3.5	0.039	0.50		µg/L	1	5/8/2017 09:52 PM
Selenium	7.4	0.028	0.50		µg/L	1	5/8/2017 09:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-EB-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 12:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170508B**	QC Batch: **62121**				PrepDate	**5/3/2017**	Analyst: **CEI**
Molybdenum	ND	0.039	0.50		µg/L	1	5/8/2017 09:58 PM
Selenium	ND	0.028	0.50		µg/L	1	5/8/2017 09:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-35-135-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 1:01:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62121**				PrepDate	**5/3/2017**	Analyst: **CEI**
Arsenic	0.67	0.025	0.10		µg/L	1	5/8/2017 10:03 PM
Manganese	2.1	0.056	0.50		µg/L	1	5/8/2017 10:03 PM
Molybdenum	18	0.19	2.5		µg/L	5	5/10/2017 01:29 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 01:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-37D-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 1:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510C**	QC Batch: **62121**			PrepDate	**5/3/2017**	Analyst: **CEI**	
Molybdenum	51	0.19	2.5		µg/L	5	5/10/2017 01:35 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 01:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024064
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024064-005

Client Sample ID: MW-35-060-Q217
Collection Date: 5/1/2017 1:47:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62121**			PrepDate	**5/3/2017**	Analyst: **CEI**	
Arsenic	0.94	0.025	0.10		µg/L	1	5/8/2017 10:15 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 10:15 PM
Molybdenum	10	0.039	0.50		µg/L	1	5/8/2017 10:15 PM
Selenium	1.0	0.028	0.50		µg/L	1	5/8/2017 10:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-41D-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62121**				PrepDate	**5/3/2017**	Analyst: **CEI**
Arsenic	2.0	0.12	0.50		µg/L	5	5/10/2017 01:52 PM
Manganese	74	0.28	2.5		µg/L	5	5/10/2017 01:52 PM
Molybdenum	85	1.9	25		µg/L	50	5/10/2017 03:33 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 01:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-59-100-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 2:41:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510C**	QC Batch: **62121**				PrepDate	**5/3/2017**	Analyst: **CEI**
Arsenic	2.2	0.12	0.50		µg/L	5	5/10/2017 01:57 PM
Manganese	ND	0.28	2.5		µg/L	5	5/10/2017 01:57 PM
Molybdenum	9.5	0.19	2.5		µg/L	5	5/10/2017 01:57 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 01:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024064
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024064-009

Client Sample ID: MW-14-Q217
Collection Date: 5/1/2017 3:52:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62121**			PrepDate	**5/3/2017**	Analyst: **CEI**	
Arsenic	0.75	0.025	0.10		µg/L	1	5/8/2017 10:42 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 10:42 PM
Molybdenum	12	0.039	0.50		µg/L	1	5/8/2017 10:42 PM
Selenium	1.8	0.028	0.50		µg/L	1	5/8/2017 10:42 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-901-Q217
Lab Order:	N024064	**Collection Date:**	5/1/2017 4:02:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024064-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62121**				PrepDate	**5/3/2017**	Analyst: **CEI**
Arsenic	0.74	0.025	0.10		µg/L	1	5/8/2017 10:48 PM
Manganese	ND	0.056	0.50		µg/L	1	5/8/2017 10:48 PM
Molybdenum	12	0.039	0.50		µg/L	1	5/8/2017 10:48 PM
Selenium	2.0	0.028	0.50		µg/L	1	5/10/2017 02:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024064
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024064-012

Client Sample ID: MW-57-70-Q217
Collection Date: 5/1/2017 11:58:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170508B**	QC Batch: **62121**			PrepDate	**5/3/2017**	Analyst: **CEI**	
Arsenic	1.2	0.025	0.10		µg/L	1	5/8/2017 10:54 PM
Manganese	2.0	0.056	0.50		µg/L	1	5/8/2017 10:54 PM
Molybdenum	6.1	0.039	0.50		µg/L	1	5/8/2017 10:54 PM
Selenium	3.1	0.028	0.50		µg/L	1	5/8/2017 10:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024064
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024064-013

Client Sample ID: MW-57-185-Q217
Collection Date: 5/1/2017 2:06:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510C**	QC Batch: **62121**			PrepDate	**5/3/2017**	Analyst: **CEI**	
Arsenic	12	0.12	0.50		µg/L	5	5/10/2017 02:20 PM
Manganese	260	0.28	2.5		µg/L	5	5/10/2017 02:20 PM
Molybdenum	80	0.19	2.5		µg/L	5	5/10/2017 02:20 PM
Selenium	ND	0.14	2.5		µg/L	5	5/10/2017 02:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024064
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024064-014

Client Sample ID: MW-12-Q217
Collection Date: 5/1/2017 3:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510C**	QC Batch: **62121**			PrepDate	**5/3/2017**	Analyst: **CEI**	
Molybdenum	7.5	0.19	2.5		µg/L	5	5/10/2017 02:26 PM
Selenium	22	0.14	2.5		µg/L	5	5/10/2017 02:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62121**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/3/2017**	RunNo: **115142**
Client ID: **PBW**	Batch ID: **62121**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639454**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	0.085	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62121**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/3/2017**	RunNo: **115142**
Client ID: **LCSW**	Batch ID: **62121**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639455**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.707	0.10	10.00	0	97.1	85	115				
Manganese	96.249	0.50	100.0	0	96.2	85	115				
Molybdenum	10.127	0.50	10.00	0	101	85	115				
Selenium	9.681	0.50	10.00	0	96.8	85	115				

Sample ID **N024053-014B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/3/2017**	RunNo: **115142**
Client ID: **ZZZZZZ**	Batch ID: **62121**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639461**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.849	0.10	10.00	2.586	92.6	75	125				
Manganese	99.977	0.50	100.0	14.46	85.5	75	125				

Sample ID **N024053-014B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/3/2017**	RunNo: **115142**
Client ID: **ZZZZZZ**	Batch ID: **62121**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/8/2017**	SeqNo: **2639462**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.377	0.10	10.00	2.586	97.9	75	125	11.85	4.35	20	
Manganese	98.793	0.50	100.0	14.46	84.3	75	125	99.98	1.19	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024064
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024053-014B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115146
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639611

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	32.107	2.5	10.00	22.38	97.3	75	125				
Selenium	14.659	2.5	10.00	4.753	99.1	75	125				

Sample ID	N024053-014B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/3/2017	RunNo:	115146
Client ID:	ZZZZZZ	Batch ID:	62121	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/10/2017	SeqNo:	2639636

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.625	2.5	10.00	22.38	92.5	75	125	32.11	1.51	20	
Selenium	14.122	2.5	10.00	4.753	93.7	75	125	14.66	3.73	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CHAIN OF CUSTODY RECORD

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P. 702.307.2659 F. 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P. 562.219.7435 F. 562.219.7436
www.assetlaboratories.com

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email:	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@brwn.com P.O.#	Labspec	CalTrans	2. Headspace ✓
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200 Fax	Others ✓	LEVEL III	3. Container Intact ✓
Title: Geologist 1	Phone: 916-786-3302 Fax:		Specify: RWQCB	LEVEL IV	4. Seal Present ✓
Signature: Date:	Sampled By: Jaclyn Mahan		Global ID:	Regulatory	5. IR number 2
I hereby authorize ASSET Labs to perform the tests indicated below.	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*			Specify State: CA	6. Method of Cooling: ICE
Project Name: PG&E Topock - GMP	Signature: Date: 5/1/17				Sample Temp: 2 8 , 4.7°C
Project Number: RC000753.801B					Courier: LAB
					Tracking No:

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH 2 X 250 mL poly	Metals Dissolved (6020FF) As HNO3 500 mL poly	Metals Dissolved (6020FF) Mo HNO3 500 mL poly	Metals Dissolved (6020FF) Se HNO3 500 mL poly	Metals Dissolved (6020FF) Cr HNO3 500 mL poly	Metals Dissolved (6020FF) Mn HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4 125 mL poly	Calcium Dissolved (EPA 200.7) HNO3 500 mL poly	IRON, Dissolved (EPA 200.7) HNO3 500 mL poly	Sodium Dissolved (EPA 200.7) HNO3 500 mL poly	Manganese Chromium, Dissolved (EPA 200.8), HNO3 500 mL poly	Magnesium, Dissolved (EPA 200.7), HNO3 500 mL poly	Chloride, E300 1000 mL poly	Alkalinity, (SM2320B) Total as CaCO3 1000 mL poly	TDS, SM2540C 1000 mL poly	Bromide, E300 1000 mL poly	Sulfate, E300 1000 mL poly	Specific conductance E120.1 1000 mL poly	pH (SM4500-HB) 1000 mL poly	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N024064 - 01	MW-25-Q217	5/1/17	1224		X		X	X	X	X	X	X															E	3	P	BNS	
2	- 02	MW-21-EB-Q217	5/1/17	1220		X			X	X	X		X															E	3	P	BNS	
3	- 03	MW-35-135-Q217	5/1/17	1301		X		X	X	X	X	X	X															E	3	P	BNS	
4	- 04	MW-37D-Q217	5/1/17	1352		X			X	X	X		X															E	3	P	BNS	
5	- 05	MW-35-060-Q217	5/1/17	1347		X		X	X	X	X	X	X															E	3	P	BNS	
6	- 06	MW-41D-Q217	5/1/17	1454		X		X	X	X	X	X	X															E	3	P	BNS	
7	- 07	MW-59-100-Q217	5/1/17	1441		X		X	X	X	X	X	X															E	3	P	BNS	
8	- 08	MW-711-Q217	5/1/17	1530		X																						E	1	P	BNS	
9	- 09	MW-14-Q217	5/1/17	1552		X		X	X	X	X	X	X															E	3	P	BNS	
1	- 10	MW-901-Q217	5/1/17	1602		X		X	X	X	X	X	X															E	3	P	BNS	
10	- 11	MW-713-Q217	5/1/17	1610		X																						E	1	P	BNS	
11	- 12	MW-57-70-Q217	5/1/17	1158		X		X	X	X	X	X	X															E	3	P	BNS	
12	- 13	MW-57-185-Q217	5/1/17	1406		X		X	X	X	X	X	X															E	3	P	BNS	
13	- 14	MW-12-Q217	5/1/17	1518		X			X	X	X		X															E	3	P	BNS	
14	- 15	MW-712-Q217	5/1/17	1420		X																						E	1	P	BNS	

Relinquished by (Signature and Printed Name): Date/Time: 5/1/17 1651

Relinquished by (Signature and Printed Name): Date/Time: 5/1/17 @ 1651

Relinquished by (Signature and Printed Name): Date/Time: 5/1/17 @ 1651

Relinquished by (Signature and Printed Name): Date/Time: 5/1/17 @ 2147

Relinquished by (Signature and Printed Name): Date/Time:

Relinquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:

Run analysis for*** Title 22 metals,Al, Sb, As, Ba,Be, B, Ca Cd, Co, Cr, Cu, Fe, Pb Mg, Mn Hg Mo Ni, Se Ag, Ti, V, Zn K, Na.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis:
   Less than 24 Hrs =200% Next Days 100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays= 20%
3. Custom EDD formats will be an additional 5% of the total project price.
4. Add 10% surcharge for Level II Data Packages 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable samples.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/1/2017	Workorder:	N024064
Rep sample Temp (Deg C):	2.8/4.7	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

For:

Checklist Completed By: MBC 5/4/2017

Reviewed By: MBC 5/5/2017

ASSET Laboratories

WORK ORDER Summary

01-May-17

WorkOrder: N024064

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/1/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024064-001A	MW-25-Q217	5/1/2017 12:24:00 PM	5/15/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-001B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-001C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-002A	MW-21-EB-Q217	5/1/2017 12:20:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-002B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-002C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-003A	MW-35-135-Q217	5/1/2017 1:01:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-003B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-003C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-004A	MW-37D-Q217	5/1/2017 1:52:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-004B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-004C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-005A	MW-35-060-Q217	5/1/2017 1:47:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-May-17

WorkOrder: N024064

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/1/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024064-005B	MW-35-060-Q217	5/1/2017 1:47:00 PM	5/15/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-005C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-006A	MW-41D-Q217	5/1/2017 2:54:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-006B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-006C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-007A	MW-59-100-Q217	5/1/2017 2:41:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-007B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-007C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-008A	MW-711-Q217	5/1/2017 3:30:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-009A	MW-14-Q217	5/1/2017 3:52:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-009B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-009C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-010A	MW-901-Q217	5/1/2017 4:02:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-May-17

WorkOrder: N024064

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/1/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024064-010B	MW-901-Q217	5/1/2017 4:02:00 PM	5/15/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-010C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-011A	MW-713-Q217	5/1/2017 4:10:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-012A	MW-57-70-Q217	5/1/2017 11:58:00 AM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-012B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-012C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-013A	MW-57-185-Q217	5/1/2017 2:06:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-013B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-013C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-014A	MW-12-Q217	5/1/2017 3:18:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024064-014B			5/15/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/15/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024064-014C			5/15/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024064-015A	MW-712-Q217	5/1/2017 2:20:00 PM	5/15/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

01-May-17

WorkOrder: N024064

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/1/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024064-016A	FOLDER	5/15/2017	5/15/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/15/2017		Folder	Folder	☐	☐	☐	LAB

May 16, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024074

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 02, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N024074-006 and N024074-011 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024074-002, N024074-004, N024074-005, N024074-006, N024074-008 and N024074-011 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

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ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *16-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024074
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024074-001A	MW-63-065-Q217	Groundwater	5/2/2017 9:21:00 AM	5/2/2017	5/16/2017
N024074-001B	MW-63-065-Q217	Groundwater	5/2/2017 9:21:00 AM	5/2/2017	5/16/2017
N024074-001C	MW-63-065-Q217	Groundwater	5/2/2017 9:21:00 AM	5/2/2017	5/16/2017
N024074-002A	MW-72-080-Q217	Groundwater	5/2/2017 10:25:00 AM	5/2/2017	5/16/2017
N024074-002B	MW-72-080-Q217	Groundwater	5/2/2017 10:25:00 AM	5/2/2017	5/16/2017
N024074-002C	MW-72-080-Q217	Groundwater	5/2/2017 10:25:00 AM	5/2/2017	5/16/2017
N024074-003A	MW-62-065-2Q17	Groundwater	5/2/2017 9:24:00 AM	5/2/2017	5/16/2017
N024074-003B	MW-62-065-2Q17	Groundwater	5/2/2017 9:24:00 AM	5/2/2017	5/16/2017
N024074-003C	MW-62-065-2Q17	Groundwater	5/2/2017 9:24:00 AM	5/2/2017	5/16/2017
N024074-004A	MW-61-110-Q217	Groundwater	5/2/2017 10:14:00 AM	5/2/2017	5/16/2017
N024074-004B	MW-61-110-Q217	Groundwater	5/2/2017 10:14:00 AM	5/2/2017	5/16/2017
N024074-004C	MW-61-110-Q217	Groundwater	5/2/2017 10:14:00 AM	5/2/2017	5/16/2017
N024074-005A	MW-60-125-Q217	Groundwater	5/2/2017 12:54:00 PM	5/2/2017	5/16/2017
N024074-005B	MW-60-125-Q217	Groundwater	5/2/2017 12:54:00 PM	5/2/2017	5/16/2017
N024074-005C	MW-60-125-Q217	Groundwater	5/2/2017 12:54:00 PM	5/2/2017	5/16/2017
N024074-006A	MW-72BR-200-Q217	Groundwater	5/2/2017 2:40:00 PM	5/2/2017	5/16/2017
N024074-006B	MW-72BR-200-Q217	Groundwater	5/2/2017 2:40:00 PM	5/2/2017	5/16/2017
N024074-006C	MW-72BR-200-Q217	Groundwater	5/2/2017 2:40:00 PM	5/2/2017	5/16/2017
N024074-007A	MW-714-Q217	Groundwater	5/2/2017 3:20:00 PM	5/2/2017	5/16/2017
N024074-008A	MW-70BR-225-Q217	Groundwater	5/2/2017 11:16:00 AM	5/2/2017	5/16/2017
N024074-008B	MW-70BR-225-Q217	Groundwater	5/2/2017 11:16:00 AM	5/2/2017	5/16/2017
N024074-008C	MW-70BR-225-Q217	Groundwater	5/2/2017 11:16:00 AM	5/2/2017	5/16/2017
N024074-009A	MW-70-105-Q217	Groundwater	5/2/2017 12:18:00 PM	5/2/2017	5/16/2017
N024074-009B	MW-70-105-Q217	Groundwater	5/2/2017 12:18:00 PM	5/2/2017	5/16/2017
N024074-009C	MW-70-105-Q217	Groundwater	5/2/2017 12:18:00 PM	5/2/2017	5/16/2017
N024074-010A	MW-58BR-Q217	Groundwater	5/2/2017 1:40:00 PM	5/2/2017	5/16/2017
N024074-010B	MW-58BR-Q217	Groundwater	5/2/2017 1:40:00 PM	5/2/2017	5/16/2017
N024074-010C	MW-58BR-Q217	Groundwater	5/2/2017 1:40:00 PM	5/2/2017	5/16/2017
N024074-011A	MW-64BR-Q217	Groundwater	5/2/2017 3:18:00 PM	5/2/2017	5/16/2017

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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024074
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024074-011B	MW-64BR-Q217	Groundwater	5/2/2017 3:18:00 PM	5/2/2017	5/16/2017
N024074-011C	MW-64BR-Q217	Groundwater	5/2/2017 3:18:00 PM	5/2/2017	5/16/2017
N024074-012A	MW-715-Q217	Groundwater	5/2/2017 3:52:00 PM	5/2/2017	5/16/2017
N024074-013A	MW-716-Q217	Groundwater	5/2/2017 4:46:00 PM	5/2/2017	5/16/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 9:21:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.1	0.066	0.20		µg/L	1	5/5/2017 10:05 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510D**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	1.5	0.019	1.0		µg/L	1	5/11/2017 10:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 10:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A** QC Batch: **R115084**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	71	1.3	4.0		µg/L	20	5/5/2017 01:52 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	61	0.019	1.0		µg/L	1	5/11/2017 04:59 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-2Q17
Lab Order:	N024074	**Collection Date:**	5/2/2017 9:24:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	580	6.6	20		µg/L	100	5/5/2017 11:02 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	590	0.096	5.0		µg/L	5	5/11/2017 05:19 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 10:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	370	6.6	20		µg/L	100	5/5/2017 11:21 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	340	0.096	5.0		µg/L	5	5/11/2017 05:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	830	6.6	20		µg/L	100	5/5/2017 11:40 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	830	0.096	5.0		µg/L	5	5/11/2017 05:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024074
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024074-006

Client Sample ID: MW-72BR-200-Q217
Collection Date: 5/2/2017 2:40:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A** QC Batch: **R115084**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.9	0.33	1.0		µg/L	5	5/5/2017 01:33 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	2.6	0.019	1.0		µg/L	1	5/11/2017 05:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-714-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 3:20:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2017 01:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 11:16:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1800	13	40		µg/L	200	5/5/2017 11:59 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	1800	0.48	25		µg/L	25	5/11/2017 05:47 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024074
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024074-009

Client Sample ID: MW-70-105-Q217
Collection Date: 5/2/2017 12:18:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	130	1.3	4.0		µg/L	20	5/5/2017 12:17 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510D**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	120	0.019	1.0		µg/L	1	5/11/2017 05:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A** QC Batch: **R115084**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	5.4	0.066	0.20		µg/L	1	5/5/2017 02:42 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	5.2	0.019	1.0		µg/L	1	5/11/2017 05:49 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A** QC Batch: **R115084**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/5/2017 03:22 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2017 05:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-715-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 3:52:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2017 06:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-716-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 4:46:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A**	QC Batch: **R115084**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2017 04:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115084	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	PBW	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637214

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R115084	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	LCSW	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637215

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.011	0.20	5.000	0	100	90	110				

Sample ID	N024064-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.864	1.0	5.000	5.861	100	90	110				

Sample ID	N024064-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Sample ID	N024074-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.130	0.20	1.000	1.109	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024074-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637222**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	171.480	4.0	100.0	70.94	101	90	110				

Sample ID **N024074-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1078.390	20	500.0	581.6	99.4	90	110				

Sample ID **N024074-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	878.150	20	500.0	367.6	102	90	110				

Sample ID **N024074-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1332.790	20	500.0	829.4	101	90	110				

Sample ID **N024074-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2832.260	40	1000	1813	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024074-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	234.004	4.0	100.0	133.1	101	90	110				

Sample ID **N024074-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110				

Sample ID **N024074-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.925	1.0	5.000	2.946	99.6	90	110				

Sample ID **N024074-003ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	576.350	20						581.6	0.905	20	

Sample ID **N024074-008AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2847.440	40	1000	1813	103	90	110	2832	0.535	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.074	1.0	5.000	0	101	90	110				

Sample ID	N024074-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID	N024074-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637252

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID	N024074-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.588	0.20	5.000	5.442	103	90	110				

Sample ID	N024107-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024107-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1046.900	20	500.0	546.3	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62157	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	PBW	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62157	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	LCSW	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.466	1.0	10.00	0	94.7	85	115				

Sample ID	N024074-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.799	1.0	10.00	1.529	82.7	75	125				

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.779	1.0	10.00	1.529	82.5	75	125	9.799	0.203	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 9:21:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.75	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 10:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.52	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-2Q17
Lab Order:	N024074	**Collection Date:**	5/2/2017 9:24:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	4.8	0.11	0.25		mg/L	5	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 10:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.68	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	4.2	0.11	0.25		mg/L	5	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170510J**	QC Batch: **R115162**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.12	0.022	0.050		mg/L	1	5/10/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 11:16:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	4.1	0.11	0.25		mg/L	5	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 12:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	4.4	0.22	0.50		mg/L	10	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.40	0.022	0.050		mg/L	1	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115162	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	PBW	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115162	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	LCSW	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640331

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0	101	85	115				

Sample ID	N024053-006CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640333

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050						0.02380	0	20	

Sample ID	N024053-006CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640334

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.506	0.050	0.5000	0.02380	96.4	75	125				

Sample ID	N024053-006CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115162
Client ID:	ZZZZZZ	Batch ID:	R115162	TestNo:	SM4500-NO3			Analysis Date:	5/10/2017	SeqNo:	2640335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.523	0.050	0.5000	0.02380	99.8	75	125	0.5056	3.36	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115239	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	PBW	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645347

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115239	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	LCSW	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645348

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.514	0.050	0.5000	0	103	85	115				

Sample ID	N024154-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	ZZZZZZ	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645350

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.186	0.050						0.1915	2.97	20	

Sample ID	N024154-001DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	ZZZZZZ	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645351

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.642	0.050	0.5000	0.1915	90.2	75	125				

Sample ID	N024154-001DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	ZZZZZZ	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645352

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.654	0.050	0.5000	0.1915	92.5	75	125	0.6424	1.82	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-63-065-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 9:21:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	1.5	0.025	0.10		µg/L	1	5/11/2017 10:24 AM
Manganese	9.8	0.056	0.50		µg/L	1	5/11/2017 10:24 AM
Molybdenum	19	0.039	0.50		µg/L	1	5/11/2017 05:01 PM
Selenium	0.66	0.028	0.50		µg/L	1	5/11/2017 10:24 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72-080-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 10:25:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	9.0	0.025	0.10		µg/L	1	5/11/2017 04:59 AM
Manganese	90	0.056	0.50		µg/L	1	5/11/2017 04:59 AM
Molybdenum	83	0.19	2.5		µg/L	5	5/11/2017 05:13 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 05:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-065-2Q17
Lab Order:	N024074	**Collection Date:**	5/2/2017 9:24:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	1.3	0.025	0.10		µg/L	1	5/11/2017 05:05 AM
Manganese	ND	0.056	0.50		µg/L	1	5/11/2017 05:05 AM
Molybdenum	13	0.039	0.50		µg/L	1	5/11/2017 05:05 AM
Selenium	3.7	0.028	0.50		µg/L	1	5/11/2017 05:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-61-110-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 10:14:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	3.1	0.025	0.10		µg/L	1	5/11/2017 05:10 AM
Manganese	140	0.056	0.50		µg/L	1	5/11/2017 05:10 AM
Molybdenum	22	0.19	2.5		µg/L	5	5/11/2017 05:24 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 05:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60-125-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 12:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	1.5	0.025	0.10		µg/L	1	5/11/2017 05:27 AM
Manganese	4.1	0.056	0.50		µg/L	1	5/11/2017 05:27 AM
Molybdenum	17	0.19	2.5		µg/L	5	5/11/2017 05:30 PM
Selenium	5.2	0.028	0.50		µg/L	1	5/11/2017 05:27 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-72BR-200-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 2:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	13	0.025	0.10		µg/L	1	5/11/2017 05:33 AM
Manganese	38	0.056	0.50		µg/L	1	5/11/2017 05:33 AM
Molybdenum	79	0.19	2.5		µg/L	5	5/11/2017 05:36 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 05:36 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70BR-225-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 11:16:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	1.8	0.025	0.10		µg/L	1	5/11/2017 05:38 AM
Manganese	1.6	0.056	0.50		µg/L	1	5/11/2017 05:38 AM
Molybdenum	17	0.19	2.5		µg/L	5	5/11/2017 05:41 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 05:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-70-105-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 12:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	3.7	0.025	0.10		µg/L	1	5/11/2017 05:44 AM
Manganese	7.9	0.056	0.50		µg/L	1	5/11/2017 05:44 AM
Molybdenum	69	0.039	0.50		µg/L	1	5/11/2017 05:44 AM
Selenium	3.9	0.028	0.50		µg/L	1	5/11/2017 05:44 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-58BR-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 1:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	1.5	0.025	0.10		µg/L	1	5/11/2017 05:49 AM
Manganese	350	0.28	2.5		µg/L	5	5/11/2017 05:58 PM
Molybdenum	25	0.039	0.50		µg/L	1	5/11/2017 05:49 AM
Selenium	1.3	0.028	0.50		µg/L	1	5/11/2017 05:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-64BR-Q217
Lab Order:	N024074	**Collection Date:**	5/2/2017 3:18:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024074-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	3.8	0.025	0.10		µg/L	1	5/11/2017 05:55 AM
Manganese	1000	0.56	5.0		µg/L	10	5/11/2017 06:21 PM
Molybdenum	65	0.19	2.5		µg/L	5	5/11/2017 06:15 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 06:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62157**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **PBW**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62157**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **LCSW**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.594	0.10	10.00	0	95.9	85	115				
Manganese	95.344	0.50	100.0	0	95.3	85	115				
Molybdenum	9.743	0.50	10.00	0	97.4	85	115				
Selenium	9.256	0.50	10.00	0	92.6	85	115				

Sample ID **N024074-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **ZZZZZZ**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.320	0.10	10.00	1.483	98.4	75	125				
Manganese	97.361	0.50	100.0	9.787	87.6	75	125				
Selenium	9.322	0.50	10.00	0.6561	86.7	75	125				

Sample ID **N024074-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **ZZZZZZ**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.232	0.10	10.00	1.483	97.5	75	125	11.32	0.778	20	
Manganese	97.041	0.50	100.0	9.787	87.3	75	125	97.36	0.329	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024074
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.097	0.50	10.00	0.6561	94.4	75	125	9.322	7.99	20	

Sample ID	N024074-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2645168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.125	0.50	10.00	19.35	118	75	125				

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2645169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.288	0.50	10.00	19.35	119	75	125	31.13	0.523	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition	Y N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	1. Chilled	
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address:	Geotracker	RWQCB ✓	2. Headspace	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	Labspec	CalTrans	3. Container Intact	
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	4. Seal Present	
Title: Geologist 1	Phone: 916-786-3302 Fax:	P O #	Specify: RWQCB	LEVEL IV	5. IR number: 2	
Signature: Date:	Sampled By: [signature]	Global ID		Regulatory	6. Method of Cooling: ICE	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			Specify State: CA	Sample Temp: 3.6 C / 37.4 F	
Project Name: PG&E Topock - GMP	Signature: [signature] Date: 5/2/17				Courier: LAB	
Project Number: RC000753.8018					Tracking No:	

Matrix: Ground (x) | Potable | NPDES | Surface | Sediment | Soil | Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH 2 X 250 mL poly	Metals Dissolved (6020FF) As; HNO3 500 mL poly	Metals Dissolved (6020FF) Mo; HNO3 500 mL poly	Metals Dissolved (6020FF) Se; HNO3 500 mL poly	Metals Dissolved (6020FF) Cr, HNO3 500 mL poly	Metals Dissolved (6020FF) Mn, HNO3 500 mL poly	Nitrate/Nitrite (SM4500NO3) Nitrate; H2SO4 125 mL poly	Calcium, Dissolved (EPA 200.7); HNO3 500 mL poly	IRON, Dissolved (EPA 200.7); HNO3 500 mL poly	Sodium, Dissolved (EPA 200.7) HNO3 500 mL poly	Manganese, Chromium, Dissolved (EPA 200.8); HNO3 500 mL poly	Magnesium, Dissolved (EPA 200.7); HNO3 500 mL poly	Chloride, E300 1000 mL poly	Alkalinity, (SM2320B), Total as CaCO3 1000 mL poly	TDS, SM2540C 1000 mL poly	Bromide, E300 1000 mL poly	Sulfate, E300 1000 mL poly	Specific conductance 120.1 1000 mL poly	pH (SM4500-H6) 1000 mL poly	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N024074 - 01	MW-63-065-Q217	5/2/17	0921		X		X	X	X	X	X	X															E	3	P	BNS	
2	- 02	MW-72-080-Q217	5/2/17	1025		X		X	X	X	X	X	X															E	3	P	BNS	
3	- 03	MW-62-065-2Q17	5/2/17	0924		X		X	X	X	X	X	X															E	3	P	BNS	
4	- 04	MW-61-110-Q217	5/2/17	1014		X		X	X	X	X	X	X															E	3	P	BNS	
5	- 05	MW-60-125-Q217	5/2/17	1254		X		X	X	X	X	X	X															E	3	P	BNS	
6	- 06	MW-72BR-200-Q217	5/2/17	1440		X		X	X	X	X	X	X															E	3	P	BNS	
7	- 07	MW-714-Q217	5/2/17	1520		X																						E	1	P	BNS	
8	- 08	MW-70BR-225-Q217	5/2/17	1116		X		X	X	X	X	X	X															E	3	P	BNS	
9	- 09	MW-70-105-Q217	5/2/17	1218		X		X	X	X	X	X	X															E	3	P	BNS	
1	- 10	MW-58BR-Q217	5/2/17	1340		X		X	X	X	X	X	X															E	3	P	BNS	
10	- 11	MW-64BR-Q217	5/2/17	1518		X		X	X	X	X	X	X															E	3	P	BNS	
11	- 12	MW-715-Q217	5/2/17	1552		X																						E	1	P	BNS	
12	- 13	MW-716-Q217	5/2/17	1646		X																						E	1	P	BNS	
13																																
14																																

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[signature]	5/2/17	[signature]	5/2/17 1657
[signature]	5/2/17 1657	[signature]	5/2/17 1657
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for***: Title 22 metals Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analysis, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/2/2017	Workorder:	N024074
Rep sample Temp (Deg C):	2.6/3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 5/4/2017

Reviewed By: MBC 5/8/2017

ASSET Laboratories

WORK ORDER Summary

02-May-17

WorkOrder: N024074

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/2/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024074-001A	MW-63-065-Q217	5/2/2017 9:21:00 AM	5/16/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-001B			5/16/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-001C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-002A	MW-72-080-Q217	5/2/2017 10:25:00 AM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-002B			5/16/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-002C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-003A	MW-62-065-2Q17	5/2/2017 9:24:00 AM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-003B			5/16/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-003C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-004A	MW-61-110-Q217	5/2/2017 10:14:00 AM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-004B			5/16/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-004C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-005A	MW-60-125-Q217	5/2/2017 12:54:00 PM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-17

WorkOrder: N024074

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/2/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024074-005B	MW-60-125-Q217	5/2/2017 12:54:00 PM	5/16/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-005C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-006A	MW-72BR-200-Q217	5/2/2017 2:40:00 PM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-006B			5/16/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-006C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-007A	MW-714-Q217	5/2/2017 3:20:00 PM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-008A	MW-70BR-225-Q217	5/2/2017 11:16:00 AM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-008B			5/16/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-008C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-009A	MW-70-105-Q217	5/2/2017 12:18:00 PM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-009B			5/16/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-009C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-010A	MW-58BR-Q217	5/2/2017 1:40:00 PM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

02-May-17

WorkOrder: N024074

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/2/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024074-010B	MW-58BR-Q217	5/2/2017 1:40:00 PM	5/16/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-010C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-011A	MW-64BR-Q217	5/2/2017 3:18:00 PM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-011B			5/16/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/16/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024074-011C			5/16/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024074-012A	MW-715-Q217	5/2/2017 3:52:00 PM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-013A	MW-716-Q217	5/2/2017 4:46:00 PM	5/16/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024074-014A	FOLDER	5/16/2017	5/16/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/16/2017		Folder	Folder	☐	☐	☐	LAB

May 19, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024089

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 03, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucan for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024089

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N024089-001 and N024089-015 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N024089-015 (MW-62-110-Q217) are discrepant, sample re-analysis and Matrix Spike protocol were performed and result confirmed initial analysis.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024089-001, N024089-002, N024089-003, N024089-005, N024089-006, N024089-007, N024089-008, N024089-010, N024089-012 and N024089-015 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike Duplicate (MSD) is outside recovery criteria for Manganese on QC sample N024089-001B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Because the results for total dissolved chromium (1.7 ug/L) and hexavalent chromium (0 ug/L) for sample N024089-015 (MW-62-110-Q217) are discrepant, sample from both the total dissolved chromium and hexavalent chromium containers were redigested and analyzed for total dissolved

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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

chromium. The results from the redigested samples were 1.1 and 0 ug/L, respectively. Since these data confirmed the original result for total dissolved chromium, the original result is reported.

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *17-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024089
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024089-001A	MW-71-035-Q217	Groundwater	5/3/2017 8:15:00 AM	5/3/2017	5/17/2017
N024089-001B	MW-71-035-Q217	Groundwater	5/3/2017 8:15:00 AM	5/3/2017	5/17/2017
N024089-001C	MW-71-035-Q217	Groundwater	5/3/2017 8:15:00 AM	5/3/2017	5/17/2017
N024089-002A	MW-73-080-Q217	Groundwater	5/3/2017 8:55:00 AM	5/3/2017	5/17/2017
N024089-002B	MW-73-080-Q217	Groundwater	5/3/2017 8:55:00 AM	5/3/2017	5/17/2017
N024089-002C	MW-73-080-Q217	Groundwater	5/3/2017 8:55:00 AM	5/3/2017	5/17/2017
N024089-003A	MW-60BR-245-Q217	Groundwater	5/3/2017 9:00:00 AM	5/3/2017	5/17/2017
N024089-003B	MW-60BR-245-Q217	Groundwater	5/3/2017 9:00:00 AM	5/3/2017	5/17/2017
N024089-003C	MW-60BR-245-Q217	Groundwater	5/3/2017 9:00:00 AM	5/3/2017	5/17/2017
N024089-004A	MW-11-Q217	Groundwater	5/3/2017 10:04:00 AM	5/3/2017	5/17/2017
N024089-004B	MW-11-Q217	Groundwater	5/3/2017 10:04:00 AM	5/3/2017	5/17/2017
N024089-004C	MW-11-Q217	Groundwater	5/3/2017 10:04:00 AM	5/3/2017	5/17/2017
N024089-005A	MW-21-Q217	Groundwater	5/3/2017 9:30:00 AM	5/3/2017	5/17/2017
N024089-005B	MW-21-Q217	Groundwater	5/3/2017 9:30:00 AM	5/3/2017	5/17/2017
N024089-005C	MW-21-Q217	Groundwater	5/3/2017 9:30:00 AM	5/3/2017	5/17/2017
N024089-006A	TW-01-Q217	Groundwater	5/3/2017 11:16:00 AM	5/3/2017	5/17/2017
N024089-006B	TW-01-Q217	Groundwater	5/3/2017 11:16:00 AM	5/3/2017	5/17/2017
N024089-006C	TW-01-Q217	Groundwater	5/3/2017 11:16:00 AM	5/3/2017	5/17/2017
N024089-007A	MW-24B-Q217	Groundwater	5/3/2017 11:08:00 AM	5/3/2017	5/17/2017
N024089-007B	MW-24B-Q217	Groundwater	5/3/2017 11:08:00 AM	5/3/2017	5/17/2017
N024089-007C	MW-24B-Q217	Groundwater	5/3/2017 11:08:00 AM	5/3/2017	5/17/2017
N024089-008A	MW-903-Q217	Groundwater	5/3/2017 11:18:00 AM	5/3/2017	5/17/2017
N024089-008B	MW-903-Q217	Groundwater	5/3/2017 11:18:00 AM	5/3/2017	5/17/2017
N024089-008C	MW-903-Q217	Groundwater	5/3/2017 11:18:00 AM	5/3/2017	5/17/2017
N024089-009A	MW-24A-Q217	Groundwater	5/3/2017 12:13:00 PM	5/3/2017	5/17/2017
N024089-009B	MW-24A-Q217	Groundwater	5/3/2017 12:13:00 PM	5/3/2017	5/17/2017
N024089-009C	MW-24A-Q217	Groundwater	5/3/2017 12:13:00 PM	5/3/2017	5/17/2017
N024089-010A	MW-67-260-Q217	Groundwater	5/3/2017 1:26:00 PM	5/3/2017	5/17/2017
N024089-010B	MW-67-260-Q217	Groundwater	5/3/2017 1:26:00 PM	5/3/2017	5/17/2017

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024089
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024089-010C	MW-67-260-Q217	Groundwater	5/3/2017 1:26:00 PM	5/3/2017	5/17/2017
N024089-011A	MW-69-195-Q217	Groundwater	5/3/2017 12:35:00 PM	5/3/2017	5/17/2017
N024089-011B	MW-69-195-Q217	Groundwater	5/3/2017 12:35:00 PM	5/3/2017	5/17/2017
N024089-011C	MW-69-195-Q217	Groundwater	5/3/2017 12:35:00 PM	5/3/2017	5/17/2017
N024089-012A	MW-68-240-Q217	Groundwater	5/3/2017 1:54:00 PM	5/3/2017	5/17/2017
N024089-012B	MW-68-240-Q217	Groundwater	5/3/2017 1:54:00 PM	5/3/2017	5/17/2017
N024089-012C	MW-68-240-Q217	Groundwater	5/3/2017 1:54:00 PM	5/3/2017	5/17/2017
N024089-013A	MW-68-180-Q217	Groundwater	5/3/2017 3:10:00 PM	5/3/2017	5/17/2017
N024089-013B	MW-68-180-Q217	Groundwater	5/3/2017 3:10:00 PM	5/3/2017	5/17/2017
N024089-013C	MW-68-180-Q217	Groundwater	5/3/2017 3:10:00 PM	5/3/2017	5/17/2017
N024089-014A	MW-719-Q217	Groundwater	5/3/2017 3:30:00 PM	5/3/2017	5/17/2017
N024089-015A	MW-62-110-Q217	Groundwater	5/3/2017 3:25:00 PM	5/3/2017	5/17/2017
N024089-015B	MW-62-110-Q217	Groundwater	5/3/2017 3:25:00 PM	5/3/2017	5/17/2017
N024089-015C	MW-62-110-Q217	Groundwater	5/3/2017 3:25:00 PM	5/3/2017	5/17/2017

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-001

Client Sample ID: MW-71-035-Q217
Collection Date: 5/3/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/8/2017 11:10 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510D**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2017 07:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-002

Client Sample ID: MW-73-080-Q217
Collection Date: 5/3/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A** QC Batch: **R115109**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	30	0.33	1.0		µg/L	5	5/8/2017 10:32 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62158**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	27	0.019	1.0		µg/L	1	5/11/2017 07:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A** QC Batch: **R115109**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	39	0.33	1.0		µg/L	5	5/8/2017 11:47 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62158**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	36	0.019	1.0		µg/L	1	5/11/2017 08:04 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-004

Client Sample ID: MW-11-Q217
Collection Date: 5/3/2017 10:04:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A** QC Batch: **R115109**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	67	0.66	2.0		µg/L	10	5/8/2017 12:06 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62158**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	61	0.019	1.0		µg/L	1	5/11/2017 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 9:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2.1	0.066	0.20		µg/L	1	5/8/2017 12:25 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510D**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	2.7	0.019	1.0		µg/L	1	5/11/2017 08:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-01-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 11:16:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2200	13	40		µg/L	200	5/8/2017 12:44 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	2400	0.48	25		µg/L	25	5/11/2017 08:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	230	3.3	10		µg/L	50	5/8/2017 06:18 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	220	0.096	5.0		µg/L	5	5/11/2017 09:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 11:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	230	3.3	10		µg/L	50	5/8/2017 06:37 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	210	0.096	5.0		µg/L	5	5/11/2017 09:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 12:13:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/8/2017 02:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510D**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2017 09:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 1:26:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	440	6.6	20		µg/L	100	5/8/2017 04:04 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	400	0.096	5.0		µg/L	5	5/11/2017 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-011

Client Sample ID: MW-69-195-Q217
Collection Date: 5/3/2017 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	270	3.3	10		µg/L	50	5/8/2017 04:24 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	270	0.096	5.0		µg/L	5	5/11/2017 09:20 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	2100	13	40		µg/L	200	5/8/2017 04:43 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	2200	0.48	25		µg/L	25	5/11/2017 09:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-013

Client Sample ID: MW-68-180-Q217
Collection Date: 5/3/2017 3:10:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	12000	330	1000		µg/L	5000	5/8/2017 05:02 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	12000	1.9	100		µg/L	100	5/11/2017 10:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-719-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 3:30:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/8/2017 05:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170512A** QC Batch: **R115201**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/12/2017 12:53 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510D** QC Batch: **62158**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	1.7	0.019	1.0		µg/L	1	5/11/2017 09:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115109**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **PBW**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115109**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **LCSW**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.928	0.20	5.000	0	98.6	90	110				

Sample ID **N024089-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.812	1.0	25.00	30.33	102	90	110				

Sample ID **N024089-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.878	1.0	5.000	0	97.6	90	110				

Sample ID **N024089-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	117.495	2.0	50.00	67.48	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024089-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3.081	0.20	1.000	2.051	103	90	110				

Sample ID **N024089-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3241.140	40	1000	2214	103	90	110				

Sample ID **N024089-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.1349	101	90	110				

Sample ID **N024089-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.014	1.0	25.00	30.33	103	90	110	55.81	0.362	20	

Sample ID **N024089-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.054	2.0						67.48	2.31	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024089-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.210	1.0	25.00	38.66	102	90	110				

Sample ID	N024089-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638308

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	933.520	20	500.0	441.9	98.3	90	110				

Sample ID	N024089-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	518.205	10	250.0	270.7	99.0	90	110				

Sample ID	N024089-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638312

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3038.500	40	1000	2069	97.0	90	110				

Sample ID	N024089-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638314

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36433.000	1000	25000	11860	98.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024089-014AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.042	0.20	1.000	0	104	90	110				

Sample ID **N024089-007AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	478.465	10	250.0	228.1	100	90	110				

Sample ID **N024089-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	473.760	10	250.0	226.2	99.0	90	110				

Sample ID **N024090-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.022	0.20	1.000	0	102	90	110				

Sample ID **N024090-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2620.180	40	1000	1636	98.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024090-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.340	0.20	1.000	0.3391	100	90	110				

Sample ID	N024090-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638332

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.036	0.20	5.000	1.155	97.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115201	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	PBW	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R115201	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	LCSW	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642576

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.935	0.20	5.000	0	98.7	90	110				

Sample ID	N024189-010ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.278	0.20						2.284	0.294	20	

Sample ID	N024089-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642590

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.260	1.0	5.000	0	105	90	110				

Sample ID	N024090-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.001	1.0	5.000	0	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024090-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642596

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.844	1.0	5.000	0	96.9	90	110	5.000	3.18	20	

Sample ID	N024090-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.771	1.0	5.000	0.7040	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62158	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	PBW	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62158	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	LCSW	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.172	1.0	10.00	0	91.7	85	115				

Sample ID	N024089-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.117	1.0	10.00	0	81.2	75	125				

Sample ID	N024089-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641258

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7.991	1.0	10.00	0	79.9	75	125	8.117	1.56	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-71-035-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 8:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-73-080-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 8:55:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.8	0.11	0.25		mg/L	5	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-60BR-245-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.24	0.022	0.050		mg/L	1	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-11-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 10:04:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	5.8	0.22	0.50		mg/L	10	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 9:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.4	0.022	0.050		mg/L	1	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-006

Client Sample ID: TW-01-Q217
Collection Date: 5/3/2017 11:16:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	19	0.44	1.0		mg/L	20	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.9	0.044	0.10		mg/L	2	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-903-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 11:18:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	1.7	0.11	0.25		mg/L	5	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24A-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 12:13:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.060	0.022	0.050		mg/L	1	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 1:26:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.61	0.022	0.050		mg/L	1	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-69-195-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 12:35:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	20	0.44	1.0		mg/L	20	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	4.5	0.11	0.25		mg/L	5	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	13	1.1	2.5		mg/L	50	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170514A**	QC Batch: **R115239**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/14/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115239	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	PBW	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645347

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115239	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	LCSW	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645348

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.514	0.050	0.5000	0	103	85	115				

Sample ID	N024154-001DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	ZZZZZZ	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645350

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.186	0.050						0.1915	2.97	20	

Sample ID	N024154-001DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	ZZZZZZ	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645351

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.642	0.050	0.5000	0.1915	90.2	75	125				

Sample ID	N024154-001DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115239
Client ID:	ZZZZZZ	Batch ID:	R115239	TestNo:	SM4500-NO3			Analysis Date:	5/14/2017	SeqNo:	2645352

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.654	0.050	0.5000	0.1915	92.5	75	125	0.6424	1.82	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115298	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	PBW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115298	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	LCSW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	85	115				

Sample ID	N024090-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.059	0.050						0.06780	13.9	20	

Sample ID	N024090-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.543	0.050	0.5000	0.06780	95.1	75	125				

Sample ID	N024090-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.547	0.050	0.5000	0.06780	95.9	75	125	0.5433	0.697	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-001

Client Sample ID: MW-71-035-Q217
Collection Date: 5/3/2017 8:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	ND	0.62	2.5		µg/L	25	5/11/2017 07:40 PM
Manganese	1600	1.4	12		µg/L	25	5/11/2017 07:40 PM
Molybdenum	25	0.97	12		µg/L	25	5/11/2017 07:40 PM
Selenium	ND	0.69	12		µg/L	25	5/11/2017 07:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-002

Client Sample ID: MW-73-080-Q217
Collection Date: 5/3/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	1.5	0.025	0.10		µg/L	1	5/11/2017 07:58 AM
Manganese	12	0.056	0.50		µg/L	1	5/11/2017 07:58 AM
Molybdenum	26	0.19	2.5		µg/L	5	5/11/2017 08:35 PM
Selenium	4.1	0.14	2.5		µg/L	5	5/11/2017 08:35 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-003

Client Sample ID: MW-60BR-245-Q217
Collection Date: 5/3/2017 9:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	6.9	0.12	0.50		µg/L	5	5/11/2017 08:41 PM
Manganese	14	0.056	0.50		µg/L	1	5/11/2017 08:04 AM
Molybdenum	56	0.19	2.5		µg/L	5	5/11/2017 08:41 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 08:41 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-004

Client Sample ID: MW-11-Q217
Collection Date: 5/3/2017 10:04:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	1.3	0.025	0.10		µg/L	1	5/11/2017 08:09 AM
Manganese	1.9	0.056	0.50		µg/L	1	5/11/2017 08:09 AM
Molybdenum	6.2	0.039	0.50		µg/L	1	5/11/2017 08:09 AM
Selenium	4.1	0.028	0.50		µg/L	1	5/11/2017 08:09 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-21-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 9:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170511B** QC Batch: **62158**				PrepDate	**5/8/2017**	Analyst: **CEI**	
Molybdenum	62	0.19	2.5		µg/L	5	5/11/2017 08:46 PM
Selenium	29	0.14	2.5		µg/L	5	5/11/2017 08:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-006

Client Sample ID: TW-01-Q217
Collection Date: 5/3/2017 11:16:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Molybdenum	16	0.19	2.5		µg/L	5	5/11/2017 08:52 PM
Selenium	14	0.028	0.50		µg/L	1	5/11/2017 08:21 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-24B-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 11:08:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	2.6	0.12	0.50		µg/L	5	5/11/2017 09:03 PM
Manganese	120	0.28	2.5		µg/L	5	5/11/2017 09:03 PM
Molybdenum	61	0.19	2.5		µg/L	5	5/11/2017 09:03 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 09:03 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-008

Client Sample ID: MW-903-Q217
Collection Date: 5/3/2017 11:18:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	2.8	0.12	0.50		µg/L	5	5/11/2017 09:09 PM
Manganese	110	0.28	2.5		µg/L	5	5/11/2017 09:09 PM
Molybdenum	57	0.19	2.5		µg/L	5	5/11/2017 09:09 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 09:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-009

Client Sample ID: MW-24A-Q217
Collection Date: 5/3/2017 12:13:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	ND	0.025	0.10		µg/L	1	5/11/2017 09:06 AM
Manganese	26	0.056	0.50		µg/L	1	5/11/2017 09:06 AM
Molybdenum	150	0.039	0.50		µg/L	1	5/11/2017 09:06 AM
Selenium	ND	0.028	0.50		µg/L	1	5/11/2017 09:06 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-260-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 1:26:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	6.3	0.12	0.50		µg/L	5	5/11/2017 09:14 PM
Manganese	22	0.28	2.5		µg/L	5	5/11/2017 09:14 PM
Molybdenum	85	0.19	2.5		µg/L	5	5/11/2017 09:14 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 09:14 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024089
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024089-011

Client Sample ID: MW-69-195-Q217
Collection Date: 5/3/2017 12:35:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/11/2017 09:17 AM
Manganese	9.5	0.056	0.50		µg/L	1	5/11/2017 09:17 AM
Molybdenum	66	0.039	0.50		µg/L	1	5/11/2017 09:17 AM
Selenium	14	0.028	0.50		µg/L	1	5/11/2017 09:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-240-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 1:54:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	2.0	0.12	0.50		µg/L	5	5/11/2017 09:52 PM
Manganese	33	0.28	2.5		µg/L	5	5/11/2017 09:52 PM
Molybdenum	24	0.97	12		µg/L	25	5/11/2017 09:59 PM
Selenium	ND	0.69	12		µg/L	25	5/11/2017 09:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68-180-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	2.9	0.025	0.10		µg/L	1	5/11/2017 09:28 AM
Manganese	ND	0.056	0.50		µg/L	1	5/11/2017 09:28 AM
Molybdenum	40	0.039	0.50		µg/L	1	5/11/2017 09:28 AM
Selenium	11	0.028	0.50		µg/L	1	5/11/2017 09:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-110-Q217
Lab Order:	N024089	**Collection Date:**	5/3/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024089-015		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	12	0.12	0.50		µg/L	5	5/11/2017 10:10 PM
Manganese	120	0.056	0.50		µg/L	1	5/11/2017 09:34 AM
Molybdenum	56	0.19	2.5		µg/L	5	5/11/2017 10:10 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 10:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62158**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **PBW**	Batch ID: **62158**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.069	0.50									
Molybdenum	0.064	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62158**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **LCSW**	Batch ID: **62158**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.502	0.10	10.00	0	95.0	85	115				
Manganese	94.675	0.50	100.0	0	94.7	85	115				
Molybdenum	9.794	0.50	10.00	0	97.9	85	115				
Selenium	9.195	0.50	10.00	0	92.0	85	115				

Sample ID **N024089-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115185**
Client ID: **ZZZZZZ**	Batch ID: **62158**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2643938**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.292	2.5	10.00	1.513	108	75	125				
Manganese	1647.484	12	100.0	1557	90.0	75	125				
Molybdenum	36.378	12	10.00	24.88	115	75	125				
Selenium	11.136	12	10.00	0	111	75	125				

Sample ID **N024089-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115185**
Client ID: **ZZZZZZ**	Batch ID: **62158**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2643941**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.933	2.5	10.00	1.513	104	75	125	12.29	2.96	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024089
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024089-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115185
Client ID:	ZZZZZZ	Batch ID:	62158	TestNo:	EPA 6020		EPA 3010A	Analysis Date:	5/11/2017	SeqNo:	2643941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	1632.230	12	100.0	1557	74.8	75	125	1647	0.930	20	S
Molybdenum	36.371	12	10.00	24.88	115	75	125	36.38	0.0195	20	
Selenium	11.969	12	10.00	0	120	75	125	11.14	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bibes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID:
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State: CA
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address:	Sample Receipt Condition (Y/N): 1 Chilled; 2 Headspace; 3 Container Intact; 4 Seal Present; 5 IR number 2; 6 Method of Cooling: ICE
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbibes@pivox.com P.O #	Sample Temp: 3.2°C/2°C
Submitted By: Alexis McIntyre	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:	
Title: Geologist 1			
Signature: I hereby authorize ASSET Labs to perform the tests indicated below. Date:	Sampled By: Jason Mahn. I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling this sample location, date or time of collection is considered fraud and may be grounds for	Matrix: Ground x Sediment; Potable Soil; NPDES Other Solid; Surface	Courier: LAB; Tracking No:
Project Name: PG&E Topock - GMP	Signature: Date: 5/3/17		
Project Number: RC000753.801B			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6); (NH4)2 SO4, NH4 OH	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH	Metals Dissolved (6020FF) As; HNO3	Metals Dissolved (6020FF) Mo; HNO3	Metals Dissolved (6020FF) Se; HNO3	Metals Dissolved (6020FF) Cr; HNO3	Metals Dissolved (6020FF) Mn; HNO3	Nitrate/Nitrite (SM4500NO3) Nitrate; H2SO4	Calcium, Dissolved (EPA 200.7); HNO3	tPCN, Dissolved (EPA 200.7); HNO3	Sodium, Dissolved (EPA 200.7) HNO3	Manganese, Chromium, Dissolved (EPA 200.8); HNO3	Magnesium, Dissolved (EPA 200.7); HNO3	Chloride, E300	Alkalinity, (SM2320B); Total as CaCO3	TDS, SM2540C	Bromide, E300	Sulfate, E300	Specific conductance 120.1	pH (SM4500-HB)	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						250 mL poly	2 X 250 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	125 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly							
1	N024089 - 01	MW-71-035-Q217	5/3/17	0815		X		X	X	X	X	X	X														E	3	P	BNS	
2	- 02	MW-73-080-Q217	5/3/17	0855		X		X	X	X	X	X	X														E	3	P	BNS	
3	- 03	MW-60BR-245-Q217	5/3/17	0900		X		X	X	X	X	X	X														E	3	P	BNS	
4	- 04	MW-11-Q217	5/3/17	1004		X		X	X	X	X	X	X														E	3	P	BNS	
5	- 05	MW-21-Q217	5/3/17	0930			X		X	X	X		X														E	4	P	BNS	
6	- 06	TW-01-Q217	5/3/17	1116		X			X	X	X		X														E	3	P	BNS	
7	- 07	MW-24B-Q217	5/3/17	1108		X		X	X	X	X	X	X														E	3	P	BNS	
8	- 08	MW-903-Q217	5/3/17	1118		X		X	X	X	X	X	X														E	3	P	BNS	
9	- 09	MW-24A-Q217	5/3/17	1213		X		X	X	X	X	X	X														E	3	P	BNS	
1	- 10	MW-67-260-Q217	5/3/17	1326		X		X	X	X	X	X	X														E	3	P	BNS	
10	- 11	MW-69-195-Q217	5/3/17	1235		X		X	X	X	X	X	X														E	3	P	BNS	
11	- 12	MW-68-240-Q217	5/3/17	1354		X		X	X	X	X	X	X														E	3	P	BNS	
12	- 13	MW-68-180-Q217	5/3/17	1510		X		X	X	X	X	X	X														E	3	P	BNS	
13	- 14	MW-719-Q217	5/3/17	1530		X																					E	1	P	BNS	
14	- 15	MW-62-110-Q217	5/1/17	1525		X		X	X	X	X	X	X														E	3	P	BNS	

Relinquished by (Signature and Printed Name): Date/Time: 5/3/17
Relinquished by (Signature and Printed Name): Date/Time: 5/3/17 1627
Relinquished by (Signature and Printed Name): Date/Time: 5/3/17 1125
Relinquished by (Signature and Printed Name): Date/Time: 5/3/17 1625
Relinquished by (Signature and Printed Name): Date/Time:
Relinquished by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- A = < 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- X E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for***: Title 22 metals.Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na.

Terms
1. All samples will be disposed of 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 Business days, surcharges will apply for rush analysis.
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35% 4 Workdays=20%
3. Custom EDD formats will be an additional 5% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project cost.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		
Others/Specify:	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/3/2017	Workorder:	N024089
Rep sample Temp (Deg C):	3.2/2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☐	No ☑	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Correspondence sent by the client.

Checklist Completed By: YR 5/5/2017

Reviewed By: MBC 5/8/2017

ASSET Laboratories

WORK ORDER Summary

05-May-17

WorkOrder: N024089

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/3/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024089-001A	MW-71-035-Q217	5/3/2017 8:15:00 AM	5/17/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-001B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-001C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-002A	MW-73-080-Q217	5/3/2017 8:55:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-002B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-002C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-003A	MW-60BR-245-Q217	5/3/2017 9:00:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-003B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-003C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-004A	MW-11-Q217	5/3/2017 10:04:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-004B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-004C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-005A	MW-21-Q217	5/3/2017 9:30:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-May-17

WorkOrder: N024089

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/3/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024089-005B	MW-21-Q217	5/3/2017 9:30:00 AM	5/17/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-005C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-006A	TW-01-Q217	5/3/2017 11:16:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-006B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-006C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-007A	MW-24B-Q217	5/3/2017 11:08:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-007B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-007C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-008A	MW-903-Q217	5/3/2017 11:18:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-008B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-008C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-009A	MW-24A-Q217	5/3/2017 12:13:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-009B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-May-17

WorkOrder: N024089

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/3/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024089-009B	MW-24A-Q217	5/3/2017 12:13:00 PM	5/17/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-009C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-010A	MW-67-260-Q217	5/3/2017 1:26:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-010B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-010C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-011A	MW-69-195-Q217	5/3/2017 12:35:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-011B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-011C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-012A	MW-68-240-Q217	5/3/2017 1:54:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-012B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-012C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-013A	MW-68-180-Q217	5/3/2017 3:10:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-013B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

05-May-17

WorkOrder: N024089

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/3/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024089-013B	MW-68-180-Q217	5/3/2017 3:10:00 PM	5/17/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-013C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-014A	MW-719-Q217	5/3/2017 3:30:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-015A	MW-62-110-Q217	5/3/2017 3:25:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024089-015B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024089-015C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024089-016A	FOLDER	5/17/2017	5/4/2017		Folder	Folder	☐	☐	☐	LAB
			5/17/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/17/2017		Folder	Folder	☐	☐	☐	LAB

Yoandra Rodriguez

From: Marlon B. Cartin [marlon@assetlaboratories.com]
Sent: Friday, May 05, 2017 9:05 AM
To: samplecontrol.lv@assetlaboratories.com; 'Yoandra Rodriguez'
Subject: FW: SDG N024068 corrections

Please process.

Thanks,

Marlon B. Cartin
Project Manager
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 Ext. 410 **I** **F:** 702.307.2691 **I** **M:** 702.439.0421

From: Madsen, Laura [mailto:Laura.Madsen@arcadis.com]
Sent: Thursday, May 04, 2017 2:14 PM
To: Marlon B. Cartin; nancy@assetlaboratories.com
Subject: SDG N024068 corrections

Hi Marlon,

Can you make the following change?

MW-62-110-Q217 was sampled on 5/3/17, not 5/1/17.

Thanks!
Laura

Laura Madsen PG | Project Geologist
laura.madsen@arcadis.com
Arcadis | Arcadis U.S., Inc.
630 Plaza Drive Highlands Ranch CO | 80129 | USA
T. +1 720 344 3771 | M. +1 303 653 5749

Professional Geologist / PG-TN, 5574

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ARCADIS Design & Consultancy for natural and built assets

Be green, leave it on the screen.

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May 17, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024090

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 03, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucan for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024090

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N024090-001 and N024090-004 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024090-001, N024090-007 and N024090-011 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

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NEVADA | P:702.307.2659 F:702.307.2691
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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *17-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024090
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024090-001A	MW-62-190-Q217	Groundwater	5/3/2017 3:10:00 PM	5/3/2017	5/17/2017
N024090-001B	MW-62-190-Q217	Groundwater	5/3/2017 3:10:00 PM	5/3/2017	5/17/2017
N024090-001C	MW-62-190-Q217	Groundwater	5/3/2017 3:10:00 PM	5/3/2017	5/17/2017
N024090-002A	MW-717-Q217	Groundwater	5/3/2017 3:40:00 PM	5/3/2017	5/17/2017
N024090-003A	MW-67-185-Q217	Groundwater	5/3/2017 2:32:00 PM	5/3/2017	5/17/2017
N024090-003B	MW-67-185-Q217	Groundwater	5/3/2017 2:32:00 PM	5/3/2017	5/17/2017
N024090-003C	MW-67-185-Q217	Groundwater	5/3/2017 2:32:00 PM	5/3/2017	5/17/2017
N024090-004A	MW-48-Q217	Groundwater	5/3/2017 3:35:00 PM	5/3/2017	5/17/2017
N024090-004B	MW-48-Q217	Groundwater	5/3/2017 3:35:00 PM	5/3/2017	5/17/2017
N024090-005A	MW-38S-SMT-Q217	Groundwater	5/3/2017 9:36:00 AM	5/3/2017	5/17/2017
N024090-005B	MW-38S-SMT-Q217	Groundwater	5/3/2017 9:36:00 AM	5/3/2017	5/17/2017
N024090-005C	MW-38S-SMT-Q217	Groundwater	5/3/2017 9:36:00 AM	5/3/2017	5/17/2017
N024090-006A	MW-38S-Q217	Groundwater	5/3/2017 10:10:00 AM	5/3/2017	5/17/2017
N024090-006B	MW-38S-Q217	Groundwater	5/3/2017 10:10:00 AM	5/3/2017	5/17/2017
N024090-006C	MW-38S-Q217	Groundwater	5/3/2017 10:10:00 AM	5/3/2017	5/17/2017
N024090-007A	MW-38D-SMT-Q217	Groundwater	5/3/2017 11:22:00 AM	5/3/2017	5/17/2017
N024090-007B	MW-38D-SMT-Q217	Groundwater	5/3/2017 11:22:00 AM	5/3/2017	5/17/2017
N024090-007C	MW-38D-SMT-Q217	Groundwater	5/3/2017 11:22:00 AM	5/3/2017	5/17/2017
N024090-008A	MW-09-Q217	Groundwater	5/3/2017 1:23:00 PM	5/3/2017	5/17/2017
N024090-008B	MW-09-Q217	Groundwater	5/3/2017 1:23:00 PM	5/3/2017	5/17/2017
N024090-008C	MW-09-Q217	Groundwater	5/3/2017 1:23:00 PM	5/3/2017	5/17/2017
N024090-009A	MW-10-Q217	Groundwater	5/3/2017 2:57:00 PM	5/3/2017	5/17/2017
N024090-009B	MW-10-Q217	Groundwater	5/3/2017 2:57:00 PM	5/3/2017	5/17/2017
N024090-009C	MW-10-Q217	Groundwater	5/3/2017 2:57:00 PM	5/3/2017	5/17/2017
N024090-010A	MW-718-Q217	Groundwater	5/3/2017 3:10:00 PM	5/3/2017	5/17/2017
N024090-011A	MW-38D-Q217	Groundwater	5/3/2017 12:07:00 PM	5/3/2017	5/17/2017
N024090-011B	MW-38D-Q217	Groundwater	5/3/2017 12:07:00 PM	5/3/2017	5/17/2017
N024090-011C	MW-38D-Q217	Groundwater	5/3/2017 12:07:00 PM	5/3/2017	5/17/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170512A** QC Batch: **R115201**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/12/2017 01:12 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510D** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2017 06:01 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-717-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/8/2017 07:52 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 2:32:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1600	13	40		µg/L	200	5/8/2017 08:11 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	1700	0.19	10		µg/L	10	5/11/2017 06:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-48-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 3:35:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512A** QC Batch: **R115201**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/12/2017 01:31 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2017 06:12 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 9:36:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	0.34	0.066	0.20		µg/L	1	5/8/2017 08:30 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510D**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2017 06:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170508A**	QC Batch: **R115109**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	1.2	0.066	0.20		µg/L	1	5/8/2017 08:49 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510D**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	1.2	0.019	1.0		µg/L	1	5/11/2017 06:34 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 11:22:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A** QC Batch: **R115105**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	16	0.33	1.0		µg/L	5	5/9/2017 10:19 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	14	0.019	1.0		µg/L	1	5/11/2017 06:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024090
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024090-008

Client Sample ID: MW-09-Q217
Collection Date: 5/3/2017 1:23:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A**	QC Batch: **R115105**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	160	1.3	4.0		µg/L	20	5/9/2017 11:54 AM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510D**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	140	0.019	1.0		µg/L	1	5/11/2017 06:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024090
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024090-009

Client Sample ID: MW-10-Q217
Collection Date: 5/3/2017 2:57:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A** QC Batch: **R115105**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	190	1.3	4.0		µg/L	20	5/9/2017 12:13 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170511A** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	200	0.096	5.0		µg/L	5	5/11/2017 07:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-718-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A**	QC Batch: **R115105**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/9/2017 12:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 12:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A** QC Batch: **R115105**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	17	0.33	1.0		µg/L	5	5/9/2017 12:50 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62157**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	15	0.019	1.0		µg/L	1	5/11/2017 06:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115105	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	PBW	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638203		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R115105	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	LCSW	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638204		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.907	0.20	5.000	0	98.1	90	110						

Sample ID	N024090-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638207		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	41.702	1.0	25.00	15.81	104	90	110						

Sample ID	N024090-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638208		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	41.087	1.0	25.00	15.81	101	90	110	41.70	1.49	20			

Sample ID	N024135-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638209		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.773	0.20						1.758	0.844	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024090-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638680

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	263.036	4.0	100.0	159.0	104	90	110				

Sample ID	N024090-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638682

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	290.694	4.0	100.0	191.3	99.4	90	110				

Sample ID	N024090-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638684

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.017	0.20	1.000	0	102	90	110				

Sample ID	N024090-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638686

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.816	1.0	25.00	17.36	102	90	110				

Sample ID	N024106-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638690

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	201.316	4.0	100.0	98.56	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024106-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1037.060	20	500.0	532.2	101	90	110				

Sample ID	N024106-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638694

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1041.280	20	500.0	520.5	104	90	110				

Sample ID	N024106-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638698

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.588	1.0	5.000	0	91.8	90	110				

Sample ID	N024106-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638700

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.587	1.0	5.000	0	91.7	90	110				

Sample ID	N024106-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638702

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5288.600	100	2500	2690	104	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024106-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638704

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID	N024106-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638706

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115109**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **PBW**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115109**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **LCSW**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.928	0.20	5.000	0	98.6	90	110				

Sample ID **N024089-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	55.812	1.0	25.00	30.33	102	90	110				

Sample ID **N024089-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.878	1.0	5.000	0	97.6	90	110				

Sample ID **N024089-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115109**
Client ID: **ZZZZZZ**	Batch ID: **R115109**	TestNo: **EPA 218.6**		Analysis Date: **5/8/2017**	SeqNo: **2638293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	117.495	2.0	50.00	67.48	100	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024089-005AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3.081	0.20	1.000	2.051	103	90	110				

Sample ID **N024089-006AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3241.140	40	1000	2214	103	90	110				

Sample ID **N024089-009AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.142	0.20	1.000	0.1349	101	90	110				

Sample ID **N024089-002AMSD** SampType: **MSD** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	56.014	1.0	25.00	30.33	103	90	110	55.81	0.362	20	

Sample ID **N024089-004ADUP** SampType: **DUP** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	69.054	2.0						67.48	2.31	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024089-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	64.210	1.0	25.00	38.66	102	90	110				

Sample ID **N024089-010AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	933.520	20	500.0	441.9	98.3	90	110				

Sample ID **N024089-011AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	518.205	10	250.0	270.7	99.0	90	110				

Sample ID **N024089-012AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	3038.500	40	1000	2069	97.0	90	110				

Sample ID **N024089-013AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638314**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	36433.000	1000	25000	11860	98.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024089-014AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638318**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.042	0.20	1.000	0	104	90	110				

Sample ID **N024089-007AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	478.465	10	250.0	228.1	100	90	110				

Sample ID **N024089-008AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	473.760	10	250.0	226.2	99.0	90	110				

Sample ID **N024090-002AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.022	0.20	1.000	0	102	90	110				

Sample ID **N024090-003AMS** SampType: **MS** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115109**
Client ID: **ZZZZZZ** Batch ID: **R115109** TestNo: **EPA 218.6** Analysis Date: **5/8/2017** SeqNo: **2638328**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2620.180	40	1000	1636	98.4	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024090-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.340	0.20	1.000	0.3391	100	90	110				

Sample ID	N024090-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115109
Client ID:	ZZZZZZ	Batch ID:	R115109	TestNo:	EPA 218.6			Analysis Date:	5/8/2017	SeqNo:	2638332

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	6.036	0.20	5.000	1.155	97.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115201	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	PBW	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R115201	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	LCSW	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642576

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.935	0.20	5.000	0	98.7	90	110				

Sample ID	N024189-010ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642588

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.278	0.20						2.284	0.294	20	

Sample ID	N024089-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642590

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.260	1.0	5.000	0	105	90	110				

Sample ID	N024090-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642592

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.001	1.0	5.000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024090-001AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642596

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.844	1.0	5.000	0	96.9	90	110	5.000	3.18	20	

Sample ID	N024090-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115201
Client ID:	ZZZZZZ	Batch ID:	R115201	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.771	1.0	5.000	0.7040	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62157	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	PBW	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62157	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	LCSW	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.466	1.0	10.00	0	94.7	85	115				

Sample ID	N024074-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.799	1.0	10.00	1.529	82.7	75	125				

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.779	1.0	10.00	1.529	82.5	75	125	9.799	0.203	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.068	0.022	0.050		mg/L	1	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 2:32:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	75	2.2	5.0		mg/L	100	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 9:36:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.7	0.044	0.10		mg/L	2	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 10:10:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.5	0.044	0.10		mg/L	2	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-SMT-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 11:22:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.050	0.022	0.050		mg/L	1	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-09-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 1:23:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C** QC Batch: **R115298**			PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C** QC Batch: **R115298**			PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	12	0.22	0.50		mg/L	10	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38D-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 12:07:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.069	0.022	0.050		mg/L	1	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115298	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	PBW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115298	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	LCSW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	85	115				

Sample ID	N024090-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.059	0.050						0.06780	13.9	20	

Sample ID	N024090-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.543	0.050	0.5000	0.06780	95.1	75	125				

Sample ID	N024090-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.547	0.050	0.5000	0.06780	95.9	75	125	0.5433	0.697	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-62-190-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 3:10:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170511B**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	3.2	0.12	0.50		µg/L	5	5/11/2017 06:26 PM
Manganese	930	0.56	5.0		µg/L	10	5/11/2017 06:32 PM
Molybdenum	50	0.19	2.5		µg/L	5	5/11/2017 06:26 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 06:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-185-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 2:32:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	0.92	0.025	0.10		µg/L	1	5/11/2017 06:06 AM
Manganese	ND	0.056	0.50		µg/L	1	5/11/2017 06:06 AM
Molybdenum	9.3	0.039	0.50		µg/L	1	5/11/2017 06:06 AM
Selenium	330	0.14	2.5		µg/L	5	5/11/2017 06:37 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-38S-SMT-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 9:36:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**			PrepDate		**5/8/2017**	Analyst: **CEI**
Arsenic	7.7	0.025	0.10		µg/L	1	5/11/2017 06:17 AM
Manganese	110	0.056	0.50		µg/L	1	5/11/2017 06:17 AM
Molybdenum	35	0.039	0.50		µg/L	1	5/11/2017 06:17 AM
Selenium	1.8	0.028	0.50		µg/L	1	5/11/2017 06:17 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024090
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024090-006

Client Sample ID: MW-38S-Q217
Collection Date: 5/3/2017 10:10:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	7.9	0.025	0.10		µg/L	1	5/11/2017 06:34 AM
Manganese	110	0.056	0.50		µg/L	1	5/11/2017 06:34 AM
Molybdenum	37	0.039	0.50		µg/L	1	5/11/2017 06:34 AM
Selenium	1.3	0.028	0.50		µg/L	1	5/11/2017 06:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024090
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024090-007

Client Sample ID: MW-38D-SMT-Q217
Collection Date: 5/3/2017 11:22:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170511B**	QC Batch: **62157**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	7.6	0.12	0.50		µg/L	5	5/11/2017 07:01 PM
Manganese	53	0.056	0.50		µg/L	1	5/11/2017 06:40 AM
Molybdenum	92	0.19	2.5		µg/L	5	5/11/2017 07:01 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 07:01 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024090
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024090-008

Client Sample ID: MW-09-Q217
Collection Date: 5/3/2017 1:23:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	1.7	0.025	0.10		µg/L	1	5/11/2017 06:46 AM
Manganese	ND	0.056	0.50		µg/L	1	5/11/2017 06:46 AM
Molybdenum	4.2	0.039	0.50		µg/L	1	5/11/2017 06:46 AM
Selenium	5.0	0.028	0.50		µg/L	1	5/11/2017 06:46 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-10-Q217
Lab Order:	N024090	**Collection Date:**	5/3/2017 2:57:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024090-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Molybdenum	24	0.039	0.50		µg/L	1	5/11/2017 06:51 AM
Selenium	5.6	0.028	0.50		µg/L	1	5/11/2017 06:51 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024090
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024090-011

Client Sample ID: MW-38D-Q217
Collection Date: 5/3/2017 12:07:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170511B**	QC Batch: **62157**			PrepDate		**5/8/2017**	Analyst: **CEI**
Arsenic	6.7	0.12	0.50		µg/L	5	5/11/2017 07:23 PM
Manganese	44	0.056	0.50		µg/L	1	5/11/2017 06:57 AM
Molybdenum	83	0.19	2.5		µg/L	5	5/11/2017 07:23 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 07:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62157**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **PBW**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62157**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **LCSW**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.594	0.10	10.00	0	95.9	85	115				
Manganese	95.344	0.50	100.0	0	95.3	85	115				
Molybdenum	9.743	0.50	10.00	0	97.4	85	115				
Selenium	9.256	0.50	10.00	0	92.6	85	115				

Sample ID **N024074-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **ZZZZZZ**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.320	0.10	10.00	1.483	98.4	75	125				
Manganese	97.361	0.50	100.0	9.787	87.6	75	125				
Selenium	9.322	0.50	10.00	0.6561	86.7	75	125				

Sample ID **N024074-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **ZZZZZZ**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.232	0.10	10.00	1.483	97.5	75	125	11.32	0.778	20	
Manganese	97.041	0.50	100.0	9.787	87.3	75	125	97.36	0.329	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024090
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.097	0.50	10.00	0.6561	94.4	75	125	9.322	7.99	20	

Sample ID	N024074-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2645168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.125	0.50	10.00	19.35	118	75	125				

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2645169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.288	0.50	10.00	19.35	119	75	125	31.13	0.523	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
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P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client	Arcadis	Report to	Dan Bush	Bill to	Marty Bloes
Address	1410 Rocky Ridge Dr # 330	Company	Arcadis	Address	
Address	Roseville, CA 95661	Email	dan.bush@arcadis.com; daniel.mosher@arcadis.com	Address	
Phone	916-786-3302	Fax		Email to	mbloes@pivox.com
Submitted By	Alexis McIntyre	Address	1410 Rocky Ridge Dr # 330 Roseville, CA 95661	P O #	
Title	Geologist 1	Phone	916-786-3302	Phone	949-727-1400, ext 200
Signature	Date	Sampled By	Jason Mohr	Fax	
I hereby authorize ASSET Labs to perform the tests indicated below		I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for			
Project Name	PG&E Topock - GMP	Signature		Date	5/3/17
Project Number	RC000753 801B				

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	✓	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact		
Others	✓	LEVEL III		4. Seal Present		
Specify	RWQCB	LEVEL IV		5. IR number		
Global ID		Regulatory		6. Method of Cooling	ICE	
		Specify State	CA	Sample Temp	3.1/ 2-0C	

Matrix: Ground | Potable | NPDES | Surface | x Sediment | Soil | Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH 250 mL poly	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH 2 X 250 mL poly	Metals Dissolved (6020FF) As; HNO3 500 mL poly	Metals Dissolved (6020FF) Mo; HNO3 500 mL poly	Metals Dissolved (6020FF) Se; HNO3 500 mL poly	Metals Dissolved (6020FF) Cr; HNO3 500 mL poly	Metals Dissolved (6020FF) Mn, HNO3 500 mL poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Calcium, Dissolved (EPA 200.7); HNO3 500 mL poly	IRON, Dissolved (EPA 200.7); HNO3 500 mL poly	Sodium, Dissolved (EPA 200.7) HNO3 500 mL poly	Manganese, Chromium, Dissolved (EPA 200.8), HNO3 500 mL poly	Magnesium, Dissolved (EPA 200.7), HNO3 500 mL poly	Chloride, E300 1000 mL poly	Alkalinity, (SM2320B), Total as CaCO3 1000 mL poly	TDS, SM2540C 1000 mL poly	Bromide, E300 1000 mL poly	Sulfate, E300 1000 mL poly	Specific conductance 120.1 1000 mL poly	pH (SM4500-HB) 1000 mL poly	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N024090 - 01	MW-62-190-Q217	5/3/17	1510		X		X	X	X	X	X	X																E	3	P	BNS	
2	- 02	MW-717-Q217	5/3/17	1540		X																							E	1	P	BNS	
3	- 03	MW-67-185-Q217	5/3/17	1432		X		X	X	X	X	X	X																E	3	P	BNS	
4	- 04	MW-48-Q217	5/3/17	1535		X					X																		E	2	P	BNS	
5	- 05	MW-38S-SMT-Q217	5/3/17	0936		X		X	X	X	X	X	X																E	3	P	BNS	
6	- 06	MW-38S-Q217	5/3/17	1010		X		X	X	X	X	X	X																E	3	P	BNS	
7	- 07	MW-38D-SMT-Q217	5/3/17	1122		X		X	X	X	X	X	X																E	3	P	BNS	
8	- 08	MW-09-Q217	5/3/17	1323		X		X	X	X	X	X	X																E	3	P	BNS	
9	- 09	MW-10-Q217	5/3/17	1457		X			X	X	X		X																E	3	P	BNS	
1	- 10	MW-718-Q217	5/3/17	1510		X																							E	1	P	BNS	
10	- 11	MW-38D-Q217	5/3/17	1207		X		X	X	X	X	X	X																E	3	P	BNS	
11																																	
12																																	
13																																	
14																																	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
	5/3/17		5/3/17 1627
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
	5/3/17 1825		5/3/17 1825
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

	A	= < 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Run analysis for*** Title 22 metals Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na

Courier: LAB
Tracking No:

Terms
1 All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2 Regular TAT is 5-7 business days, surcharges will apply for rush analyses
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3 Custom EDD formats will be an additional 3% of the total project price
4 Add 10% surcharge for Level III Data Packages 15% for Level IV Data Packages Surcharge applied on total project price
5 Trip Blanks and Equipment Blanks are billable sample
6 Asset Laboratories is not responsible for samples collected using incorrect methodology
7 Terms are net 30 days
8 All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9 For subcontract analysis TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/3/2017	Workorder:	N024090
Rep sample Temp (Deg C):	3.1/2.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 5/4/2017

Reviewed By: MBC 5/8/2017

ASSET Laboratories

WORK ORDER Summary

03-May-17

WorkOrder: N024090

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/3/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024090-001A	MW-62-190-Q217	5/3/2017 3:10:00 PM	5/17/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-001B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-001C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024090-002A	MW-717-Q217	5/3/2017 3:40:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-003A	MW-67-185-Q217	5/3/2017 2:32:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-003B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-003C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024090-004A	MW-48-Q217	5/3/2017 3:35:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-004B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-005A	MW-38S-SMT-Q217	5/3/2017 9:36:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-005B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-005C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024090-006A	MW-38S-Q217	5/3/2017 10:10:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-006B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-17

WorkOrder: N024090

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/3/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024090-006B	MW-38S-Q217	5/3/2017 10:10:00 AM	5/17/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-006C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024090-007A	MW-38D-SMT-Q217	5/3/2017 11:22:00 AM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-007B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-007C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024090-008A	MW-09-Q217	5/3/2017 1:23:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-008B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-008C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024090-009A	MW-10-Q217	5/3/2017 2:57:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-009B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-009C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024090-010A	MW-718-Q217	5/3/2017 3:10:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-011A	MW-38D-Q217	5/3/2017 12:07:00 PM	5/17/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024090-011B			5/17/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

03-May-17

WorkOrder: N024090

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/3/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024090-011B	MW-38D-Q217	5/3/2017 12:07:00 PM	5/17/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/17/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024090-011C			5/17/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024090-012A	FOLDER	5/17/2017	5/4/2017		Folder	Folder	☐	☐	☐	LAB
			5/17/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/17/2017		Folder	Folder	☐	☐	☐	LAB

May 18, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024106

RE: PG&E Topock - GMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 04, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time.

Analytical Comments for EPA 218.6:

Dilution was necessary for samples N024106-004 and N024106-005 due to matrix interference. Samples were analyzed at lower dilution however matrix spike recovery and retention time criteria were not met indicating possible matrix interference. Samples were reported at dilution that meet matrix spike recovery limit and the detected peak within retention time window.

Analytical Comments for EPA 6020_Dissolved:

Dilution was necessary on some analytes for samples N024106-002, N024106-003, N024106-004, N024106-005, N024106-006 and N024106-007 due to associated internal standard not meeting method criteria possibly due to matrix interference. Samples were analyzed with dilution and internal standard met method criteria. Affected analytes for this failed internal standard were reported at dilution that meet internal standard recovery limit.

Matrix Spike Duplicate (MSD) is outside recovery criteria for Manganese on QC sample N024089-001B-MSD possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *18-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - GMP, RC000753.801B
Lab Order: N024106
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024106-001A	MW-65-160-Q217	Groundwater	5/4/2017 8:43:00 AM	5/4/2017	5/18/2017
N024106-001B	MW-65-160-Q217	Groundwater	5/4/2017 8:43:00 AM	5/4/2017	5/18/2017
N024106-001C	MW-65-160-Q217	Groundwater	5/4/2017 8:43:00 AM	5/4/2017	5/18/2017
N024106-002A	MW-65-225-Q217	Groundwater	5/4/2017 10:30:00 AM	5/4/2017	5/18/2017
N024106-002B	MW-65-225-Q217	Groundwater	5/4/2017 10:30:00 AM	5/4/2017	5/18/2017
N024106-002C	MW-65-225-Q217	Groundwater	5/4/2017 10:30:00 AM	5/4/2017	5/18/2017
N024106-003A	MW-911-Q219	Groundwater	5/4/2017 10:40:00 AM	5/4/2017	5/18/2017
N024106-003B	MW-911-Q219	Groundwater	5/4/2017 10:40:00 AM	5/4/2017	5/18/2017
N024106-003C	MW-911-Q219	Groundwater	5/4/2017 10:40:00 AM	5/4/2017	5/18/2017
N024106-004A	MW-68BR-280-Q217	Groundwater	5/4/2017 1:12:00 PM	5/4/2017	5/18/2017
N024106-004B	MW-68BR-280-Q217	Groundwater	5/4/2017 1:12:00 PM	5/4/2017	5/18/2017
N024106-004C	MW-68BR-280-Q217	Groundwater	5/4/2017 1:12:00 PM	5/4/2017	5/18/2017
N024106-005A	MW-912-Q217	Groundwater	5/4/2017 1:22:00 PM	5/4/2017	5/18/2017
N024106-005B	MW-912-Q217	Groundwater	5/4/2017 1:22:00 PM	5/4/2017	5/18/2017
N024106-005C	MW-912-Q217	Groundwater	5/4/2017 1:22:00 PM	5/4/2017	5/18/2017
N024106-006A	MW-67-225-Q217	Groundwater	5/4/2017 3:25:00 PM	5/4/2017	5/18/2017
N024106-006B	MW-67-225-Q217	Groundwater	5/4/2017 3:25:00 PM	5/4/2017	5/18/2017
N024106-006C	MW-67-225-Q217	Groundwater	5/4/2017 3:25:00 PM	5/4/2017	5/18/2017
N024106-007A	MW-66BR-270-Q217	Groundwater	5/4/2017 11:15:00 AM	5/4/2017	5/18/2017
N024106-007B	MW-66BR-270-Q217	Groundwater	5/4/2017 11:15:00 AM	5/4/2017	5/18/2017
N024106-007C	MW-66BR-270-Q217	Groundwater	5/4/2017 11:15:00 AM	5/4/2017	5/18/2017
N024106-008A	MW-720-Q217	Groundwater	5/4/2017 3:40:00 PM	5/4/2017	5/18/2017
N024106-009A	MW-721-Q217	Groundwater	5/4/2017 7:45:00 AM	5/4/2017	5/18/2017
N024106-010A	MW-722-Q217	Groundwater	5/4/2017 9:00:00 AM	5/4/2017	5/18/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-160-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 8:43:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A** QC Batch: **R115105**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	99	1.3	4.0		µg/L	20	5/9/2017 01:28 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170510D** QC Batch: **62158**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	99	0.019	1.0		µg/L	1	5/11/2017 09:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A**	QC Batch: **R115105**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	530	6.6	20		µg/L	100	5/9/2017 01:47 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	540	0.096	5.0		µg/L	5	5/11/2017 10:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q219
Lab Order:	N024106	**Collection Date:**	5/4/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A**	QC Batch: **R115105**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	520	6.6	20		µg/L	100	5/9/2017 02:06 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	520	0.096	5.0		µg/L	5	5/11/2017 10:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 1:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A**	QC Batch: **R115105**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/9/2017 03:22 PM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/11/2017 10:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 1:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A**	QC Batch: **R115105**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.33	1.0		µg/L	5	5/9/2017 03:41 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170511A**	QC Batch: **62158**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.096	5.0		µg/L	5	5/11/2017 10:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024106
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024106-006

Client Sample ID: MW-67-225-Q217
Collection Date: 5/4/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A** QC Batch: **R115105**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	2700	33	100		µg/L	500	5/9/2017 04:00 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170511A** QC Batch: **62158**				PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	3000	0.48	25		µg/L	25	5/11/2017 11:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 11:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A**	QC Batch: **R115105**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/9/2017 04:19 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170510D**	QC Batch: **62157**			PrepDate	**5/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/11/2017 07:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-720-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 3:40:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170509A**	QC Batch: **R115105**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/9/2017 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-721-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 7:45:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170510A**	QC Batch: **R115166**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/10/2017 11:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-722-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 9:00:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170510A**	QC Batch: **R115166**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/10/2017 11:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115105	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	PBW	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638203		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	ND	0.20											

Sample ID	LCS-R115105	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	LCSW	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638204		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	4.907	0.20	5.000	0	98.1	90	110						

Sample ID	N024090-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638207		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	41.702	1.0	25.00	15.81	104	90	110						

Sample ID	N024090-007AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638208		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	41.087	1.0	25.00	15.81	101	90	110	41.70	1.49	20			

Sample ID	N024135-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105		
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638209		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.773	0.20						1.758	0.844	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024090-008AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115105**
Client ID: **ZZZZZZ**	Batch ID: **R115105**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2017**	SeqNo: **2638680**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	263.036	4.0	100.0	159.0	104	90	110				

Sample ID **N024090-009AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115105**
Client ID: **ZZZZZZ**	Batch ID: **R115105**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2017**	SeqNo: **2638682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	290.694	4.0	100.0	191.3	99.4	90	110				

Sample ID **N024090-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115105**
Client ID: **ZZZZZZ**	Batch ID: **R115105**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2017**	SeqNo: **2638684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.017	0.20	1.000	0	102	90	110				

Sample ID **N024090-011AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115105**
Client ID: **ZZZZZZ**	Batch ID: **R115105**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2017**	SeqNo: **2638686**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.816	1.0	25.00	17.36	102	90	110				

Sample ID **N024106-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115105**
Client ID: **ZZZZZZ**	Batch ID: **R115105**	TestNo: **EPA 218.6**		Analysis Date: **5/9/2017**	SeqNo: **2638690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	201.316	4.0	100.0	98.56	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024106-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1037.060	20	500.0	532.2	101	90	110				

Sample ID	N024106-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638694

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1041.280	20	500.0	520.5	104	90	110				

Sample ID	N024106-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638698

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.588	1.0	5.000	0	91.8	90	110				

Sample ID	N024106-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638700

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.587	1.0	5.000	0	91.7	90	110				

Sample ID	N024106-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638702

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5288.600	100	2500	2690	104	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024106-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638704

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.051	0.20	1.000	0	105	90	110				

Sample ID	N024106-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115105
Client ID:	ZZZZZZ	Batch ID:	R115105	TestNo:	EPA 218.6			Analysis Date:	5/9/2017	SeqNo:	2638706

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115166	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115166		
Client ID:	PBW	Batch ID:	R115166	TestNo:	EPA 218.6			Analysis Date:	5/10/2017	SeqNo:	2640506		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		ND	0.20										

Sample ID	LCS-R115166	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115166		
Client ID:	LCSW	Batch ID:	R115166	TestNo:	EPA 218.6			Analysis Date:	5/10/2017	SeqNo:	2640507		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		5.088	0.20	5.000	0	102	90	110					

Sample ID	N024106-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115166		
Client ID:	ZZZZZZ	Batch ID:	R115166	TestNo:	EPA 218.6			Analysis Date:	5/10/2017	SeqNo:	2640519		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.042	0.20	1.000	0	104	90	110					

Sample ID	N024106-009AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115166		
Client ID:	ZZZZZZ	Batch ID:	R115166	TestNo:	EPA 218.6			Analysis Date:	5/10/2017	SeqNo:	2640520		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.002	0.20	1.000	0	100	90	110	1.042	3.90	20		

Sample ID	N024106-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115166		
Client ID:	ZZZZZZ	Batch ID:	R115166	TestNo:	EPA 218.6			Analysis Date:	5/10/2017	SeqNo:	2640522		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Hexavalent Chromium		1.038	0.20	1.000	0	104	90	110					

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024136-001ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115166
Client ID:	ZZZZZZ	Batch ID:	R115166	TestNo:	EPA 218.6			Analysis Date:	5/10/2017	SeqNo:	2640536

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	42.208	2.0						42.18	0.0711	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62157	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	PBW	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641220

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62157	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	LCSW	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.466	1.0	10.00	0	94.7	85	115				

Sample ID	N024074-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641225

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.799	1.0	10.00	1.529	82.7	75	125				

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.779	1.0	10.00	1.529	82.5	75	125	9.799	0.203	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62158	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	PBW	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62158	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	LCSW	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.172	1.0	10.00	0	91.7	85	115				

Sample ID	N024089-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	8.117	1.0	10.00	0	81.2	75	125				

Sample ID	N024089-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115179
Client ID:	ZZZZZZ	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641258

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	7.991	1.0	10.00	0	79.9	75	125	8.117	1.56	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024106
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024106-001

Client Sample ID: MW-65-160-Q217
Collection Date: 5/4/2017 8:43:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	13	0.22	0.50		mg/L	10	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	8.1	0.22	0.50		mg/L	10	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q219
Lab Order:	N024106	**Collection Date:**	5/4/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	8.3	0.11	0.25		mg/L	5	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-68BR-280-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 1:12:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170518C**	QC Batch: **R115325**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.077	0.022	0.050		mg/L	1	5/18/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-912-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 1:22:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170518C**	QC Batch: **R115325**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/18/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-67-225-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 3:25:00 PM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	26	0.44	1.0		mg/L	20	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 11:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170518C**	QC Batch: **R115325**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/18/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115298	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	PBW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115298	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	LCSW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	85	115				

Sample ID	N024090-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.059	0.050						0.06780	13.9	20	

Sample ID	N024090-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.543	0.050	0.5000	0.06780	95.1	75	125				

Sample ID	N024090-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.547	0.050	0.5000	0.06780	95.9	75	125	0.5433	0.697	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115325	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	PBW	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648866

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115325	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	LCSW	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648867

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.546	0.050	0.5000	0	109	85	115				

Sample ID	N024184-012EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.440	0.050						0.4479	1.76	20	

Sample ID	N024184-012EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648870

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.893	0.050	0.5000	0.4479	89.1	75	125				

Sample ID	N024184-012EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.910	0.050	0.5000	0.4479	92.4	75	125	0.8934	1.82	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024106
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024106-001

Client Sample ID: MW-65-160-Q217
Collection Date: 5/4/2017 8:43:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	0.35	0.025	0.10		µg/L	1	5/11/2017 09:39 AM
Manganese	310	0.28	2.5		µg/L	5	5/11/2017 10:15 PM
Molybdenum	35	0.039	0.50		µg/L	1	5/11/2017 09:39 AM
Selenium	8.0	0.028	0.50		µg/L	1	5/11/2017 09:39 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-65-225-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 10:30:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	1.9	0.025	0.10		µg/L	1	5/11/2017 09:45 AM
Manganese	33	0.056	0.50		µg/L	1	5/11/2017 09:45 AM
Molybdenum	27	0.19	2.5		µg/L	5	5/11/2017 10:21 PM
Selenium	6.4	0.14	2.5		µg/L	5	5/11/2017 10:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-911-Q219
Lab Order:	N024106	**Collection Date:**	5/4/2017 10:40:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	1.9	0.025	0.10		µg/L	1	5/11/2017 09:51 AM
Manganese	42	0.056	0.50		µg/L	1	5/11/2017 09:51 AM
Molybdenum	25	0.19	2.5		µg/L	5	5/11/2017 10:27 PM
Selenium	4.7	0.14	2.5		µg/L	5	5/11/2017 10:27 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024106
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024106-004

Client Sample ID: MW-68BR-280-Q217
Collection Date: 5/4/2017 1:12:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	ND	0.12	0.50		µg/L	5	5/11/2017 10:32 PM
Manganese	130	0.28	2.5		µg/L	5	5/11/2017 10:32 PM
Molybdenum	31	0.97	12		µg/L	25	5/11/2017 10:38 PM
Selenium	ND	0.69	12		µg/L	25	5/11/2017 10:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024106
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024106-005

Client Sample ID: MW-912-Q217
Collection Date: 5/4/2017 1:22:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170511B**	QC Batch: **62158**			PrepDate	**5/8/2017**	Analyst: **CEI**	
Arsenic	ND	0.12	0.50		µg/L	5	5/11/2017 10:43 PM
Manganese	130	0.28	2.5		µg/L	5	5/11/2017 10:43 PM
Molybdenum	31	0.19	2.5		µg/L	5	5/11/2017 10:43 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 10:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024106
Project: PG&E Topock - GMP, RC000753.801B
Lab ID: N024106-006

Client Sample ID: MW-67-225-Q217
Collection Date: 5/4/2017 3:25:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170510E**	QC Batch: **62158**			PrepDate		**5/8/2017**	Analyst: **CEI**
Arsenic	3.2	0.025	0.10		µg/L	1	5/11/2017 10:19 AM
Manganese	28	0.056	0.50		µg/L	1	5/11/2017 10:19 AM
Molybdenum	43	0.19	2.5		µg/L	5	5/11/2017 11:06 PM
Selenium	86	0.028	0.50		µg/L	1	5/11/2017 10:19 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-66BR-270-Q217
Lab Order:	N024106	**Collection Date:**	5/4/2017 11:15:00 AM
Project:	PG&E Topock - GMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024106-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170510E**	QC Batch: **62157**				PrepDate	**5/8/2017**	Analyst: **CEI**
Arsenic	ND	0.025	0.10		µg/L	1	5/11/2017 07:02 AM
Manganese	5400	2.8	25		µg/L	50	5/11/2017 07:34 PM
Molybdenum	2.9	0.19	2.5		µg/L	5	5/11/2017 07:29 PM
Selenium	ND	0.14	2.5		µg/L	5	5/11/2017 07:29 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62157**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **PBW**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62157**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **LCSW**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.594	0.10	10.00	0	95.9	85	115				
Manganese	95.344	0.50	100.0	0	95.3	85	115				
Molybdenum	9.743	0.50	10.00	0	97.4	85	115				
Selenium	9.256	0.50	10.00	0	92.6	85	115				

Sample ID **N024074-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **ZZZZZZ**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.320	0.10	10.00	1.483	98.4	75	125				
Manganese	97.361	0.50	100.0	9.787	87.6	75	125				
Selenium	9.322	0.50	10.00	0.6561	86.7	75	125				

Sample ID **N024074-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/8/2017**	RunNo: **115180**
Client ID: **ZZZZZZ**	Batch ID: **62157**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/11/2017**	SeqNo: **2641310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.232	0.10	10.00	1.483	97.5	75	125	11.32	0.778	20	
Manganese	97.041	0.50	100.0	9.787	87.3	75	125	97.36	0.329	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641310

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.097	0.50	10.00	0.6561	94.4	75	125	9.322	7.99	20	

Sample ID	N024074-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2645168

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.125	0.50	10.00	19.35	118	75	125				

Sample ID	N024074-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	ZZZZZZ	Batch ID:	62157	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2645169

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	31.288	0.50	10.00	19.35	119	75	125	31.13	0.523	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	MB-62158	SampType:	MBLK	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	PBW	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641334

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Manganese	0.069	0.50									
Molybdenum	0.064	0.50									
Selenium	ND	0.50									

Sample ID	LCS-62158	SampType:	LCS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115180
Client ID:	LCSW	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2641335

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.502	0.10	10.00	0	95.0	85	115				
Manganese	94.675	0.50	100.0	0	94.7	85	115				
Molybdenum	9.794	0.50	10.00	0	97.9	85	115				
Selenium	9.195	0.50	10.00	0	92.0	85	115				

Sample ID	N024089-001B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115185
Client ID:	ZZZZZZ	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2643938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.292	2.5	10.00	1.513	108	75	125				
Manganese	1647.484	12	100.0	1557	90.0	75	125				
Molybdenum	36.378	12	10.00	24.88	115	75	125				
Selenium	11.136	12	10.00	0	111	75	125				

Sample ID	N024089-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115185
Client ID:	ZZZZZZ	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2643941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.933	2.5	10.00	1.513	104	75	125	12.29	2.96	20	
Manganese	1632.230	12	100.0	1557	74.8	75	125	1647	0.930	20	S

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024106
Project: PG&E Topock - GMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024089-001B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/8/2017	RunNo:	115185
Client ID:	ZZZZZZ	Batch ID:	62158	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/11/2017	SeqNo:	2643941

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Molybdenum	36.371	12	10.00	24.88	115	75	125	36.38	0.0195	20	
Selenium	11.969	12	10.00	0	120	75	125	11.14	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@arcadis.com	Address	Geotracker
Phone: 916-786-3302 / Fax	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P O #
Submitted By: Alexis McIntyre		Phone: 949-727-1400. ext 200	Fax:
Title: Geologist 1	Phone: 916-786-3302 / Fax		
Signature / Date	Sampled By: Jason Mahn		
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for		
Project Name: PG&E Topock - GMP	Signature:	Date: 5/4/17	
Project Number: RC000753.801B			

Matrix			
Ground	x	Sediment	
Potable		Soil	
NPDES		Other Solid	
Surface			

EDD Requirement		QA/QC	
Excel EDD		RTNE	
Geotracker		RWQCB	✓
Labspec		CalTrans	
Others	✓	LEVEL III	
Specify: RWQCB		LEVEL IV	
Global ID		Regulatory	
		Specify State: CA	

Sample Receipt Condition	Y	N
1. Chilled	✓	
2. Headspace		
3. Container Intact		
4. Seal Present		
5. IR number		
6. Method of Cooling: ICE		
Sample Temp: 2.6°C		

Courier: LAB
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH	Metals Dissolved (6020FF); As, HNO3	Metals Dissolved (6020FF); Mo, HNO3	Metals Dissolved (6020FF); Se, HNO3	Metals Dissolved (6020FF); Cr, HNO3	Metals Dissolved (6020FF); Mn, HNO3	Nitrate/Nitrite (SM4500NO3) Nitrate, H2SO4	Calcium, Dissolved (EPA 200.7), HNO3	IRCN, Dissolved (EPA 200.7), HNO3	Sodium, Dissolved (EPA 200.7) HNO3	Manganese, Chromium, Dissolved (EPA 200.8); HNO3	Magnesium, Dissolved (EPA 200.7), HNO3	Chloride, E300	Alkalinity, (SM2320B), Total as CaCO3	TDS, SM2540C	Bromide, E300	Sulfate, E300	Specific conductance 120.1	pH (SM4500-H+)	Oxygen & Deut. Stable Isotopes	Diss. Potassium 6010B	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						250 mL poly	2 X 250 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	125 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly	1000 mL poly							
1	N024106 - 01	MW-65-160-Q217	5/4/17	0843		X		X	X	X	X	X	X														E	3	P	BNS	
2	- 02	MW-65-225-Q217	5/4/17	1030		X		X	X	X	X	X	X														E	3	P	BNS	
3	- 03	MW-911-Q219	5/4/17	1040		X		X	X	X	X	X	X														E	3	P	BNS	
4	- 04	MW-68BR-280-Q217	5/4/17	1312		X		X	X	X	X	X	X														E	3	P	BNS	
5	- 05	MW-912-Q217	5/4/17	1322		X		X	X	X	X	X	X														E	3	P	BNS	
6	- 06	MW-67-225-Q217	5/4/17	1525		X		X	X	X	X	X	X														E	3	P	BNS	
7	- 07	MW-66BR-270-Q217	5/4/17	1115		X		X	X	X	X	X	X														E	3	P	BNS	
8	- 08	MW-720-Q217	5/4/17	1540		X																					E	1	P	BNS	
9	- 09	MW-721-Q217	5/4/2017	0745		X																					E	1	P	BNS	
10	- 10	MW-722-Q217	5/4/2017	0900		X																					E	1	P	BNS	
11																															
12																															
13																															

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
	5/4/17	Ping-ailang	5/4/17 1609
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
Ping-ailang	5/4/17 1612	Ping-ailang	5/4/17 1612
Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [X] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3.00PM

Special Instruction:
Run analysis for*** Title 22 metals,Al, Sb, As, Ba,Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Ti, V, Zn, K, Na.

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project
5. Trip Blanks and Equipment Blanks are billable sample
6. Asset Laboratories is not responsible for samples collected using incorrect methodology
7. Terms are net 30 days
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9. For subcontract analyses TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/4/2017	Workorder:	N024106
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☑	No ☐	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☐	No ☐	NA ☑
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments:

Checklist Completed By: YR 5/5/2017

Reviewed By: MBC 5/8/2017

ASSET Laboratories

WORK ORDER Summary

04-May-17

WorkOrder: N024106

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/4/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024106-001A	MW-65-160-Q217	5/4/2017 8:43:00 AM	5/18/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-001B			5/18/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024106-001C			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024106-002A	MW-65-225-Q217	5/4/2017 10:30:00 AM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-002B			5/18/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024106-002C			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024106-003A	MW-911-Q219	5/4/2017 10:40:00 AM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-003B			5/18/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024106-003C			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024106-004A	MW-68BR-280-Q217	5/4/2017 1:12:00 PM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-004B			5/18/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024106-004C			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024106-005A	MW-912-Q217	5/4/2017 1:22:00 PM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-17

WorkOrder: N024106

Client ID: ARCUS02

Project: PG&E Topock - GMP, RC000753.801B **QC Level:** Level IV **Date Received:** 5/4/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024106-005B	MW-912-Q217	5/4/2017 1:22:00 PM	5/18/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024106-005C			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024106-006A	MW-67-225-Q217	5/4/2017 3:25:00 PM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-006B			5/18/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024106-006C			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024106-007A	MW-66BR-270-Q217	5/4/2017 11:15:00 AM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-007B			5/18/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/18/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024106-007C			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024106-008A	MW-720-Q217	5/4/2017 3:40:00 PM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-009A	MW-721-Q217	5/4/2017 7:45:00 AM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-010A	MW-722-Q217	5/4/2017 9:00:00 AM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024106-011A	FOLDER	5/18/2017	5/5/2017		Folder	Folder	☐	☐	☐	LAB
			5/18/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/18/2017		Folder	Folder	☐	☐	☐	LAB

May 18, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024107

RE: PG&E Topock - PMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 04, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N024107

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N024107-001B-MS2 and N024107-001B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium on QC samples N024075-002E-MS and N024075-002E-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N024075-001C-MS and N024075-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
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ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *18-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N024107
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024107-001A	PE-01-0517	Groundwater	5/4/2017 3:15:00 PM	5/4/2017	5/18/2017
N024107-001B	PE-01-0517	Groundwater	5/4/2017 3:15:00 PM	5/4/2017	5/18/2017
N024107-001C	PE-01-0517	Groundwater	5/4/2017 3:15:00 PM	5/4/2017	5/18/2017
N024107-001D	PE-01-0517	Groundwater	5/4/2017 3:15:00 PM	5/4/2017	5/18/2017
N024107-002A	TW-03D-0517	Groundwater	5/4/2017 3:00:00 PM	5/4/2017	5/18/2017
N024107-002B	TW-03D-0517	Groundwater	5/4/2017 3:00:00 PM	5/4/2017	5/18/2017
N024107-002C	TW-03D-0517	Groundwater	5/4/2017 3:00:00 PM	5/4/2017	5/18/2017
N024107-002D	TW-03D-0517	Groundwater	5/4/2017 3:00:00 PM	5/4/2017	5/18/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170505B**	QC Batch: **R115056**			PrepDate			Analyst: **LR**
Specific Conductance	4100	0.10	0.10		umhos/cm	1	5/5/2017 10:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170505B**	QC Batch: **R115056**			PrepDate			Analyst: **LR**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	5/5/2017 10:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N024107-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:					RunNo: **115056**		
Client ID: **ZZZZZZ**	Batch ID: **R115056**	TestNo: **EPA 120.1**		Analysis Date: **5/5/2017**					SeqNo: **2636659**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7590.000	0.10						7630	0.526	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170505A**	QC Batch: **R115055**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	5/5/2017 10:40 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/5/2017 10:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170505A**	QC Batch: **R115055**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	5/5/2017 10:40 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/5/2017 10:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID	**N024107-002CDUP**	SampType:	**DUP**	TestCode:	**150.1_4500H**	Units:	**pH Units**	Prep Date:		RunNo:	**115055**
Client ID:	**ZZZZZZ**	Batch ID:	**R115055**	TestNo:	**SM4500-H+B**			Analysis Date:	**5/5/2017**	SeqNo:	**2636655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.270	0.10						7.260	0.138	10	H
Temp. at time of pH Analysis	17.200	0.10						17.30	0.580	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170508C**	QC Batch: **62159**			PrepDate	**5/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2300	33	33		mg/L	1	5/8/2017 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170508C**	QC Batch: **62159**			PrepDate	**5/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	5/8/2017 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-62159**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/8/2017**	RunNo: **115083**
Client ID: **LCSW**	Batch ID: **62159**	TestNo: **SM2540C**		Analysis Date: **5/8/2017**	SeqNo: **2638212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	956.000	10	1000	0	95.6	80	120				

Sample ID **MB-62159**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/8/2017**	RunNo: **115083**
Client ID: **PBW**	Batch ID: **62159**	TestNo: **SM2540C**		Analysis Date: **5/8/2017**	SeqNo: **2638213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N024107-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/8/2017**	RunNo: **115083**
Client ID: **ZZZZZZ**	Batch ID: **62159**	TestNo: **SM2540C**		Analysis Date: **5/8/2017**	SeqNo: **2638216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4405.000	50						4385	0.455	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-001

Client Sample ID: PE-01-0517
Collection Date: 5/4/2017 3:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
EPA 200.7							
RunID: **NV00922-ICP2_170513A** QC Batch: **62172**				PrepDate	**5/10/2017**	Analyst: **CEI**	
Calcium	120000	28	500		µg/L	1	5/13/2017 11:58 AM
Iron	280	1.8	20		µg/L	1	5/13/2017 11:58 AM
Magnesium	26000	4.4	100		µg/L	1	5/13/2017 11:58 AM
Sodium	640000	1300	25000		µg/L	50	5/17/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170513A**	QC Batch: **62172**				PrepDate	**5/10/2017**	Analyst: **CEI**
Calcium	230000	28	500		µg/L	1	5/13/2017 12:03 PM
Iron	ND	1.8	20		µg/L	1	5/13/2017 12:03 PM
Magnesium	31000	4.4	100		µg/L	1	5/13/2017 12:03 PM
Sodium	1400000	1300	25000		µg/L	50	5/17/2017 03:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-62172**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/10/2017**	RunNo: **115214**
Client ID: **PBW**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	12.866	20									
Magnesium	13.761	100									

Sample ID **LCS1-62172**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/10/2017**	RunNo: **115214**
Client ID: **LCSW**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9724.666	500	10000	0	97.2	85	115				
Iron	110.524	20	100.0	0	111	85	115				
Magnesium	10336.445	100	10000	0	103	85	115				

Sample ID **N024075-002E-MS**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/10/2017**	RunNo: **115214**
Client ID: **ZZZZZZ**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	141225.092	500	10000	122700	185	75	125				S
Iron	108.749	20	100.0	16.41	92.3	75	125				
Magnesium	39685.066	100	10000	28820	109	75	125				

Sample ID **N024075-002E-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/10/2017**	RunNo: **115214**
Client ID: **ZZZZZZ**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	141104.028	500	10000	122700	184	75	125	141200	0.0858	20	S
Iron	108.537	20	100.0	16.41	92.1	75	125	108.7	0.195	20	
Magnesium	39687.888	100	10000	28820	109	75	125	39690	0.00711	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-62172	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115304
Client ID:	PBW	Batch ID:	62172	TestNo:	EPA 200.7			Analysis Date:	5/17/2017	SeqNo:	2648129

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-62172	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115304
Client ID:	LCSW	Batch ID:	62172	TestNo:	EPA 200.7			Analysis Date:	5/17/2017	SeqNo:	2648130

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	20735.225	500	20000	0	104	85	115				

Sample ID	N024107-001B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115304
Client ID:	ZZZZZZ	Batch ID:	62172	TestNo:	EPA 200.7			Analysis Date:	5/17/2017	SeqNo:	2648139

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	722198.739	25000	20000	643800	392	75	125				S

Sample ID	N024107-001B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115304
Client ID:	ZZZZZZ	Batch ID:	62172	TestNo:	EPA 200.7			Analysis Date:	5/17/2017	SeqNo:	2648140

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	723134.141	25000	20000	643800	397	75	125	722200	0.129	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170512B** QC Batch: **62182** PrepDate **5/11/2017** Analyst: **CEI**							
Manganese	120	0.28	2.5		µg/L	5	5/12/2017 02:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *18-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170512B** QC Batch: **62182** PrepDate **5/11/2017** Analyst: **CEI**							
Manganese	9.8	0.056	0.50		µg/L	1	5/12/2017 02:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID	MB-62182	SampType:	MBLK	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	PBW	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644501

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID	LCS-62182	SampType:	LCS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	LCSW	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644502

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.871	0.50	100.0	0	98.9	85	115				

Sample ID	N024075-001C-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644508

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.441	0.50	100.0	9.251	84.2	75	125				

Sample ID	N024075-001C-MSD	SampType:	MSD	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644510

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.568	0.50	100.0	9.251	83.3	75	125	93.44	0.939	20	

Sample ID	N024107-001B-MS	SampType:	MS	TestCode:	200.8_WDISS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644519

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	206.046	2.5	100.0	118.4	87.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-001

Client Sample ID: PE-01-0517
Collection Date: 5/4/2017 3:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A** QC Batch: **R115084**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2017 05:00 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170512B** QC Batch: **62182**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/12/2017 02:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-002

Client Sample ID: TW-03D-0517
Collection Date: 5/4/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A** QC Batch: **R115084**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	6.6	20		µg/L	100	5/5/2017 05:19 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170512B** QC Batch: **62182**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	540	0.096	5.0		µg/L	5	5/12/2017 02:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-62182	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	PBW	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644337

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62182	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	LCSW	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644338

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.976	1.0	10.00	0	99.8	85	115				

Sample ID	N024075-001C-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644345

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	515.103	5.0	10.00	520.8	-56.6	75	125				S

Sample ID	N024075-001C-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644349

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	522.751	5.0	10.00	520.8	19.8	75	125	515.1	1.47	20	S

Sample ID	N024107-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644354

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.055	1.0	10.00	0.2146	88.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115084	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	PBW	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637214

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R115084	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	LCSW	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637215

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.011	0.20	5.000	0	100	90	110				

Sample ID	N024064-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.864	1.0	5.000	5.861	100	90	110				

Sample ID	N024064-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Sample ID	N024074-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.130	0.20	1.000	1.109	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637222

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	171.480	4.0	100.0	70.94	101	90	110				

Sample ID	N024074-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1078.390	20	500.0	581.6	99.4	90	110				

Sample ID	N024074-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637228

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	878.150	20	500.0	367.6	102	90	110				

Sample ID	N024074-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1332.790	20	500.0	829.4	101	90	110				

Sample ID	N024074-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2832.260	40	1000	1813	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084		
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637234		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	234.004	4.0	100.0	133.1	101	90	110						

Sample ID	N024074-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084		
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637238		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110						

Sample ID	N024074-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084		
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637240		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	7.925	1.0	5.000	2.946	99.6	90	110						

Sample ID	N024074-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084		
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637242		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	576.350	20						581.6	0.905	20			

Sample ID	N024074-008AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084		
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637243		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Hexavalent Chromium	2847.440	40	1000	1813	103	90	110	2832	0.535	20			

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.074	1.0	5.000	0	101	90	110				

Sample ID	N024074-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID	N024074-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637252

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID	N024074-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.588	0.20	5.000	5.442	103	90	110				

Sample ID	N024107-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024107-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1046.900	20	500.0	546.3	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170505D**	QC Batch: **R115058**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	5/5/2017 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170505D**	QC Batch: **R115058**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	5/5/2017 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID	LCS-R115058	SampType:	LCS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	115058
Client ID:	LCSW	Batch ID:	R115058	TestNo:	SM 2320 B			Analysis Date:	5/5/2017	SeqNo:	2636691

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	100.446	5.0	100.0	0	100	85	115				

Sample ID	MB-R115058	SampType:	MBLK	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	115058
Client ID:	PBW	Batch ID:	R115058	TestNo:	SM 2320 B			Analysis Date:	5/5/2017	SeqNo:	2636692

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID	N024107-001CDUP	SampType:	DUP	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	115058
Client ID:	ZZZZZZ	Batch ID:	R115058	TestNo:	SM 2320 B			Analysis Date:	5/5/2017	SeqNo:	2636694

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	218.750	5.0						219.9	0.509	30	

Sample ID	N024107-002CMS	SampType:	MS	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	115058
Client ID:	ZZZZZZ	Batch ID:	R115058	TestNo:	SM 2320 B			Analysis Date:	5/5/2017	SeqNo:	2636696

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.696	5.0	100.0	164.1	92.6	75	125				

Sample ID	N024107-002CMSD	SampType:	MSD	TestCode:	2320_W_SP	Units:	mg/L	Prep Date:		RunNo:	115058
Client ID:	ZZZZZZ	Batch ID:	R115058	TestNo:	SM 2320 B			Analysis Date:	5/5/2017	SeqNo:	2636697

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.696	5.0	100.0	164.1	92.6	75	125	256.7	0	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-001

Client Sample ID: PE-01-0517
Collection Date: 5/4/2017 3:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170505A** QC Batch: **R115067**				PrepDate			Analyst: **RAB**
Chloride	970	0.72	100		mg/L	200	5/5/2017 11:03 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170505A** QC Batch: **R115067**				PrepDate			Analyst: **RAB**
Sulfate	350	0.64	25		mg/L	50	5/5/2017 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170505A** QC Batch: **R115067**				PrepDate			Analyst: **RAB**
Chloride	2100	1.8	250		mg/L	500	5/5/2017 12:05 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170505A** QC Batch: **R115067**				PrepDate			Analyst: **RAB**
Sulfate	510	0.64	25		mg/L	50	5/5/2017 01:13 PM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R115067_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	PBW	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.124	0.50									

Sample ID	LCS-R115067_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	LCSW	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636787

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.979	0.50	2.000	0	98.9	90	110				

Sample ID	N024107-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636789

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	987.460	100						974.4	1.33	20	

Sample ID	N024107-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636790

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1358.180	100	400.0	974.4	95.9	80	120				

Sample ID	N024107-001CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636791

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1376.060	100	400.0	974.4	100	80	120	1358	1.31	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R115067_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	PBW	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636801

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R115067_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	LCSW	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636802

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.970	0.50	4.000	0	99.2	90	110				

Sample ID	N024107-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	368.590	25						351.6	4.71	20	

Sample ID	N024107-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636809

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	568.815	25	200.0	351.6	109	80	120				

Sample ID	N024107-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636810

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	569.975	25	200.0	351.6	109	80	120	568.8	0.204	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.0	0.22	0.50		mg/L	10	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115298	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	PBW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115298	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	LCSW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	85	115				

Sample ID	N024090-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.059	0.050						0.06780	13.9	20	

Sample ID	N024090-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.543	0.050	0.5000	0.06780	95.1	75	125				

Sample ID	N024090-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.547	0.050	0.5000	0.06780	95.9	75	125	0.5433	0.697	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville CA 95661	Email: dan.bush@arcadis.com; daniel.lawyer@cmiggen.com	Address:	Geotracker	RWQCB ✓	1 Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P O #	Labspec	CalTrans	2 Headspace
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax	Others ✓	LEVEL III	3 Container Intact
Title: Geologist 1	Phone: 916-786-3302 Fax:			Specify: RWQCB	LEVEL IV	4 Seal Present
Signature: Date:	Sampled By:			Global ID	Regulatory	5 IR number: 2
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for				Specify State:	6 Method of Cooling: Ice
Project Name: PG&E Topock - PMP	Signature: Date: 5/4/17					Sample Temp: 2-6°C
Project Number: RC000753 0801						

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH	Dissolved metals (E200.8) FF, HNO3 Cr, Mn	Dissolved metals (E200.7) FF, HNO3 Ca, Mg, Na, Fe	Dissolved metals (SW6010B/SW6020A dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B) HNO3 Fe	Anions (E300.0) Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate, H2SO4											Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						250 mL poly	250 mL poly	500mL poly	500mL poly	500mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly	1 liter poly														
1	N024107 - 01	PE-01-0517	5/4/2017	1515		X		X	X			X	X	X	X	X		X											m	4	P	BNS	
2	- 02	TW-03D-0517	5/4/2017	1500		X		X	X			X	X	X	X	X		X											m	4	P	BNS	
3																																
4																																
5																																
6																																
7																																
8																																
9																																
10																																

Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	5/4/17		5/4/17 1609
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:
	5/4/17 1712		5/4/17 1812
Relinquished by (Signature and Printed Name):	Date/Time:	Relinquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Title 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1 All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2 Regular TAT is 5-7 business days. Surcharges will apply for rush analyses
Less than 24 Hrs =200% Next Day=100% 2 Workdays=60% 3 Workdays=35 % 4 Workdays=30%
3 Custom EDD formats will be an additional 5% of the total project price
4 Add 10% surcharge for Level III Data Packages 15% for Level IV Data Packages. Surcharge applies on total project price
5 Trip Blanks and Equipment Blanks are billable samples.
6 Asset Laboratories is not responsible for samples collected using incorrect methodology
7 Terms are net 30 days
8 All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9 For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/4/2017	Workorder:	N024107
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 5/5/2017

Reviewed By: MBC 5/8/2017

ASSET Laboratories

WORK ORDER Summary

04-May-17

WorkOrder: N024107

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/4/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024107-001A	PE-01-0517	5/4/2017 3:15:00 PM	5/18/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024107-001B			5/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/18/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024107-001C			5/18/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/18/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/18/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/18/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/18/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/18/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/18/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N024107-001D			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024107-002A	TW-03D-0517	5/4/2017 3:00:00 PM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024107-002B			5/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/18/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024107-002C			5/18/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/18/2017		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-17

WorkOrder: N024107

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/4/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024107-002C	TW-03D-0517	5/4/2017 3:00:00 PM	5/18/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/18/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/18/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/18/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/18/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N024107-002D			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024107-003A	FOLDER	5/18/2017	5/5/2017		Folder	Folder	☐	☐	☐	LAB
			5/18/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/18/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N024107

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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May 18, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024107

RE: PG&E Topock - PMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 04, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Liburdi for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N024107

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 200.7_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N024107-001B-MS2 and N024107-001B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Calcium on QC samples N024075-002E-MS and N024075-002E-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for EPA 200.8_Dissolved:

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Chromium on QC samples N024075-001C-MS and N024075-001C-MSD since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

ASSET LABORATORIES
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ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *18-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.0801
Lab Order: N024107
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024107-001A	PE-01-0517	Groundwater	5/4/2017 3:15:00 PM	5/4/2017	5/18/2017
N024107-001B	PE-01-0517	Groundwater	5/4/2017 3:15:00 PM	5/4/2017	5/18/2017
N024107-001C	PE-01-0517	Groundwater	5/4/2017 3:15:00 PM	5/4/2017	5/18/2017
N024107-001D	PE-01-0517	Groundwater	5/4/2017 3:15:00 PM	5/4/2017	5/18/2017
N024107-002A	TW-03D-0517	Groundwater	5/4/2017 3:00:00 PM	5/4/2017	5/18/2017
N024107-002B	TW-03D-0517	Groundwater	5/4/2017 3:00:00 PM	5/4/2017	5/18/2017
N024107-002C	TW-03D-0517	Groundwater	5/4/2017 3:00:00 PM	5/4/2017	5/18/2017
N024107-002D	TW-03D-0517	Groundwater	5/4/2017 3:00:00 PM	5/4/2017	5/18/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170505B**	QC Batch: **R115056**			PrepDate			Analyst: **LR**
Specific Conductance	4100	0.10	0.10		umhos/cm	1	5/5/2017 10:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170505B**	QC Batch: **R115056**			PrepDate			Analyst: **LR**
Specific Conductance	7600	0.10	0.10		umhos/cm	1	5/5/2017 10:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N024107-002CDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**115056**
Client ID:	**ZZZZZZ**	Batch ID:	**R115056**	TestNo:	**EPA 120.1**			Analysis Date:	**5/5/2017**	SeqNo:	**2636659**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7590.000	0.10						7630	0.526	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-001

Client Sample ID: PE-01-0517
Collection Date: 5/4/2017 3:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170505A**	QC Batch: **R115055**			PrepDate			Analyst: **LR**
pH	7.4	0.10	0.10	H	pH Units	1	5/5/2017 10:40 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/5/2017 10:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-002

Client Sample ID: TW-03D-0517
Collection Date: 5/4/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170505A**	QC Batch: **R115055**			PrepDate			Analyst: **LR**
pH	7.3	0.10	0.10	H	pH Units	1	5/5/2017 10:40 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/5/2017 10:40 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024107-002CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **115055**
Client ID: **ZZZZZZ** Batch ID: **R115055** TestNo: **SM4500-H+B** Analysis Date: **5/5/2017** SeqNo: **2636655**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.270	0.10						7.260	0.138	10	H
Temp. at time of pH Analysis	17.200	0.10						17.30	0.580	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170508C**	QC Batch: **62159**			PrepDate	**5/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2300	33	33		mg/L	1	5/8/2017 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170508C**	QC Batch: **62159**			PrepDate	**5/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	5/8/2017 01:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-62159**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/8/2017**	RunNo: **115083**
Client ID: **LCSW**	Batch ID: **62159**	TestNo: **SM2540C**		Analysis Date: **5/8/2017**	SeqNo: **2638212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	956.000	10	1000	0	95.6	80	120				

Sample ID **MB-62159**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/8/2017**	RunNo: **115083**
Client ID: **PBW**	Batch ID: **62159**	TestNo: **SM2540C**		Analysis Date: **5/8/2017**	SeqNo: **2638213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N024107-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **5/8/2017**	RunNo: **115083**
Client ID: **ZZZZZZ**	Batch ID: **62159**	TestNo: **SM2540C**		Analysis Date: **5/8/2017**	SeqNo: **2638216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4405.000	50						4385	0.455	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-001

Client Sample ID: PE-01-0517
Collection Date: 5/4/2017 3:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
			EPA 200.7				
RunID: **NV00922-ICP2_170513A**	QC Batch: **62172**				PrepDate	**5/10/2017**	Analyst: **CEI**
Calcium	120000	28	500		µg/L	1	5/13/2017 11:58 AM
Iron	280	1.8	20		µg/L	1	5/13/2017 11:58 AM
Magnesium	26000	4.4	100		µg/L	1	5/13/2017 11:58 AM
Sodium	640000	1300	25000		µg/L	50	5/17/2017 03:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-002

Client Sample ID: TW-03D-0517
Collection Date: 5/4/2017 3:00:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 200.7

RunID: **NV00922-ICP2_170513A** QC Batch: **62172** PrepDate **5/10/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	230000	28	500		µg/L	1	5/13/2017 12:03 PM
Iron	ND	1.8	20		µg/L	1	5/13/2017 12:03 PM
Magnesium	31000	4.4	100		µg/L	1	5/13/2017 12:03 PM
Sodium	1400000	1300	25000		µg/L	50	5/17/2017 03:33 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **MB-62172**	SampType: **MBLK**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/10/2017**	RunNo: **115214**
Client ID: **PBW**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	12.866	20									
Magnesium	13.761	100									

Sample ID **LCS1-62172**	SampType: **LCS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/10/2017**	RunNo: **115214**
Client ID: **LCSW**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	9724.666	500	10000	0	97.2	85	115				
Iron	110.524	20	100.0	0	111	85	115				
Magnesium	10336.445	100	10000	0	103	85	115				

Sample ID **N024075-002E-MS**	SampType: **MS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/10/2017**	RunNo: **115214**
Client ID: **ZZZZZZ**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643292**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	141225.092	500	10000	122700	185	75	125				S
Iron	108.749	20	100.0	16.41	92.3	75	125				
Magnesium	39685.066	100	10000	28820	109	75	125				

Sample ID **N024075-002E-MSD**	SampType: **MSD**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date: **5/10/2017**	RunNo: **115214**
Client ID: **ZZZZZZ**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643293**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	141104.028	500	10000	122700	184	75	125	141200	0.0858	20	S
Iron	108.537	20	100.0	16.41	92.1	75	125	108.7	0.195	20	
Magnesium	39687.888	100	10000	28820	109	75	125	39690	0.00711	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID	MB-62172	SampType:	MBLK	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115304		
Client ID:	PBW	Batch ID:	62172	TestNo:	EPA 200.7			Analysis Date:	5/17/2017	SeqNo:	2648129		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		ND	500										

Sample ID	LCS2-62172	SampType:	LCS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115304		
Client ID:	LCSW	Batch ID:	62172	TestNo:	EPA 200.7			Analysis Date:	5/17/2017	SeqNo:	2648130		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		20735.225	500	20000	0	104	85	115					

Sample ID	N024107-001B-MS2	SampType:	MS	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115304		
Client ID:	ZZZZZZ	Batch ID:	62172	TestNo:	EPA 200.7			Analysis Date:	5/17/2017	SeqNo:	2648139		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		722198.739	25000	20000	643800	392	75	125				S	

Sample ID	N024107-001B-MSD	SampType:	MSD	TestCode:	200.7_WDPG	Units:	µg/L	Prep Date:	5/10/2017	RunNo:	115304		
Client ID:	ZZZZZZ	Batch ID:	62172	TestNo:	EPA 200.7			Analysis Date:	5/17/2017	SeqNo:	2648140		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Sodium		723134.141	25000	20000	643800	397	75	125	722200	0.129	20	S	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170512B** QC Batch: **62182** PrepDate **5/11/2017** Analyst: **CEI**							
Manganese	120	0.28	2.5		µg/L	5	5/12/2017 02:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICPMS							
EPA 200.8							
RunID: **NV00922-ICP7_170512B** QC Batch: **62182** PrepDate **5/11/2017** Analyst: **CEI**							
Manganese	9.8	0.056	0.50		µg/L	1	5/12/2017 02:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **MB-62182**	SampType: **MBLK**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115230**
Client ID: **PBW**	Batch ID: **62182**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **LCS-62182**	SampType: **LCS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115230**
Client ID: **LCSW**	Batch ID: **62182**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.871	0.50	100.0	0	98.9	85	115				

Sample ID **N024075-001C-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115230**
Client ID: **ZZZZZZ**	Batch ID: **62182**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644508**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.441	0.50	100.0	9.251	84.2	75	125				

Sample ID **N024075-001C-MSD**	SampType: **MSD**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115230**
Client ID: **ZZZZZZ**	Batch ID: **62182**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644510**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.568	0.50	100.0	9.251	83.3	75	125	93.44	0.939	20	

Sample ID **N024107-001B-MS**	SampType: **MS**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115230**
Client ID: **ZZZZZZ**	Batch ID: **62182**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644519**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	206.046	2.5	100.0	118.4	87.7	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-001

Client Sample ID: PE-01-0517
Collection Date: 5/4/2017 3:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A** QC Batch: **R115084**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/5/2017 05:00 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170512B** QC Batch: **62182**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/12/2017 02:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-002

Client Sample ID: TW-03D-0517
Collection Date: 5/4/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170505A** QC Batch: **R115084**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	550	6.6	20		µg/L	100	5/5/2017 05:19 PM
DISSOLVED METALS BY ICP-MS							
			EPA 200.8				
RunID: **NV00922-ICP7_170512B** QC Batch: **62182**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	540	0.096	5.0		µg/L	5	5/12/2017 02:50 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	MB-62182	SampType:	MBLK	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	PBW	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644337

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62182	SampType:	LCS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	LCSW	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644338

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.976	1.0	10.00	0	99.8	85	115				

Sample ID	N024075-001C-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644345

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	515.103	5.0	10.00	520.8	-56.6	75	125				S

Sample ID	N024075-001C-MSD	SampType:	MSD	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644349

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	522.751	5.0	10.00	520.8	19.8	75	125	515.1	1.47	20	S

Sample ID	N024107-001B-MS	SampType:	MS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644354

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.055	1.0	10.00	0.2146	88.4	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	MB-R115084	SampType:	MBLK	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	PBW	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637214

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID	LCS-R115084	SampType:	LCS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	LCSW	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637215

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.011	0.20	5.000	0	100	90	110				

Sample ID	N024064-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637217

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.864	1.0	5.000	5.861	100	90	110				

Sample ID	N024064-015AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637219

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.070	0.20	1.000	0	107	90	110				

Sample ID	N024074-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637221

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.130	0.20	1.000	1.109	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637222

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	171.480	4.0	100.0	70.94	101	90	110				

Sample ID	N024074-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637226

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1078.390	20	500.0	581.6	99.4	90	110				

Sample ID	N024074-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637228

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	878.150	20	500.0	367.6	102	90	110				

Sample ID	N024074-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637230

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1332.790	20	500.0	829.4	101	90	110				

Sample ID	N024074-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637232

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2832.260	40	1000	1813	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637234

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	234.004	4.0	100.0	133.1	101	90	110				

Sample ID	N024074-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.004	0.20	1.000	0	100	90	110				

Sample ID	N024074-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637240

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	7.925	1.0	5.000	2.946	99.6	90	110				

Sample ID	N024074-003ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637242

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	576.350	20						581.6	0.905	20	

Sample ID	N024074-008AMSD	SampType:	MSD	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637243

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2847.440	40	1000	1813	103	90	110	2832	0.535	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024074-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637248

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.074	1.0	5.000	0	101	90	110				

Sample ID	N024074-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.085	0.20	1.000	0	108	90	110				

Sample ID	N024074-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637252

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Sample ID	N024074-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637255

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.588	0.20	5.000	5.442	103	90	110				

Sample ID	N024107-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.065	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024107-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115084
Client ID:	ZZZZZZ	Batch ID:	R115084	TestNo:	EPA 218.6			Analysis Date:	5/5/2017	SeqNo:	2637259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1046.900	20	500.0	546.3	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170505D**	QC Batch: **R115058**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	220	1.2	5.0		mg/L	1	5/5/2017 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170505D**	QC Batch: **R115058**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	160	1.2	5.0		mg/L	1	5/5/2017 01:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R115058**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **115058**
Client ID: **LCSW**	Batch ID: **R115058**	TestNo: **SM 2320 B**		Analysis Date: **5/5/2017**	SeqNo: **2636691**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	100.446	5.0	100.0	0	100	85	115				

Sample ID **MB-R115058**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **115058**
Client ID: **PBW**	Batch ID: **R115058**	TestNo: **SM 2320 B**		Analysis Date: **5/5/2017**	SeqNo: **2636692**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N024107-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **115058**
Client ID: **ZZZZZZ**	Batch ID: **R115058**	TestNo: **SM 2320 B**		Analysis Date: **5/5/2017**	SeqNo: **2636694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	218.750	5.0						219.9	0.509	30	

Sample ID **N024107-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **115058**
Client ID: **ZZZZZZ**	Batch ID: **R115058**	TestNo: **SM 2320 B**		Analysis Date: **5/5/2017**	SeqNo: **2636696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.696	5.0	100.0	164.1	92.6	75	125				

Sample ID **N024107-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:	RunNo: **115058**
Client ID: **ZZZZZZ**	Batch ID: **R115058**	TestNo: **SM 2320 B**		Analysis Date: **5/5/2017**	SeqNo: **2636697**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	256.696	5.0	100.0	164.1	92.6	75	125	256.7	0	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-001

Client Sample ID: PE-01-0517
Collection Date: 5/4/2017 3:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170505A** QC Batch: **R115067**				PrepDate			Analyst: **RAB**
Chloride	970	0.72	100		mg/L	200	5/5/2017 11:03 AM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170505A** QC Batch: **R115067**				PrepDate			Analyst: **RAB**
Sulfate	350	0.64	25		mg/L	50	5/5/2017 12:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024107
Project: PG&E Topock - PMP, RC000753.0801
Lab ID: N024107-002

Client Sample ID: TW-03D-0517
Collection Date: 5/4/2017 3:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170505A** QC Batch: **R115067**				PrepDate			Analyst: **RAB**
Chloride	2100	1.8	250		mg/L	500	5/5/2017 12:05 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170505A** QC Batch: **R115067**				PrepDate			Analyst: **RAB**
Sulfate	510	0.64	25		mg/L	50	5/5/2017 01:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R115067_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	PBW	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636786

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.124	0.50									

Sample ID	LCS-R115067_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	LCSW	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636787

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.979	0.50	2.000	0	98.9	90	110				

Sample ID	N024107-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636789

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	987.460	100						974.4	1.33	20	

Sample ID	N024107-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636790

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1358.180	100	400.0	974.4	95.9	80	120				

Sample ID	N024107-001CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636791

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1376.060	100	400.0	974.4	100	80	120	1358	1.31	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R115067_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	PBW	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636801

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID	LCS-R115067_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	LCSW	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636802

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.970	0.50	4.000	0	99.2	90	110				

Sample ID	N024107-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636808

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	368.590	25						351.6	4.71	20	

Sample ID	N024107-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636809

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	568.815	25	200.0	351.6	109	80	120				

Sample ID	N024107-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115067
Client ID:	ZZZZZZ	Batch ID:	R115067	TestNo:	EPA 300.0			Analysis Date:	5/5/2017	SeqNo:	2636810

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	569.975	25	200.0	351.6	109	80	120	568.8	0.204	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out
- Calculations are based on raw values

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:15:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0517
Lab Order:	N024107	**Collection Date:**	5/4/2017 3:00:00 PM
Project:	PG&E Topock - PMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024107-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170516C**	QC Batch: **R115298**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	3.0	0.22	0.50		mg/L	10	5/16/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115298	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	PBW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647728

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115298	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	LCSW	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647729

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	85	115				

Sample ID	N024090-001CDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647731

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.059	0.050						0.06780	13.9	20	

Sample ID	N024090-001CMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647732

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.543	0.050	0.5000	0.06780	95.1	75	125				

Sample ID	N024090-001CMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115298
Client ID:	ZZZZZZ	Batch ID:	R115298	TestNo:	SM4500-NO3			Analysis Date:	5/16/2017	SeqNo:	2647733

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.547	0.050	0.5000	0.06780	95.9	75	125	0.5433	0.697	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

Sample Receiving Items

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville CA 95661	Email: dan.bush@arcadis.com; daniel.lawyer@cmiggen.com	Address:	Global ID:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	P O #
Submitted By: Alexis McIntyre		Phone: 949-727-1400, ext 200	Fax
Title: Geologist 1	Phone: 916-786-3302 Fax:		
Signature: Date:	Sampled By: [signature]		
I hereby authorize ASSET Labs to perform the tests indicated below	*I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for*		
Project Name: PG&E Topock - PMP	Signature: [signature] Date: 5/4/17		
Project Number: RC000753 0801			

Sample Receipt Condition (Y / N):
1 Chilled ✓ Y
2 Headspace
3 Container Intact
4 Seal Present
5 IR number 2
6 Method of Cooling: Ice
Sample Temp: 2.6 °C

Courier:
Tracking No:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Matrix: Ground	Soil	Potable	Other Solid	NPDES	Surface	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH	Dissolved metals (E200.8) FF, HNO3 Cr, Mn	Dissolved metals (E200.7) FF, HNO3 Ca, Mg, Na, Fe	Dissolved metals (SW6010B/SW6020A-dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B) HNO3 Fe	Anions (E300.0) Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate, H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
												250 mL poly	250 mL poly	500mL poly	500mL poly	500mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly	1 liter poly				
1	N024107 - 01	PE-01-0517	5/4/2017	1515								X		X	X			X	X	X	X	X		X	m	4	P	BNS	
2	- 02	TW-03D-0517	5/4/2017	1500								X		X	X			X	X	X	X	X		X	m	4	P	BNS	
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[signature]	5/4/17	[signature]	5/4/17 1609
[signature]	5/4/17 1712	[signature]	5/4/17 1812
[signature]			

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:
Title 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Terms
1 All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2 Regular TAT is 5-7 business days. Surcharges will apply for rush analyses
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=30%
3 Custom EDD formats will be an additional 5% of the total project price
4 Add 10% surcharge for Level III Data Packages 15% for Level IV Data Packages. Surcharge applies on total project price
5 Trip Blanks and Equipment Blanks are billable samples.
6 Asset Laboratories is not responsible for samples collected using incorrect methodology
7 Terms are net 30 days
8 All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9 For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)$_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/4/2017	Workorder:	N024107
Rep sample Temp (Deg C):	2.6	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were pastholding time upon receipt.

Checklist Completed By: YR 5/5/2017

Reviewed By: MBC 5/8/2017

ASSET Laboratories

WORK ORDER Summary

04-May-17

WorkOrder: N024107

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/4/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024107-001A	PE-01-0517	5/4/2017 3:15:00 PM	5/18/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024107-001B			5/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/18/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024107-001C			5/18/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/18/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/18/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/18/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/18/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/18/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/18/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N024107-001D			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024107-002A	TW-03D-0517	5/4/2017 3:00:00 PM	5/18/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024107-002B			5/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 200.7	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/18/2017			AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/18/2017		EPA 200.8	DISSOLVED METALS BY ICPMS	☐	☐	☐	WW
			5/18/2017		EPA 200.8	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024107-002C			5/18/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/18/2017		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

04-May-17

WorkOrder: N024107

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/4/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024107-002C	TW-03D-0517	5/4/2017 3:00:00 PM	5/18/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			5/18/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			5/18/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			5/18/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			5/18/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N024107-002D			5/18/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024107-003A	FOLDER	5/18/2017	5/5/2017		Folder	Folder	☐	☐	☐	LAB
			5/18/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/18/2017		Folder	Folder	☐	☐	☐	LAB

List of Analysts

ASSET Laboratories Work Order: **N024107**

NAME	TEST METHOD
Claire Ignacio	EPA 200.7, EPA 200.8
Ria Abes	EPA 218.6, EPA 300.0
Lilia Ramit	EPA 120.1, SM4500-H+B, SM 2540C, SM 2320B
Ryan Balilu	SM 4500-NO3F

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115055 **Analyst:** LSR

ASSET #: N024107 **Date Analyzed:** 5/5/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/5/2017

2nd Level Reviewer: Nancy 5/18/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 5/5/17 1055

Analyst: LJR

	Standard	Std ID	Reading	Comments
	9.76 µS/cm	CNW – 170308A	9.58 mS/cm @20.4°C	% Rec: (90-110%)
	1413 |	161214B |	1407 @19.7°C	
	10003 |	170329A |	10110 @19.7°C	
	99938 –	161220J +	101200 @19.8°C	

	Sample ID	Matrix	Reading	Comments
1	N02410 7 -001C	H2O	4070 @20.1°C	
2	| 2C	|	7630 @20.3°C	
3	| 2C DUP	|	7590 @20.0°C	
4				
5				
6				
7				
8				
9	1413 µS/cm	CNW – 170125F	1430 mS/cm @21.5°C	
10	10000 |	170125E |	10250 @22.2°C	
Dup	99899 |	161104A |	100300 @22.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: _____ Julia Ramit 5/5/2017

Analyst: _____

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

STANDARDS LOG

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CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
INV-161612C	Stannous Chloride	LSS	160624c	-	10/12/16			LSR	
INV-161013A	CITRIC ACID	ALFA AESAR	X15A002	99-100%	10/13/16			LSR	LIMS 8652
INV-161025A	Buffer pH 7	VWR	4609097	-	10/25/16	11/10/16	9/2018	LSR	
B	Buffer pH 4		4605A00	-		11/15/16	7/2018		
C	Conductivity Std, 1945 µS/cm		CC15045	-		11/21/16	6/15/17		
D	pH electrode storage Soln		A6189	-			7/2018		
E	electrode internal fill soln	Thermo Scientific	UWI	-					
INV-161026A	Sodium Hydroxide, pellet	MACRON	7708-06	-	10/26/16	12/6/16	12/6/19 12/12/18	LSR	NSA /NSA
B	Ammonium Hydroxide	VWR	7216050			12/12/16	6/2019		
C	Potassium Hydroxide	JT Baker	116209						
INV-161026D	Sodium Hydrogen Sulfate	Sigma Aldrich	MKBR4620V	-	10/26/16			LSR	#8668
INV-161028A	Ammonium Sulfate	LABCHEM	F258-19	-	10/28/16	12/9/16	12/9/19	LSR	/NSA
B				-		12/30/16	12/30/19		/NSA
C				-		11/3/17	1/13/20		NSA
D				-		4/25/17	1/25/20		NSA
INV-161031A	HEXANES	EMD Chemicals	56139	-	11/3/16	11/18/16	11/18/18	LSR	8686
B				-		11/29/16	11/30/18		8687
C				-			12/19/16		8688
D				-			12/2/16		8689
INV-161104A	Conductivity Std, 99899 µS/cm	LSS	CC15165	-	11/4/16	12/29/16	5/11/17	LSR	

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161202A	stannous chloride	LSS	160624-C	-	12/2/16			MG	
CINV-161205A	SODIUM CARBONATE	LSS	160324-A		12/5/16			LSR	#8739
CINV-161213A	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16	12/13/16	12/13/18	MG	
CINV-161213B	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16			MG	
CINV-161213B	Methyl Alcohol	Honeywell	4609PSH	-	12/19/16	12/20/16	3/2018	LSR	/RDA
CINV-161214A	Buffer, pH 10	VWR	CC153355	-	"	2/2/17	10/3/17	LSR	
" B	Conductivity Std, 1413 uS/cm	"	C692002	-	"	2/2/17	12/2017	LSR	
" C	Turbidity Std, 5.0 NTU	Amco Clear	160305OS	99.9%	12/20/16			MG	
CINV-161220A	Methyl Alcohol	Tedia							
" B	"	"	"	"	"	"	"	"	
" C	"	"	"	"	"	"	"	"	
" D	"	"	"	"	"	"	"	"	
" E	"	"	"	"	"	"	"	"	
" F	"	"	-	-	-				
" G	Stannous chloride	LSS	161128-A	-	-				
" H	"	"		-	-			-	
CINV-161220I	conductivity Std 10,000	VWR	CC150855	-	12/16/16	1/10/17	7/8/17	MG	
" J	" 100,000	"	CC15261	-	12/19/16	1/25/17	9/2/17	"	
CINV-161228A	Ammonium Hydroxide	VWR	72160850	-	12/28/16	1/3/17	1/3/19	MG	/RDA
161228B	"	"	"	-	"	2/7/17	2/7/19	"	/MBA
161228C	1-5 Diphenylcarbohydrazide	J.T Baker	140227	-	"			-	

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
INV-161228D	Magnesium Chloride Hexahydrate	VWR	16C524	–	12/28/16			MG	
E	Ammonium Sulfate	Lab chem	F256-19	–	12/28/16	2/9/17	2/9/20		RBA
F						4/5/17	4/5/20		RBA
G						3/14/17	3/14/20		RBA
H						4/20/17	4/20/20		RBA
I	Methanol	Omni soly	J6238	99.9%		3/9/17	3/9/19	–	RBA
J	Sulfuric Acid								
~~CINV 1/23~~ 1/23/17									
CINV170123A	Ammonium Persulfate	BDH	3056C514	98.0%	1/23/17	1/25/17	1/25/20	MG	
CINV170125A	Phosphoric acid	EMD	5C035619	85%	1/25/17	3/8/17	3/18/19	[illegible]	
B	Buffer, pH 4	VWR	4610A50	–		4/14/17	9/2018	LSR	
C	Buffer, pH 7		4611C60	–		4/17/17	10/2018	LSR	
D	Buffer, pH 7 (LCS)	Thermo Scientific	UQ1	–		3/9/17	10/2018	LSR	
E	Conductivity Std, 10,000 uS/cm	Ricca	2611936	–		4/24/17	10/2018	LSR	
F	Conductivity Std, 1413 uS/cm	Mettler Toledo	16G205006	–		3/2/17	7/20/18	LSR	
CINV170215A	Citric Acid Monohydrate	ALFA AESAR	S22C041	99-102%	2/15/17	2/17/17	2/17/20	[illegible]	
CINV170220A	Sodium Hydrogen Sulfate	Sigma - Aldrich	MKB05396V	–	–			HSC	
CINV-170227A	Stannous Chloride	LSS	161216-3C		2/27/16			MG	
CINV-170303A	Conductivity Std 9.76 uS/cm	VWR	CC15405	–	3/3/17	4/12/17	10/17/17	LSR	
CINV-170329A	Conductivity Std, 10,000 uS/cm	VWR	CC15548	–	3/29/17	4/27/17	1/9/18	MG	

Advanced Technology Laboratories-Las Vegas
Logbook #2

SM 4500 H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115055 **Instrument ID:** pH meter

ASSET #: N024107 **Analyst:** LSR

Date Analyzed: 5/5/2017

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?			X			
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/5/2017

2nd Level Reviewer: 5/18/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 05/04/17

Analyst: Rem/JT

Standard	Std ID	pH	Comments
Buffer 7			
Buffer 4			
Buffer 10			

	Sample ID	Matrix	pH	Comments
1	BASELINE - H_2O	H_2O	8.51 @ 15.1°C	
2	BASELINE SOIL	SOIL	8.31 @ 18.8°C	
3	@ 1 Hr	H_2O	6.95 @ 18.7°C	
4	@ 2.5 Hrs	"	7.09 @ 19.7°C	
5	@ 4.0 Hrs	"	7.23 @ 20.9°C	
6	@ 6.0 Hrs	"	7.26 @ 20.9°C	
7	@ 5th DAY			
8	@ 10th DAY		7.72 @ 20.1°C	
9	@ 20th DAY		7.99 @ 20.1°C	
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10			Accept: +/-0.1 pH units from expected value

(Circle one)

Date: 5/5/17 1040

Analyst: KSR

Standard	Std ID	pH	Comments
Buffer 7	DIW - 170125C	7.02 @ 18.8°C	SLOPE: 97.6%
Buffer 4	" 170125B	4.01 @ 18.8°C	
Buffer 10	" 161214A	10.05 @ 18.7°C	

	Sample ID	Matrix	pH	Comments
1	NO2H107-001C	H_2O	7.41 @ 17.2°C	
2	" 2C	"	7.26 @ 17.3°C	
3	" 2C DUP	"	7.27 @ 17.2°C	
4				
5				
6				
7				
8				Julia Ramit 5/5/2017
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10	DIW - 170125D	6.99 @ 20.6°C	Accept: +/-0.1 pH units from expected value

(Circle one)

Logbook #11

STANDARDS LOG

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161202A	stannous chloride	LSS	160624-C	-	12/2/16			MG	
CINV-161205A	SODIUM CARBONATE	LSS	160324-A	-	12/5/16			LSR	#8739
CINV-161213A	Methyl Alcohol	Honeywell	BP837	99.9%	12/13/16	12/13/16	8/13/18	MG	
CINV-161213B	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16			MG	
CINV-161214A	Buffer, pH 10	VWR	4609D54	-	12/14/16	12/30/16	3/20/18	LSR	/RBA
B	Conductivity Std, 1413 us/cm	"	CC153S5	-	"		10/3/17	LSR	
C	Turbidity Std, 50 NTU	Amco Clear	C692002	-	"		12/2017	LSR	
CINV-161220A	Methyl Alcohol	Tedia	160305308	99.9%	12/20/16			MG	
B	"	"	"	"	"	"	"	"	
C	"	"	"	"	"	"	"	"	
D	"	"	"	"	"	"	"	"	
E	"	"	"	"	"	"	"	"	
F	-	-	-	-	"	"	"	"	
G	stannous chloride	LSS	161128-A	-	"	"	"	"	
H	"	"		-	-	"	"	-	
CINV-161220I	conductivity Std 10,000	VWR	CC150S5	-	12/16/16	1/10/17	7/8/17	MG	
J	" 100,000	"	CC15261	-	12/19/16		9/2017	"	
CINV-161228A	Ammonium Hydroxide	VWR	7Z160850	-	12/28/16	1/6/17	1/3/19	MG	/RBA
161228B	"	"	"	-	"	"	"	"	
161228C	1-5 Diphenylcarbohydrazide	J.T Baker	190227	-	"	"	"	"	

Advanced Technology Laboratories-Las Vegas
Logbook #2

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
								MG	
NV-181225D	Magnesium Chloride Hexahydrate	VWR	16C524	-	12/28/16				
E	Ammonium Sulfate	Lab Chem	F258-19	-	12/28/16	2/9/17	2/9/20		/ MSA
F						4/5/17	4/5/20		MSA
G						3/14/17	3/14/20		MSA
H									
I	Methanol	Omni Solv	JU23E	99.9%		3/9/17	3/9/19	-	MSA
J	Sulfuric Acid								
~~CINV-170123A~~ MG 1/23/17									
CINV170123A	Ammonium Persulfate	BDH	3058C514	98.0%	1/23/17	1/25/17	1/25/20	MG	
CINV170125A	Phosphoric acid	EMD	5C0350 9	85%	1/25/17	3/8/17	3/18/19	MG	
B	Buffer, pH 4	VWR	4610A50	-		4/14/17	9/2018	MR	
C	Buffer, pH 7		4611C60	-		4/17/17	10/2018	MR	
D	Buffer, pH 7 (ICS)	Thermo Scientific	UQ1	-		3/9/17	10/2018	MR	
E	Conductivity Std, 10,000 µS/cm	Ricca	2611936	-			10/2018	MR	
F	Conductivity Std, 1413 µS/cm	Mettler Toledo	16G205001	-		3/2/17	7/20/18	MR	
CINV170215A	Citric Acid Monohydrate	Alfa Aesar	10220641	99-102%	2/15/17	2/17/17	2/17/20	MG	
CINV170220A	Sodium Hydrogen Sulfite	Sigma-Aldrich	MKBD5346V	-	-			HSC	
CINV-170227A	Stannous Chloride	LCS	161216-3C		2/27/16			MG	
CINV-170303A	Conductivity Std, 9.76 mS/cm	VWR	CC15405	-	3/3/17	4/12/17	10/17/17	MR	
CINV-170329A	Conductivity Std, 10,000 uS/cm	VWR	CC1554K	-	3/29/17			MG	

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62159 **Analyst:** LSR

ASSET #: N024107 **Date Analyzed:** 5/8/2017

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MS~~D, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/9/2017

2nd Level Reviewer: 5/18/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: Water

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N024107-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(61.2637–61.1944)*1000000}{30}$$

= 2310 mg/L

Reporting result in two significant figures,

TDS = 2300 mg/L

Julia Ramit 5/9/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/8/2017 1:00:27 P**
Prep End Date: **5/9/2017 11:35:00 A**

Reviewed/ Date: 5/18/2017
Initials/ Date: Lilia Ramit 5/9/2017

Prep Batch **62159** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**
Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62159	Water		100	☐	0	0	100	1.000		
MB-62159	Water		100	☐	0	0	100	1.000		
N024107-001C	Groundwater		30	☐	0	0	100	3.333		
N024107-002C	Groundwater		20	☐	0	0	100	5.000		
N024107-002C-DU	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8943	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170501A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/8/2017 1:00:27 P**
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 5/9/2017

Prep Batch **62159** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62159	Water	1685170501A	100	☐	0	0	100	1.000		
MB-62159	Water		100	☐	0	0	100	1.000		
N024107-001C	Groundwater	4100	100/30	☐	0	0	100	1.000		
N024107-002C	Groundwater	7680	100/20	☐	0	0	100	1.000		
N024107-002C-DU	Groundwater	1	100/20	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8943

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/8/17 1300 LS	MB 62159	100	74.6547 74.6543	74.6556 74.6555	
LA	LCS 62159	100	76.7946 76.7943	76.8497 76.8499	
CE	NO24107-001C	30	61.1947 61.1944	61.2637 61.2637	
A	2C	30	60.3364 60.3361	60.4236 60.4238	
AB	2C DUP	20	59.8584 59.8586	59.9470 59.9467	
Julia Ramit	5/9/2017				

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ORELAP/NELAP Cert 4046

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
5/9/2017									
MB-62159	100	74.6553	74.6555	2	1	2			MBLK
LCS-62159	100	76.7543	76.8499	956	1	956			LCS
N024107-001C	30	61.1944	61.2637	693	3.33333333	2310	4100	0.563	SAMP
N024107-002C	20	60.3361	60.4238	877	5	4385	7680	0.571	SAMP
N024107-002CDUP	20	59.8586	59.9467	881	5	4405	7680	0.574	DUP

Silvia Ramit 5/9/2017

STANDARDS LOG

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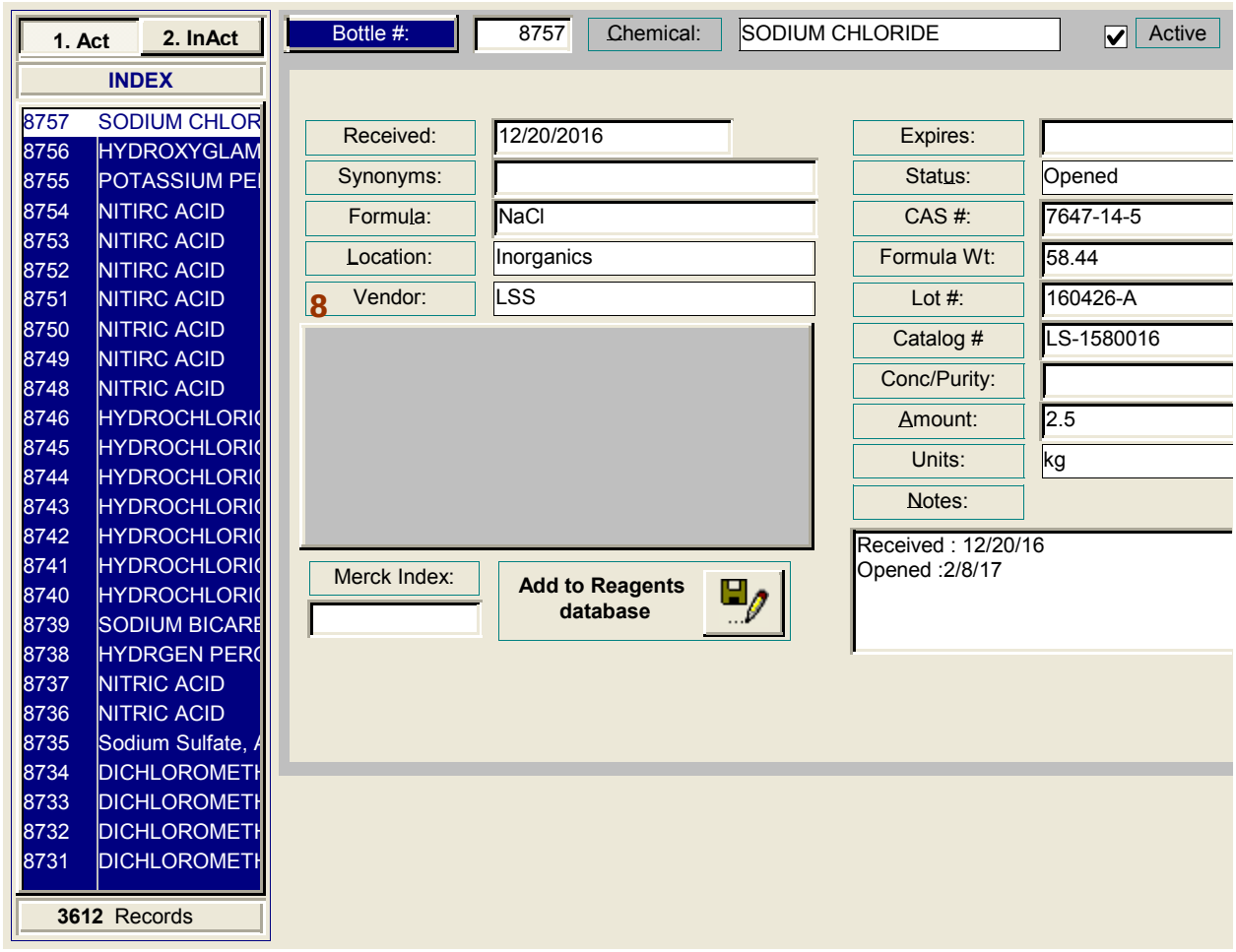
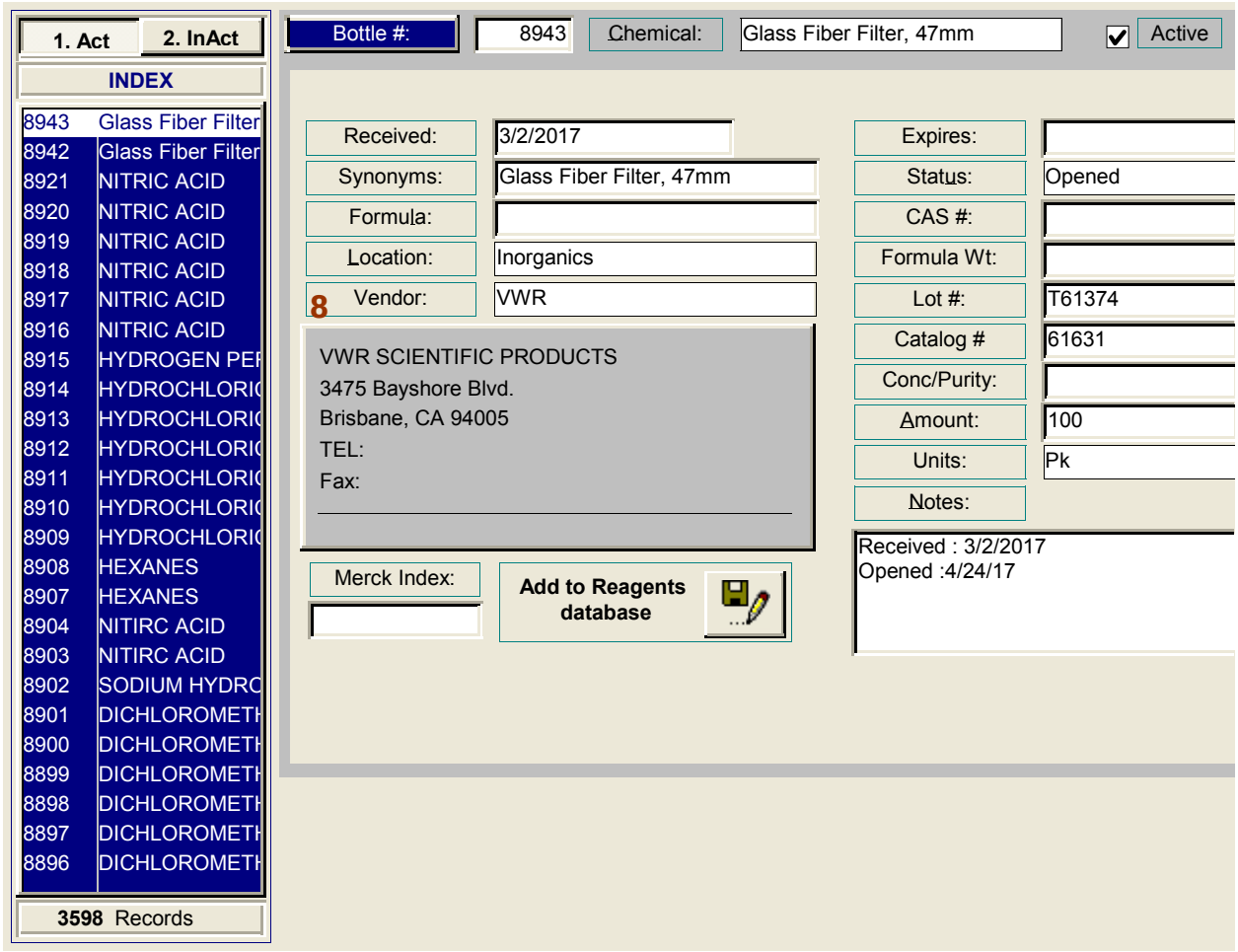
			STOCK INFORMATION	
Date	STD Name	Working STD Code	Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)
4/14/17	0.05 N Na_2CO_3	IWST170414B	CIW-160125B	-
1	0.05 N $NaHCO_3$	1 C	1 150601A	-
4/21/17	1000 ppm INORGANIC STD. 1° (Na_2CO_3)	IWST170421A	CIW-160125B	-
	1000 ppm INORGANIC STD 2° ($NaHCO_3$)	1 B	CIW150601A	-
4/26/17	0.05 N Na_2CO_3	IWST170426A	CIW-160125B	-
1	0.05 N $NaHCO_3$	1 B	1 150601A	-
4/26/17	1 ppm Perchlorate 1°	IWST170426C	~~CIW~~ new CSS 150714A2	1000
	1 ppm perchlorate 2°	1 D	1 17M181	1000
5/1/17	1000 ppm NaCl	IWST170501A	~~CIW~~ LIMS 8757	-

	PREPARATION INFORMATION								
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	100 mL	0.05N	H_2O		-	4/21/17	3/22/19		WR
	1	1	1	-	-	4/21/17	6/9/18		WR
	100mL	1000 ppm	H_2O	-	-	4/21/18	3/22/19		REB
	1	1	1	-	-	4/21/18	6/9/18		1
5	100 mL	0.05N	H_2O	-	-	3/3/17	3/22/19		WR
	1	1	1	-	-	1	6/9/18		WR
	100	1 ppm	H_2O	-	-	5/30/2017	5/2017		[illegible]
	100	1 ppm	1	-	-	10/20/17 4/2018	6/2018		1
	1000	1000 ppm	H_2O	-	-	5/1/18	2/8/20		WR
10									
15									
20									


1. Act
2. InAct
INDEX
8757 SODIUM CHLOR
8756 HYDROXYGLAM
8755 POTASSIUM PE
8754 NITIRC ACID
8753 NITIRC ACID
8752 NITIRC ACID
8751 NITIRC ACID
8750 NITRIC ACID
8749 NITIRC ACID
8748 NITRIC ACID
8746 HYDROCHLORIC
8745 HYDROCHLORIC
8744 HYDROCHLORIC
8743 HYDROCHLORIC
8742 HYDROCHLORIC
8741 HYDROCHLORIC
8740 HYDROCHLORIC
8739 SODIUM BICARE
8738 HYDRGEN PERC
8737 NITRIC ACID
8736 NITRIC ACID
8735 Sodium Sulfate, A
8734 DICHLOROMETH
8733 DICHLOROMETH
8732 DICHLOROMETH
8731 DICHLOROMETH
3612 Records
Bottle #:
8757
Chemical:
SODIUM CHLORIDE
Active
Received:
12/20/2016
Synonyms:
Formula:
NaCl
Location:
Inorganics
8
Vendor:
LSS
Merck Index:
Add to Reagents database
Expires:
Status:
Opened
CAS #:
7647-14-5
Formula Wt:
58.44
Lot #:
160426-A
Catalog #
LS-1580016
Conc/Purity:
Amount:
2.5
Units:
kg
Notes:
Received : 12/20/16
Opened :2/8/17


1. Act
2. InAct
INDEX
8943 Glass Fiber Filter
8942 Glass Fiber Filter
8921 NITRIC ACID
8920 NITRIC ACID
8919 NITRIC ACID
8918 NITRIC ACID
8917 NITRIC ACID
8916 NITRIC ACID
8915 HYDROGEN PER
8914 HYDROCHLORIC
8913 HYDROCHLORIC
8912 HYDROCHLORIC
8911 HYDROCHLORIC
8910 HYDROCHLORIC
8909 HYDROCHLORIC
8908 HEXANES
8907 HEXANES
8904 NITIRC ACID
8903 NITIRC ACID
8902 SODIUM HYDRO
8901 DICHLOROMETH
8900 DICHLOROMETH
8899 DICHLOROMETH
8898 DICHLOROMETH
8897 DICHLOROMETH
8896 DICHLOROMETH
3598 Records
Bottle #:
8943
Chemical:
Glass Fiber Filter, 47mm
Active
Received:
3/2/2017
Synonyms:
Glass Fiber Filter, 47mm
Formula:
Location:
Inorganics
8
Vendor:
VWR
VWR SCIENTIFIC PRODUCTS
3475 Bayshore Blvd.
Brisbane, CA 94005
TEL:
Fax:
Merck Index:
Add to Reagents database
Expires:
Status:
Opened
CAS #:
Formula Wt:
Lot #:
T61374
Catalog #
61631
Conc/Purity:
Amount:
100
Units:
Pk
Notes:
Received : 3/2/2017
Opened :4/24/17

EPA 200.7

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62172
ASSET #: N024107
Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/13/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ca in N024075-002E PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/18/2017 Date: —

2nd Level Reviewer 5/18/2017 Date: —

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62172
ASSET #: N024107

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/17/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)			X			
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)			X			
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For Na run only.
%Rec of Na in N024107-001B PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/18/2017 Date: —

2nd Level Reviewer 5/18/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.7
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the ~~Boron~~ Iron concentration, in ug/L , in the original sample as follows:

~~Boron~~ Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N024107-001B** , the concentration ir ug/L is calculated as follows:

~~Boron~~ Iron , ug/L = 0.27837 * 1 * (25/25) * 1000

~~Boron~~ Iron , ug/L = 278.37

Reporting results in two significant figures,

~~Boron~~ Iron , ug/L = 280

for 5/18/2017

% RSD SUMMARY

RSD SUMMARY: 170513A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	7.035	15	PASS
Standard1	ICAL	1	Ca	0.2	7.74	15	PASS
Standard2	ICAL	1	Ca	1	1.15	15	PASS
Standard3	ICAL	1	Ca	2	1.15	15	PASS
Standard4	ICAL	1	Ca	5	0.89	15	PASS
Standard5	ICAL	1	Ca	7.5	0.63	15	PASS
Standard6	ICAL	1	Ca	10	0.7	15	PASS
Standard7	ICAL	1	Ca	20	0.32	15	PASS
ICV	ICV	1	Ca	10.29	0.17	15	PASS
ICB	ICB	1	Ca	-0.039	46.68	15	<PQL
LLICV	CCV1	1	Ca	0.22	1.8	20	PASS
ICSA1	ICSA	1	Ca	477.76	0.068	15	PASS
ICSAB1	ICSAB	1	Ca	517.32	0.12	15	PASS
MB-62172	MBLK	1	Ca	-0.028	62.41	15	<PQL
LCS1-62172	LCS	1	Ca	9.72	0.68	15	PASS
N024075-002E	SAMP	1	Ca	122.73	0.18	15	PASS
N024075-002E	SAMP	5	Ca	25.22	0.55	15	PASS
N024075-002E-PS	PS	1	Ca	139.8	0.88	15	PASS
N024075-002E-MS1	MS	1	Ca	141.23	1.42	15	PASS
N024075-002E-MSD1	MSD	1	Ca	141.1	0.75	15	PASS
N024107-001B	SAMP	1	Ca	116.54	0.45	15	PASS
N024107-002B	SAMP	1	Ca	226.35	0.52	15	PASS
N024129-001A	SAMP	1	Ca	31.92	0.38	15	PASS
CCV1	CCV	1	Ca	10.51	0.24	15	PASS
CCB1	CCB	1	Ca	0.023	100.039	15	<PQL
N024129-002A	SAMP	1	Ca	15.046	0.41	15	PASS
N024129-003A	SAMP	1	Ca	6.97	0.18	15	PASS
N024130-001A	SAMP	1	Ca	16.041	0.44	15	PASS
N024130-002A	SAMP	1	Ca	16.77	0.26	15	PASS
N024130-003A	SAMP	1	Ca	14.8	0.21	15	PASS
N024130-004A	SAMP	1	Ca	25.28	0.45	15	PASS
CCV2	CCV	1	Ca	10.41	0.85	15	PASS
CCB2	CCB	1	Ca	0.045	56.42	15	<PQL
LLCCV1	CCV2	1	Ca	0.26	7.5	20	PASS
ICSA2	ICSA	1	Ca	484.97	0.036	15	PASS
ICSAB2	ICSAB	1	Ca	525.8	0.22	15	PASS
CalBlk	IBLK	1	Fe	0	10.79	15	PASS
Standard1	ICAL	1	Fe	0.02	0.98	15	PASS
Standard2	ICAL	1	Fe	0.05	1.2	15	PASS
Standard3	ICAL	1	Fe	2	0.4	15	PASS
Standard4	ICAL	1	Fe	5	1.032	15	PASS
Standard5	ICAL	1	Fe	7.5	0.89	15	PASS

RSD SUMMARY: 170513A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
Standard6	ICAL	1	Fe	10	0.34	15	PASS
Standard7	ICAL	1	Fe	20	0.045	15	PASS
ICV	ICV	1	Fe	10.45	0.11	15	PASS
ICB	ICB	1	Fe	0.00089	143.91	15	<PQL
LLICV	CCV1	1	Fe	0.024	1.24	20	PASS
ICSA1	ICSA	1	Fe	168.79	0.46	15	PASS
ICSAB1	ICSAB	1	Fe	177.24	0.18	15	PASS
MB-62172	MBLK	1	Fe	0.013	30.7	15	<PQL
LCS1-62172	LCS	1	Fe	0.11	0.78	15	PASS
N024075-002E	SAMP	1	Fe	0.016	7.65	15	PASS
N024075-002E	SAMP	5	Fe	0.0031	4.66	15	PASS
N024075-002E-PS	PS	1	Fe	0.12	0.29	15	PASS
N024075-002E-MS1	MS	1	Fe	0.11	0.93	15	PASS
N024075-002E-MSD1	MSD	1	Fe	0.11	1.4	15	PASS
N024107-001B	SAMP	1	Fe	0.28	0.35	15	PASS
N024107-002B	SAMP	1	Fe	0.00049	136.45	15	<PQL
N024129-001A	SAMP	1	Fe	0.72	0.43	15	PASS
CCV1	CCV	1	Fe	10.56	0.35	15	PASS
CCB1	CCB	1	Fe	-0.00072	123.081	15	<PQL
N024129-002A	SAMP	1	Fe	0.16	0.56	15	PASS
N024129-003A	SAMP	1	Fe	0.45	0.27	15	PASS
N024130-001A	SAMP	1	Fe	0.18	0.44	15	PASS
N024130-002A	SAMP	1	Fe	0.22	0.33	15	PASS
N024130-003A	SAMP	1	Fe	0.35	0.45	15	PASS
N024130-004A	SAMP	1	Fe	0.34	0.53	15	PASS
CCV2	CCV	1	Fe	10.38	0.5	15	PASS
CCB2	CCB	1	Fe	-0.0007	131.69	15	<PQL
LLCCV1	CCV2	1	Fe	0.022	1.5	20	PASS
ICSA2	ICSA	1	Fe	167.84	0.46	15	PASS
ICSAB2	ICSAB	1	Fe	177.89	0.73	15	PASS
CalBlk	IBLK	1	Mg	0	11.045	15	PASS
Standard1	ICAL	1	Mg	0.1	0.24	15	PASS
Standard2	ICAL	1	Mg	1	0.47	15	PASS
Standard3	ICAL	1	Mg	2	0.38	15	PASS
Standard4	ICAL	1	Mg	5	1.0044	15	PASS
Standard5	ICAL	1	Mg	7.5	0.98	15	PASS
Standard6	ICAL	1	Mg	10	0.29	15	PASS
Standard7	ICAL	1	Mg	20	0.2	15	PASS
ICV	ICV	1	Mg	10.39	0.12	15	PASS
ICB	ICB	1	Mg	-0.0025	20.2	15	<PQL
LLICV	CCV1	1	Mg	0.12	0.93	20	PASS
ICSA1	ICSA	1	Mg	491.31	0.4	15	PASS

RSD SUMMARY: 170513A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB1	ICSAB	1	Mg	517.87	0.21	15	PASS
MB-62172	MBLK	1	Mg	0.014	6.84	15	PASS
LCS1-62172	LCS	1	Mg	10.34	0.69	15	PASS
N024075-002E	SAMP	1	Mg	28.82	0.081	15	PASS
N024075-002E	SAMP	5	Mg	6.31	0.65	15	PASS
N024075-002E-PS	PS	1	Mg	39.43	0.12	15	PASS
N024075-002E-MS1	MS	1	Mg	39.69	0.13	15	PASS
N024075-002E-MSD1	MSD	1	Mg	39.69	0.12	15	PASS
N024107-001B	SAMP	1	Mg	26.36	0.039	15	PASS
N024107-002B	SAMP	1	Mg	31.21	0.02	15	PASS
N024129-001A	SAMP	1	Mg	20.29	0.13	15	PASS
CCV1	CCV	1	Mg	10.41	0.32	15	PASS
CCB1	CCB	1	Mg	-0.0023	46.94	15	<PQL
N024129-002A	SAMP	1	Mg	2.46	0.68	15	PASS
N024129-003A	SAMP	1	Mg	1.014	0.37	15	PASS
N024130-001A	SAMP	1	Mg	1.76	0.96	15	PASS
N024130-002A	SAMP	1	Mg	1.9	0.55	15	PASS
N024130-003A	SAMP	1	Mg	3.24	0.48	15	PASS
N024130-004A	SAMP	1	Mg	7.63	0.21	15	PASS
CCV2	CCV	1	Mg	10.18	0.44	15	PASS
CCB2	CCB	1	Mg	-0.0032	29.56	15	<PQL
LLCCV1	CCV2	1	Mg	0.12	0.52	20	PASS
ICSA2	ICSA	1	Mg	482	0.39	15	PASS
ICSAB2	ICSAB	1	Mg	515.15	0.88	15	PASS

RSD SUMMARY: 170517B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	29.42	15	<PQL
Standard1	ICAL	1	Na	0.1	5.54	15	PASS
Standard2	ICAL	1	Na	1	0.43	15	PASS
Standard3	ICAL	1	Na	5	0.13	15	PASS
Standard4	ICAL	1	Na	10	0.35	15	PASS
Standard5	ICAL	1	Na	20	0.23	15	PASS
Standard6	ICAL	1	Na	40	0.19	15	PASS
ICV	ICV	1	Na	9.97	0.26	15	PASS
ICB	ICB	1	Na	-0.0006	304.29	15	<PQL
ICSA1	ICSA	1	Na	-0.012	49.062	15	<PQL
ICSAB1	ICSAB	1	Na	10.053	0.17	15	PASS
MB-62172	MBLK	1	Na	-0.014	26.65	15	<PQL
LCS2-62172	LCS	1	Na	-0.0063	89.19	15	<PQL
N024107-001B	SAMP	5	Na	8.37	0.21	15	PASS
MB-62172	MBLK	1	Na	-0.014	26.45	15	<PQL
LCS2-62172	LCS	1	Na	20.73	0.39	15	PASS
N024107-001B	SAMP	5	Na	132.95	0.15	15	PASS
N024107-002B	SAMP	5	Na	281.1	1.089	15	PASS
N024107-001B	SAMP	50	Na	12.88	0.28	15	PASS
N024107-001B	SAMP	250	Na	2.62	0.4	15	PASS
CCV1	CCV	1	Na	17.046	0.16	15	PASS
CCV1	CCV	1	Na	10.17	0.12	15	PASS
CCB1	CCB	1	Na	-0.0092	73.49	15	<PQL
N024107-001B-PS	PS	50	Na	14.49	0.29	15	PASS
N024107-001B-MS2	MS	50	Na	14.44	0.22	15	PASS
N024107-001B-MSD2	MSD	50	Na	14.46	0.34	15	PASS
N024107-002B	SAMP	50	Na	28.56	0.23	15	PASS
CCV2	CCV	1	Na	10.19	0.11	15	PASS
CCB2	CCB	1	Na	-0.01	52.32	15	<PQL
ICSA2	ICSA	1	Na	-0.012	23.26	15	<PQL
ICSAB2	ICSAB	1	Na	10.16	0.28	15	PASS

NR

ANALYSIS RUN LOG

INJECTION LOG: 170513A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-170306C
Standard3	MWST-170306F,5<50mL
Standard4	MWST-170306F,12.5<50mL
Standard5	MWST-170306F,15<40mL
Standard6	MWST-170306F,25<50mL
Standard7	MWST-170306F
ICV	MWST-170430G
CCV	MWST-170306F,25<50mL
ICSA/ICSAB	MWST-170228D/ MWST-170430H
Int. Std. (Y)	MSST-170404Q/R
PS Spike	MWST-170430J/-170430B;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/13/2017	10:09:07 AM
2	Standard1	ICAL	1	05/13/2017	10:13:56 AM
3	Standard2	ICAL	1	05/13/2017	10:18:45 AM
4	Standard3	ICAL	1	05/13/2017	10:23:34 AM
5	Standard4	ICAL	1	05/13/2017	10:28:26 AM
6	Standard5	ICAL	1	05/13/2017	10:34:19 AM
7	Standard6	ICAL	1	05/13/2017	10:40:10 AM
8	Standard7	ICAL	1	05/13/2017	10:46:01 AM
9	ICV	ICV	1	05/13/2017	10:51:26 AM
1	ICB	ICB	1	05/13/2017	10:57:19 AM
2	LLICV	CCV1	1	05/13/2017	11:02:08 AM
4	ICSA1	ICSA	1	05/13/2017	11:06:59 AM
5	ICSAB1	ICSAB	1	05/13/2017	11:13:02 AM
38	MB-62172	MBLK	1	05/13/2017	11:19:05 AM
39	LCS1-62172	LCS	1	05/13/2017	11:23:56 AM
40	N024075-002E	SAMP	1	05/13/2017	11:29:47 AM
41	N024075-002E	SAMP	5	05/13/2017	11:35:38 AM
42	N024075-002E-PS	PS	1	05/13/2017	11:40:27 AM
43	N024075-002E-MS1	MS	1	05/13/2017	11:46:18 AM
44	N024075-002E-MSD1	MSD	1	05/13/2017	11:52:09 AM
45	N024107-001B	SAMP	1	05/13/2017	11:58:01 AM
46	N024107-002B	SAMP	1	05/13/2017	12:03:53 PM
47	N024129-001A	SAMP	1	05/13/2017	12:09:45 PM
7	CCV1	CCV	1	05/13/2017	12:14:37 PM
1	CCB1	CCB	1	05/13/2017	12:20:29 PM
48	N024129-002A	SAMP	1	05/13/2017	12:25:19 PM
49	N024129-003A	SAMP	1	05/13/2017	12:30:10 PM
50	N024130-001A	SAMP	1	05/13/2017	12:35:01 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N024130-002A	SAMP	1	05/13/2017	12:39:51 PM
52	N024130-003A	SAMP	1	05/13/2017	12:44:41 PM
53	N024130-004A	SAMP	1	05/13/2017	12:49:31 PM
7	CCV2	CCV	1	05/13/2017	12:54:22 PM
1	CCB2	CCB	1	05/13/2017	01:00:13 PM
2	LLCCV1	CCV2	1	05/13/2017	01:05:01 PM
4	ICSA2	ICSA	1	05/13/2017	01:09:50 PM
5	ICSAB2	ICSAB	1	05/13/2017	01:15:54 PM
98	MB-62187	MBLK	1	05/13/2017	01:27:36 PM
99	LCS-62187	LCS	1	05/13/2017	01:32:27 PM
100	N024136-001B	SAMP	1	05/13/2017	01:38:20 PM
101	N024136-001B	SAMP	5	05/13/2017	01:43:11 PM
102	N024136-001B-PS	PS	1	05/13/2017	01:48:02 PM
103	N024136-001B-MS	MS	1	05/13/2017	01:53:55 PM
104	N024136-001B-MSD	MSD	1	05/13/2017	01:59:49 PM
105	N024136-002B	SAMP	1	05/13/2017	02:05:42 PM
106	N024136-003B	SAMP	1	05/13/2017	02:10:34 PM
107	N024136-004B	SAMP	1	05/13/2017	02:15:25 PM
7	CCV3	CCV	1	05/13/2017	02:21:16 PM
1	CCB3	CCB	1	05/13/2017	02:26:40 PM
108	N024136-005B	SAMP	1	05/13/2017	02:31:28 PM
109	N024136-006B	SAMP	1	05/13/2017	02:37:22 PM
110	N024136-007B	SAMP	1	05/13/2017	02:42:13 PM
111	N024136-008B	SAMP	1	05/13/2017	02:47:07 PM
112	N024160-001B	SAMP	1	05/13/2017	02:51:58 PM
113	N024160-002B	SAMP	1	05/13/2017	02:56:51 PM
114	N024160-003B	SAMP	1	05/13/2017	03:01:44 PM
115	N024160-004B	SAMP	1	05/13/2017	03:06:38 PM
116	N024160-005B	SAMP	1	05/13/2017	03:11:30 PM
117	N024160-006B	SAMP	1	05/13/2017	03:16:23 PM
7	CCV4	CCV	1	05/13/2017	03:21:15 PM
1	CCB4	CCB	1	05/13/2017	03:27:07 PM
118	N024160-007B	SAMP	1	05/13/2017	03:31:56 PM
119	N024160-008B	SAMP	1	05/13/2017	03:37:48 PM
120	N024160-009B	SAMP	1	05/13/2017	03:43:41 PM
121	N024160-010B	SAMP	1	05/13/2017	03:49:35 PM
122	N024160-011B	SAMP	1	05/13/2017	03:54:29 PM
123	N024160-012B	SAMP	1	05/13/2017	04:00:22 PM
124	MB-62198	MBLK	1	05/13/2017	04:05:43 PM
125	LCS-62198	LCS	1	05/13/2017	04:10:05 PM
126	N024160-013B	SAMP	1	05/13/2017	04:15:59 PM
127	N024160-013B	SAMP	5	05/13/2017	04:21:11 PM
7	CCV5	CCV	1	05/13/2017	04:26:04 PM
1	CCB5	CCB	1	05/13/2017	04:31:55 PM
2	LLCCV2	CCV2	1	05/13/2017	04:36:44 PM
4	ICSA3	ICSA	1	05/13/2017	04:41:33 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
8	ICSAB3	ICSAB	1	05/13/2017	04:47:35 PM
128	N024160-013B-PS	PS	1	05/13/2017	04:53:35 PM
129	N024160-013B-MS	MS	1	05/13/2017	04:59:30 PM
130	N024160-013B-MSD	MSD	1	05/13/2017	05:05:23 PM
131	N024160-014B	SAMP	1	05/13/2017	05:11:18 PM
132	N024160-015B	SAMP	1	05/13/2017	05:16:11 PM
133	N024160-016B	SAMP	1	05/13/2017	05:21:05 PM
134	N024184-001B	SAMP	1	05/13/2017	05:25:58 PM
135	N024184-002B	SAMP	1	05/13/2017	05:30:52 PM
136	N024184-003B	SAMP	1	05/13/2017	05:35:46 PM
137	N024184-004B	SAMP	1	05/13/2017	05:40:39 PM
7	CCV6	CCV	1	05/13/2017	05:45:33 PM
1	CCB6	CCB	1	05/13/2017	05:51:25 PM
138	N024184-005B	SAMP	1	05/13/2017	06:12:36 PM
139	N024184-006B	SAMP	1	05/13/2017	06:17:30 PM
140	N024184-007B	SAMP	1	05/13/2017	06:22:24 PM
141	N024184-008B	SAMP	1	05/13/2017	06:27:18 PM
142	N024184-009B	SAMP	1	05/13/2017	06:32:11 PM
143	N024184-010B	SAMP	1	05/13/2017	06:37:05 PM
144	N024184-011B	SAMP	1	05/13/2017	06:41:59 PM
145	N024184-012B	SAMP	1	05/13/2017	06:46:53 PM
146	N024184-013B	SAMP	1	05/13/2017	06:51:46 PM
7	CCV7	CCV	1	05/13/2017	06:56:40 PM
1	CCB7	CCB	1	05/13/2017	07:02:32 PM
2	LLCCV3	CCV2	1	05/13/2017	07:07:21 PM
4	ICSA4	ICSA	1	05/13/2017	07:12:10 PM
8	ICSAB4	ICSAB	1	05/13/2017	07:17:59 PM
8	ICSA4	ICSA	1	05/13/2017	08:24:07 PM
4	ICSAB4	ICSAB	1	05/13/2017	08:30:08 PM
5	ICSAB4	ICSAB	1	05/13/2017	08:36:38 PM

INJECTION LOG: 170517B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170428A,0.025<50mL
Standard2	MWST-170428A,0.25<50mL
Standard3	MWST-170428A,1.25<50mL
Standard4	MWST-170428A,2.5<50mL
Standard5	MWST-170428A,5<50mL
Standard6	MWST-170428A,10<50mL
ICV	MWST-170228B
CCV	MWST-170428A,2.5<50mL
ICSA/ICSAB	MWST-170228D/-170428B
Int. Std. (Sc):	MSST-170404Q/R
PS Spike	MSST-130329D/-130329E/-170116A

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/17/2017	01:54:45 PM
26	Standard1	ICAL	1	05/17/2017	01:58:03 PM
27	Standard2	ICAL	1	05/17/2017	02:01:20 PM
28	Standard3	ICAL	1	05/17/2017	02:04:37 PM
29	Standard4	ICAL	1	05/17/2017	02:08:24 PM
30	Standard5	ICAL	1	05/17/2017	02:12:12 PM
31	Standard6	ICAL	1	05/17/2017	02:16:00 PM
32	ICV	ICV	1	05/17/2017	02:19:52 PM
1	ICB	ICB	1	05/17/2017	02:23:41 PM
33	ICSA1	ICSA	1	05/17/2017	02:26:59 PM
34	ICSAB1	ICSAB	1	05/17/2017	02:30:17 PM
38	MB-62172	MBLK	1	05/17/2017	02:34:06 PM
39	LCS2-62172	LCS	1	05/17/2017	02:37:23 PM
40	N024107-001B	SAMP	5	05/17/2017	02:40:40 PM
38	MB-62172	MBLK	1	05/17/2017	02:44:44 PM
39	LCS2-62172	LCS	1	05/17/2017	02:48:00 PM
40	N024107-001B	SAMP	5	05/17/2017	02:51:49 PM
41	N024107-002B	SAMP	5	05/17/2017	02:56:08 PM
42	N024107-001B	SAMP	50	05/17/2017	03:00:57 PM
43	N024107-001B	SAMP	250	05/17/2017	03:06:45 PM
8	CCV1	CCV	1	05/17/2017	03:10:03 PM
29	CCV1	CCV	1	05/17/2017	03:13:24 PM
1	CCB1	CCB	1	05/17/2017	03:17:12 PM
44	N024107-001B-PS	PS	50	05/17/2017	03:23:20 PM
45	N024107-001B-MS2	MS	50	05/17/2017	03:26:38 PM
46	N024107-001B-MSD2	MSD	50	05/17/2017	03:29:57 PM
47	N024107-002B	SAMP	50	05/17/2017	03:33:17 PM
29	CCV2	CCV	1	05/17/2017	03:36:36 PM
1	CCB2	CCB	1	05/17/2017	03:40:24 PM

NR

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
33	ICSA2	ICSA	1	05/17/2017	03:43:41 PM
34	ICSAB2	ICSAB	1	05/17/2017	03:46:58 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/10/2017 8:00:00**
Prep End Date: **5/10/2017 11:00:00**
Prep Batch **62172** Prep Code: **200.7_PR**

Reviewed/ Date: 5/18/2017
Initials/ Date: 5/18/2017
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-51**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-62172	Aqueous		25	☐	0	0	25	1.000		
LCS2-62172	Aqueous		25	☐	0	0	25	1.000		
MB-62172	Aqueous		25	☐	0	0	25	1.000		
N024075-002E	Water	<2	25	☐	0	0	25	1.000		
N024075-002E-MS	Water	<2	25	☐	0	0	25	1.000		
N024075-002E-MS	Water	<2	25	☐	0	0	25	1.000		
N024107-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024107-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024107-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024107-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024129-001A	Water	<2	25	☐	0	0	25	1.000		
N024129-002A	Water	<2	25	☐	0	0	25	1.000		
N024129-003A	Water	<2	25	☐	0	0	25	1.000		
N024130-001A	Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8921	NITRIC ACID
8994	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/10/2017 8:00:00**
Prep End Date: **5/10/2017 11:00:00**
Prep Batch **62172** Prep Code: **200.7_PR**

Reviewed/ Date: 5/18/2017
Initials/ Date: 5/18/2017
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-51**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024130-002A	Water	<2	25	☐	0	0	25	1.000		
N024130-003A	Water	<2	25	☐	0	0	25	1.000		
N024130-004A	Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8921	NITRIC ACID
8994	HYDROCHLORIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170513A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	05/13/2017	10:09:07 AM	Mg	279.079	77	0.00	mg/L	
Standard1	05/13/2017	10:13:56 AM	Mg	279.079	1500	0.1000	mg/L	
Standard2	05/13/2017	10:18:45 AM	Mg	279.079	13275	1.000	mg/L	
Standard3	05/13/2017	10:23:34 AM	Mg	279.079	25715	2.000	mg/L	
Standard4	05/13/2017	10:28:26 AM	Mg	279.079	63848	5.000	mg/L	
Standard5	05/13/2017	10:34:19 AM	Mg	279.079	95776	7.500	mg/L	
Standard6	05/13/2017	10:40:10 AM	Mg	279.079	130895	10.000	mg/L	
Standard7	05/13/2017	10:46:01 AM	Mg	279.079	249356	20.000	mg/L	0.9998
Calcium								
CalBlk	05/13/2017	10:09:07 AM	Ca	227.546	-120	0.00	mg/L	
Standard1	05/13/2017	10:13:56 AM	Ca	227.546	74	0.2000	mg/L	
Standard2	05/13/2017	10:18:45 AM	Ca	227.546	307	1.000	mg/L	
Standard3	05/13/2017	10:23:34 AM	Ca	227.546	624	2.000	mg/L	
Standard4	05/13/2017	10:28:26 AM	Ca	227.546	1583	5.000	mg/L	
Standard5	05/13/2017	10:34:19 AM	Ca	227.546	2407	7.500	mg/L	
Standard6	05/13/2017	10:40:10 AM	Ca	227.546	3234	10.000	mg/L	
Standard7	05/13/2017	10:46:01 AM	Ca	227.546	6341	20.000	mg/L	1.0000
Iron								
CalBlk	05/13/2017	10:09:07 AM	Fe	273.953	121	0.00	mg/L	
Standard1	05/13/2017	10:13:56 AM	Fe	273.953	616	0.0200	mg/L	
Standard2	05/13/2017	10:18:45 AM	Fe	273.953	1978	0.050	mg/L	
Standard3	05/13/2017	10:23:34 AM	Fe	273.953	52678	2.000	mg/L	
Standard4	05/13/2017	10:28:26 AM	Fe	273.953	131054	5.000	mg/L	
Standard5	05/13/2017	10:34:19 AM	Fe	273.953	196981	7.500	mg/L	
Standard6	05/13/2017	10:40:10 AM	Fe	273.953	268905	10.000	mg/L	
Standard7	05/13/2017	10:46:01 AM	Fe	273.953	509137	20.000	mg/L	0.9998

INITIAL CALIBRATION SUMMARY: 170517B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	05/17/2017	01:54:45 PM	Na	589.594	39	0.00	mg/L	
Standard1	05/17/2017	01:58:03 PM	Na	589.594	233	0.1000	mg/L	
Standard2	05/17/2017	02:01:20 PM	Na	589.594	1966	1.000	mg/L	
Standard3	05/17/2017	02:04:37 PM	Na	589.594	9726	5.000	mg/L	
Standard4	05/17/2017	02:08:24 PM	Na	589.594	19283	10.000	mg/L	
Standard5	05/17/2017	02:12:12 PM	Na	589.594	38484	20.000	mg/L	
Standard6	05/17/2017	02:16:00 PM	Na	589.594	77008	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **115214**
Client ID: **ICV** Batch ID: **R115214** TestNo: **EPA 200.7** Analysis Date: **5/13/2017** SeqNo: **2643282**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10284.929	500	10000	0	103	90	110				
Iron	10445.359	20	10000	0	104	90	110				
Magnesium	10389.731	100	10000	0	104	90	110				

Sample ID **LLICV** SampType: **CCV1** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **115214**
Client ID: **ZZZZZZ** Batch ID: **R115214** TestNo: **EPA 200.7** Analysis Date: **5/13/2017** SeqNo: **2643284**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	217.107	500	200.0	0	109	80	120				
Iron	24.006	20	20.00	0	120	80	120				
Magnesium	116.953	100	100.0	0	117	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **115214**
Client ID: **CCV** Batch ID: **R115214** TestNo: **EPA 200.7** Analysis Date: **5/13/2017** SeqNo: **2643297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10508.583	500	10000	0	105	90	110				
Iron	10562.111	20	10000	0	106	90	110				
Magnesium	10406.866	100	10000	0	104	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **200.7_WDPG** Units: **µg/L** Prep Date: RunNo: **115214**
Client ID: **CCV** Batch ID: **R115214** TestNo: **EPA 200.7** Analysis Date: **5/13/2017** SeqNo: **2643305**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10413.596	500	10000	0	104	90	110				
Iron	10383.421	20	10000	0	104	90	110				
Magnesium	10184.301	100	10000	0	102	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **ZZZZZZ**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	260.608	500	200.0	0	130	70	130				
Iron	22.489	20	20.00	0	112	70	130				
Magnesium	115.355	100	100.0	0	115	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **ICV**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9973.507	500	10000	0	99.7	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **CCV**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10173.007	500	10000	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **CCV**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10192.751	500	10000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **ICB**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-38.817051	500									
Iron	0.886	20									
Magnesium	-2.47034	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **CCB**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	22.764	500									
Iron	-0.71852	20									
Magnesium	-2.285679	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **CCB**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	45.085	500									
Iron	-0.696959	20									
Magnesium	-3.157717	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **ICB**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-0.59618	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **CCB**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-9.165213	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **CCB**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-9.991647	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **ICSA**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643285**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	489874.445	50	500000	0	98.0	80	120				
Calcium	477760.911	500	500000	0	95.6	80	120				
Iron	168786.674	20	200000	0	84.4	80	120				
Magnesium	491307.583	100	500000	0	98.3	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **ICSAB**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643286**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	524020.192	50	500000	0	105	80	120				
Calcium	517321.908	500	500000	0	103	80	120				
Iron	177239.099	20	200000	0	88.6	80	120				
Magnesium	517869.652	100	500000	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **ICSA**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	492231.017	50	500000	0	98.4	80	120				
Calcium	484973.049	500	500000	0	97.0	80	120				
Iron	167838.657	20	200000	0	83.9	80	120				
Magnesium	481997.143	100	500000	0	96.4	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **ICSAB**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	528474.102	50	500000	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **ICSAB**	Batch ID: **R115214**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	525801.328	500	500000	0	105	80	120				
Iron	177886.270	20	200000	0	88.9	80	120				
Magnesium	515149.865	100	500000	0	103	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **ICSA**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-12.113829	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **ICSAB**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10053.157	500	10000	0	101	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **ICSA**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-11.587376	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **ICSAB**	Batch ID: **R115304**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648145**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10163.235	500	10000	0	102	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170513A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.065	106.54	65-125	PASS
Standard2	ICAL	1	1.058	105.83	65-125	PASS
Standard3	ICAL	1	1.083	108.26	65-125	PASS
Standard4	ICAL	1	1.096	109.64	65-125	PASS
Standard5	ICAL	1	1.11	110.65	65-125	PASS
Standard6	ICAL	1	1.039	103.93	65-125	PASS
Standard7	ICAL	1	1.034	103.38	65-125	PASS
ICV	ICV	1	1.033	103.33	65-125	PASS
ICB	ICB	1	1.0042	100.42	65-125	PASS
LLICV	CCV1	1	1.08	108.03	65-125	PASS
ICSA1	ICSA	1	1.034	103.41	65-125	PASS
ICSAB1	ICSAB	1	0.9	89.86	65-125	PASS
MB-62172	MBLK	1	1.0054	100.54	65-125	PASS
LCS1-62172	LCS	1	1.069	106.89	65-125	PASS
N024075-002E	SAMP	1	0.95	95.005	65-125	PASS
N024075-002E	SAMP	5	0.98	98.15	65-125	PASS
N024075-002E-PS	PS	1	0.96	96.28	65-125	PASS
N024075-002E-MS1	MS	1	0.95	95.045	65-125	PASS
N024075-002E-MSD1	MSD	1	0.95	95.35	65-125	PASS
N024107-001B	SAMP	1	1.024	102.45	65-125	PASS
N024107-002B	SAMP	1	0.98	97.58	65-125	PASS
N024129-001A	SAMP	1	1.15	114.77	65-125	PASS
CCV1	CCV	1	1.12	111.86	65-125	PASS
CCB1	CCB	1	1.11	110.54	65-125	PASS
N024129-002A	SAMP	1	1.2	119.91	65-125	PASS
N024129-003A	SAMP	1	1.2	119.62	65-125	PASS
N024130-001A	SAMP	1	1.17	117.1	65-125	PASS
N024130-002A	SAMP	1	1.19	118.88	65-125	PASS
N024130-003A	SAMP	1	1.22	121.87	65-125	PASS
N024130-004A	SAMP	1	1.18	117.53	65-125	PASS
CCV2	CCV	1	1.13	113.22	65-125	PASS
CCB2	CCB	1	1.11	110.73	65-125	PASS
LLCCV1	CCV2	1	1.18	118.01	65-125	PASS
ICSA2	ICSA	1	1.1	110.43	65-125	PASS
ICSAB2	ICSAB	1	0.96	95.97	65-125	PASS

INTERNAL STANDARD: 170517B

Instrument ID: ICP-02

Sample Name	Type	DF	Scandium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.98	98.32	65-125	PASS
Standard2	ICAL	1	0.98	98.12	65-125	PASS
Standard3	ICAL	1	0.99	99.16	65-125	PASS
Standard4	ICAL	1	0.99	99.42	65-125	PASS
Standard5	ICAL	1	0.99	98.66	65-125	PASS
Standard6	ICAL	1	0.99	98.84	65-125	PASS
ICV	ICV	1	1	99.99	65-125	PASS
ICB	ICB	1	1.016	101.61	65-125	PASS
ICSA1	ICSA	1	1.005	100.5	65-125	PASS
ICSAB1	ICSAB	1	1.0055	100.55	65-125	PASS
MB-62172	MBLK	1	1.025	102.46	65-125	PASS
LCS2-62172	LCS	1	1.025	102.51	65-125	PASS
N024107-001B	SAMP	5	1.02	102.05	65-125	PASS
MB-62172	MBLK	1	1.014	101.4	65-125	PASS
LCS2-62172	LCS	1	1.0032	100.32	65-125	PASS
N024107-001B	SAMP	5	0.99	99.11	65-125	PASS
N024107-002B	SAMP	5	1	99.88	65-125	PASS
N024107-001B	SAMP	50	1.007	100.7	65-125	PASS
N024107-001B	SAMP	250	1.021	102.14	65-125	PASS
CCV1	CCV	1	1.042	104.15	65-125	PASS
CCV1	CCV	1	1.016	101.6	65-125	PASS
CCB1	CCB	1	1.022	102.25	65-125	PASS
N024107-001B-PS	PS	50	1.0041	100.41	65-125	PASS
N024107-001B-MS2	MS	50	1	99.94	65-125	PASS
N024107-001B-MSD2	MSD	50	1.0012	100.12	65-125	PASS
N024107-002B	SAMP	50	1	99.69	65-125	PASS
CCV2	CCV	1	1.017	101.74	65-125	PASS
CCB2	CCB	1	1.028	102.79	65-125	PASS
ICSA2	ICSA	1	1.032	103.15	65-125	PASS
ICSAB2	ICSAB	1	1.017	101.71	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N024107
Test Method: EPA 200.7
Analysis Date: 5/13/2017

Matrix: Groundwater
Batch No.: 62172

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024075-002E DT 5X	Calcium	ug/L	126116.9	PASS	122728.3	2.76%	10
N024075-002E DT 5X	Iron	ug/L	15.23895	NA	16.40548	7.11%	10
N024075-002E DT 5X	Magnesium	ug/L	31528.42	PASS	28815.28	9.42%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N024107
Test Method: EPA 200.7
Analysis Date: 5/17/2017

Matrix: Groundwater
Batch No.: 62172

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024107-001B DT 250X	Sodium	ug/L	653782	PASS	643760.4	1.56%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.7_WDPGEPPB

Sample ID **N024075-002E-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115214**
Client ID: **ZZZZZZ**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/13/2017**	SeqNo: **2643291**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	139795.714	500	10000	122700	171	80	120				S
Iron	120.070	20	100.0	16.41	104	80	120				
Magnesium	39432.147	100	10000	28820	106	80	120				

Sample ID **N024107-001B-PS**	SampType: **PS**	TestCode: **200.7_WDPG**	Units: **µg/L**	Prep Date:	RunNo: **115304**
Client ID: **ZZZZZZ**	Batch ID: **62172**	TestNo: **EPA 200.7**		Analysis Date: **5/17/2017**	SeqNo: **2648138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	724723.479	25000	20000	643800	405	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

EPA 200.8

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62182
ASSET #: N024107

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/12/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Cr in N024075-001C PS/MS/MSD failed. However LCS & DT passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/18/2017 Date:

2nd Level Reviewer Reviewed by: 5/18/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 200.8
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N024107-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 108.017 * 5 * (25/25)

Chromium , ug/L = 540.085

Reporting results in two significant figures,

Chromium , ug/L = 540

% RSD SUMMARY

PERCENT RSD SUMMARY: 170512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.12	7.8	15	PASS	0.13	6.81	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.51	2.78	15	PASS	0.53	7.99	15	PASS
Std3-5/50 ppb	ICAL	1	5.082	1.3	15	PASS	5.25	2.34	15	PASS
Std4-10/100 ppb	ICAL	1	10.085	1.65	15	PASS	10.23	1.64	15	PASS
Std5-20/200 ppb	ICAL	1	20.068	1.23	15	PASS	20.027	1.86	15	PASS
Std6-40/400 ppb	ICAL	1	40.38	1.45	15	PASS	40.46	1.54	15	PASS
Std7-100/1000 ppb	ICAL	1	99.82	1.29	15	PASS	100.29	1.2	15	PASS
Std8-200/2000 ppb	ICAL	1	200.064	1.92	15	PASS	199.74	2.23	15	PASS
ICV	ICV	1	9.76	0.91	15	PASS	98.41	0.37	15	PASS
ICB	ICB	1	0.0041	79.24	15	<PQL	0.0017	203.44	15	<PQL
LLICV	CCV1	1	1.0066	4.36	20	PASS	0.53	3.31	20	PASS
ICSA1	ICSA	1	0.07	6.067	15	PASS	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	19.35	1.87	15	PASS	21.085	3.34	15	PASS
LLICV	CCV1	1	1.00065	4.37	20	PASS	0.54	4.18	20	PASS
MB-62182	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-62182	LCS	1	9.98	0.18	15	PASS	98.87	0.96	15	PASS
N024075-001C	SAMP	1	519.85	0.82	15	PASS	9.25	1.68	15	PASS
N024075-001C	SAMP	5	104.15	1.094	15	PASS	1.91	1.2	15	PASS
N024075-001C	SAMP	25	21.35	1.85	15	PASS	0.39	4.53	15	PASS
N024075-001C-PS	PS	1	516.58	3.041	15	PASS	94.63	2.18	15	PASS
N024075-001C-PS	PS	5	103.3	0.9	15	PASS	19.55	1.63	15	PASS
N024075-001C-MS	MS	1	491.82	1.029	15	PASS	93.44	0.5	15	PASS
N024075-001C-MS	MS	5	103.021	1.41	15	PASS	19.41	1.91	15	PASS
N024075-001C-MSD	MSD	1	486.19	1.34	15	PASS	92.57	2.12	15	PASS
CCV1	CCV	1	20.44	0.34	15	PASS	19.9	0.31	15	PASS
CCB1	CCB	1	0.075	9.57	15	PASS	0.0064	122.7	15	<PQL
N024075-001C-MSD	MSD	5	104.55	0.77	15	PASS	20.19	0.13	15	PASS
N024075-002E	SAMP	1	0.22	14.18	15	PASS	3.72	4.26	15	PASS
N024075-002E	SAMP	5	0.12	17.15	15	<PQL	0.84	3.52	15	PASS
N024107-001B	SAMP	1	0.21	6.42	15	PASS	105.43	0.61	15	PASS
N024107-001B	SAMP	5	0.096	27.65	15	<PQL	23.68	0.52	15	PASS
N024107-001B-MS	MS	1	9.055	0.89	15	PASS	190.35	1.9	15	PASS
N024107-001B-MS	MS	5	2.0098	2.29	15	PASS	41.21	1.6	15	PASS
N024107-002B	SAMP	1	492.073	1.57	15	PASS	9.82	2.55	15	PASS
N024107-002B	SAMP	5	108.017	0.39	15	PASS	2.27	4.44	15	PASS
N024129-001A	SAMP	1	6.72	5.9	15	PASS	68.73	1.6	15	PASS
CCV2	CCV	1	20.48	0.34	15	PASS	19.89	0.8	15	PASS
CCB2	CCB	1	0.02	45.76	15	<PQL	0.0018	85.22	15	<PQL
N024129-001A	SAMP	5	1.49	1.64	15	PASS	15.52	0.41	15	PASS
N024129-002A	SAMP	1	0.81	3.55	15	PASS	142.94	0.92	15	PASS

PERCENT RSD SUMMARY: 170512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]				55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024129-002A	SAMP	5	0.19	5.81	15	PASS	31.35	2.29	15	PASS
N024129-003A	SAMP	1	3.74	0.69	15	PASS	58.4	0.75	15	PASS
N024129-003A	SAMP	5	0.88	2.57	15	PASS	13.0058	0.77	15	PASS
N024130-001A	SAMP	1	1.2	3.72	15	PASS	20.048	1.47	15	PASS
N024130-001A	SAMP	5	0.29	7.45	15	PASS	4.52	4.062	15	PASS
N024130-002A	SAMP	1	1.39	3.47	15	PASS	23.16	0.39	15	PASS
N024130-002A	SAMP	5	0.32	7.28	15	PASS	5.19	1.8	15	PASS
N024130-003A	SAMP	1	3.17	3.036	15	PASS	66.75	0.83	15	PASS
CCV3	CCV	1	20.91	0.86	15	PASS	20.27	2.29	15	PASS
CCB3	CCB	1	0.013	76.55	15	<PQL	0.0076	105.27	15	<PQL
N024130-003A	SAMP	5	0.72	3.091	15	PASS	15.16	2.075	15	PASS
N024130-004A	SAMP	1	6.8	3.17	15	PASS	57.42	3.0038	15	PASS
N024130-004A	SAMP	5	1.51	1.63	15	PASS	12.77	1.28	15	PASS
N024154-001B	SAMP	1	1.19	2.056	15	PASS	1.031	3.66	15	PASS
N024154-001B	SAMP	5	0.29	2.16	15	PASS	0.25	17.21	15	<PQL
N024053-001B	SAMP	1	1.32	2.27	15	PASS	17.071	2.32	15	PASS
N024053-001A	SAMP	1	1.37	2.42	15	PASS	15.51	0.74	15	PASS
CCV4	CCV	1	21.75	0.78	15	PASS	20.56	0.65	15	PASS
CCB4	CCB	1	0.016	76.18	15	<PQL	0.00014	2654.37	15	<PQL
LLCCV1	CCV2	1	1.043	6.77	20	PASS	0.57	2.14	20	PASS
ICSA2	ICSA	1	0.052	28.54	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	19.92	1.71	15	PASS	21.0088	1.56	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170512A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0512001.D	RINSE	RINSE	1	05/12/17 11:28 AM
A0512002.D	Cal Blank	IBLK	1	05/12/17 11:33 AM
A0512003.D	Std1-0.1/1 ppb	ICAL	1	05/12/17 11:39 AM
A0512004.D	Std2-0.5/5 ppb	ICAL	1	05/12/17 11:45 AM
A0512005.D	Std3-5/50 ppb	ICAL	1	05/12/17 11:51 AM
A0512006.D	Std4-10/100 ppb	ICAL	1	05/12/17 11:56 AM
A0512007.D	Std5-20/200 ppb	ICAL	1	05/12/17 12:02 PM
A0512008.D	Std6-40/400 ppb	ICAL	1	05/12/17 12:07 PM
A0512009.D	Std7-100/1000 ppb	ICAL	1	05/12/17 12:13 PM
A0512010.D	Std8-200/2000 ppb	ICAL	1	05/12/17 12:19 PM
A0512011.D	ICV	ICV	1	05/12/17 12:24 PM
A0512012.D	ICB	ICB	1	05/12/17 12:30 PM
A0512013.D	LLICV	CCV1	1	05/12/17 12:35 PM
A0512014.D	ICSA1	ICSA	1	05/12/17 12:42 PM
A0512015.D	ICSAB1	ICSAB	1	05/12/17 12:48 PM
A0512016.D	LLICV	CCV1	1	05/12/17 12:52 PM
A0512017.D	MB-62182	MBLK	1	05/12/17 12:58 PM
A0512018.D	LCS-62182	LCS	1	05/12/17 1:03 PM
A0512019.D	N024075-001C	SAMP	1	05/12/17 1:09 PM
A0512020.D	N024075-001C	SAMP	5	05/12/17 1:15 PM
A0512021.D	N024075-001C	SAMP	25	05/12/17 1:20 PM
A0512022.D	N024075-001C-PS	PS	1	05/12/17 1:26 PM
A0512023.D	N024075-001C-PS	PS	5	05/12/17 1:32 PM
A0512024.D	N024075-001C-MS	MS	1	05/12/17 1:38 PM
A0512025.D	N024075-001C-MS	MS	5	05/12/17 1:43 PM
A0512026.D	N024075-001C-MSD	MSD	1	05/12/17 1:49 PM
A0512027.D	CCV1	CCV	1	05/12/17 1:54 PM
A0512028.D	CCB1	CCB	1	05/12/17 2:00 PM
A0512029.D	N024075-001C-MSD	MSD	5	05/12/17 2:05 PM
A0512030.D	N024075-002E	SAMP	1	05/12/17 2:11 PM
A0512031.D	N024075-002E	SAMP	5	05/12/17 2:17 PM
A0512032.D	N024107-001B	SAMP	1	05/12/17 2:22 PM
A0512033.D	N024107-001B	SAMP	5	05/12/17 2:28 PM
A0512034.D	N024107-001B-MS	MS	1	05/12/17 2:33 PM
A0512035.D	N024107-001B-MS	MS	5	05/12/17 2:39 PM
A0512036.D	N024107-002B	SAMP	1	05/12/17 2:44 PM
A0512037.D	N024107-002B	SAMP	5	05/12/17 2:50 PM
A0512038.D	N024129-001A	SAMP	1	05/12/17 2:55 PM
A0512039.D	CCV2	CCV	1	05/12/17 3:01 PM
A0512040.D	CCB2	CCB	1	05/12/17 3:07 PM
A0512041.D	N024129-001A	SAMP	5	05/12/17 3:12 PM
A0512042.D	N024129-002A	SAMP	1	05/12/17 3:18 PM

INJECTION LOG: 170512A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0512043.D	N024129-002A	SAMP	5	05/12/17 3:23 PM
A0512044.D	N024129-003A	SAMP	1	05/12/17 3:29 PM
A0512045.D	N024129-003A	SAMP	5	05/12/17 3:34 PM
A0512046.D	N024130-001A	SAMP	1	05/12/17 3:40 PM
A0512047.D	N024130-001A	SAMP	5	05/12/17 3:45 PM
A0512048.D	N024130-002A	SAMP	1	05/12/17 3:51 PM
A0512049.D	N024130-002A	SAMP	5	05/12/17 3:57 PM
A0512050.D	N024130-003A	SAMP	1	05/12/17 4:02 PM
A0512051.D	CCV3	CCV	1	05/12/17 4:08 PM
A0512052.D	CCB3	CCB	1	05/12/17 4:13 PM
A0512053.D	N024130-003A	SAMP	5	05/12/17 4:19 PM
A0512054.D	N024130-004A	SAMP	1	05/12/17 4:24 PM
A0512055.D	N024130-004A	SAMP	5	05/12/17 4:30 PM
A0512056.D	N024154-001B	SAMP	1	05/12/17 4:36 PM
A0512057.D	N024154-001B	SAMP	5	05/12/17 4:41 PM
A0512058.D	N024053-001B	SAMP	1	05/12/17 4:47 PM
A0512059.D	N024053-001A	SAMP	1	05/12/17 4:52 PM
A0512060.D	CCV4	CCV	1	05/12/17 5:07 PM
A0512061.D	CCB4	CCB	1	05/12/17 5:13 PM
A0512062.D	LLCCV1	CCV2	1	05/12/17 5:18 PM
A0512063.D	ICSA2	ICSA	1	05/12/17 5:24 PM
A0512064.D	ICSAB2	ICSAB	1	05/12/17 5:29 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2017 7:30:40 A**
Prep End Date: **5/11/2017 12:00:00**
Prep Batch **62182** Prep Code: **200.8_PR**

Reviewed/ Date: 5/16/2017
Initials/ Date: 5/16/2017
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62182	Aqueous		25	☐	0	0	25	1.000		
MB-62182	Aqueous		25	☐	0	0	25	1.000		
N024075-001C	Water	<2	25	☐	0	0	25	1.000		
N024075-001C-MS	Water	<2	25	☐	0	0	25	1.000		
N024075-001C-MS	Water	<2	25	☐	0	0	25	1.000		
N024075-002E	Water	<2	25	☐	0	0	25	1.000		
N024107-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024107-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024107-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024129-001A	Water	<2	25	☐	0	0	25	1.000		
N024129-002A	Water	<2	25	☐	0	0	25	1.000		
N024129-003A	Water	<2	25	☐	0	0	25	1.000		
N024130-001A	Water	<2	25	☐	0	0	25	1.000		
N024130-002A	Water	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2017 7:30:40 A**
Prep End Date: **5/11/2017 12:00:00**
Prep Batch **62182** Prep Code: **200.8_PR**

Reviewed/ Date: 5/16/2017
Initials/ Date: 5/16/2017
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-14**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024130-003A	Water	<2	25	☐	0	0	25	1.000		
N024130-004A	Water	<2	25	☐	0	0	25	1.000		
N024154-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 12 May 2017 10:27:26 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	90207.10	0.00	
24	Mg	332785.00	0.00	
25	Mg	43424.60	0.00	
26	Mg	51011.60	0.00	
59	Co	433300.00	0.00	
115	In	669939.00	0.00	
206	Pb	169990.00	0.00	
207	Pb	148056.00	0.00	
208	Pb	365470.00	0.00	

RSD (%)

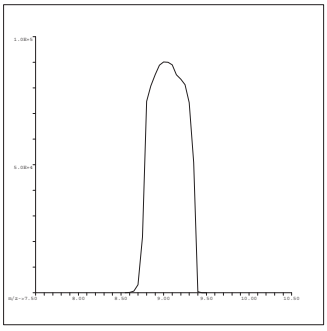
Element		Actual	Required	Flag
9	Be	1.38	5.00	
24	Mg	1.42	5.00	
25	Mg	1.85	5.00	
26	Mg	2.05	5.00	
59	Co	0.54	5.00	
115	In	0.50	5.00	
206	Pb	0.92	5.00	
207	Pb	1.39	5.00	
208	Pb	1.14	5.00	

Ion Ratio

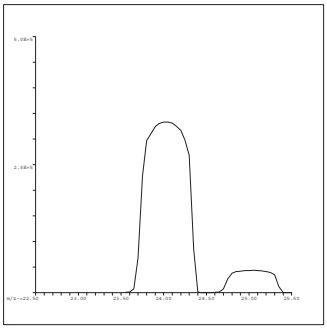
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

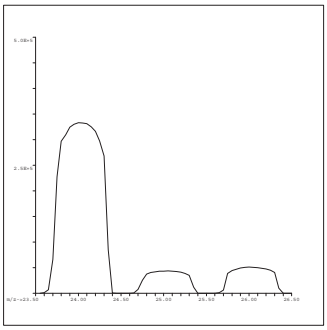
Element	Actual	Required	Flag



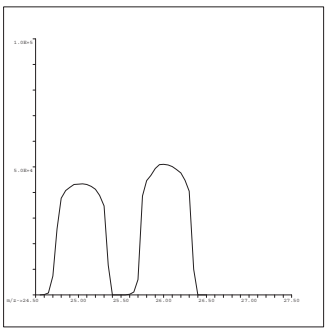
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



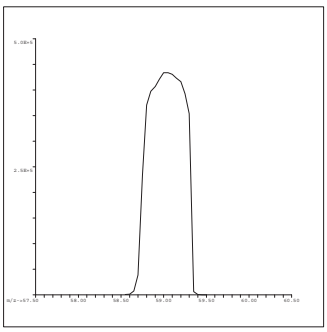
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



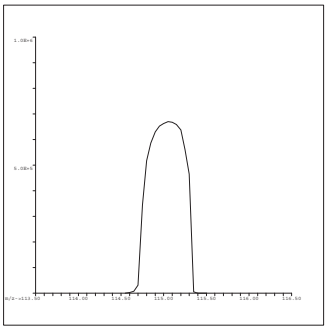
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



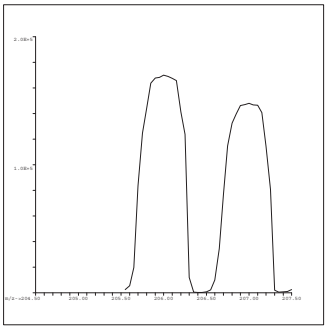
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



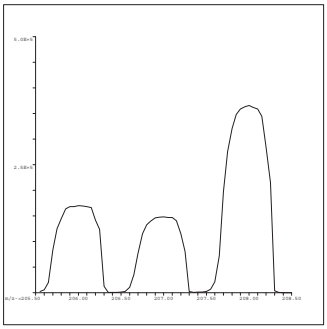
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



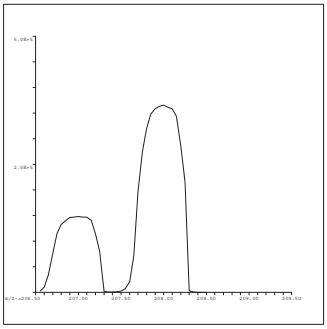
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170512A

Instrument ID: ICPMS-02

Analyte	Data File	A0512002.D	A0512004.D	A0512005.D	A0512006.D	A0512007.D	A0512008.D	A0512009.D	A0512010.D	
	Acq. Date-Time	05/12/2017 11:33 AM	05/12/2017 11:45 AM	05/12/2017 11:51 AM	05/12/2017 11:56 AM	05/12/2017 12:02 PM	05/12/2017 12:07 PM	05/12/2017 12:13 PM	05/12/2017 12:19 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	57820	58881.7	59525.9	60047	59963	60207.2	59592.8	58087.5	
55 Mn [2]	CPS	27.8	1332.3	13134.2	25773.6	50355.7	102107.1	250509.4	486162.9	1.0000
52 Cr [2]	CPS	151.1	2878.1	27709	55306.6	109758.3	221597.5	541962.1	1058415.1	1.0000

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	98.414	0.50	100.0	0	98.4	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ZZZZZZ**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644497**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.528	0.50	0.5000	0	106	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644511**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.899	0.50	20.00	0	99.5	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	19.894	0.50	20.00	0	99.5	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644535**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.271	0.50	20.00	0	101	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644544**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.559	0.50	20.00	0	103	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ZZZZZZ**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644546**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.574	0.50	0.5000	0	115	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.758	1.0	10.00	0	97.6	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ZZZZZZ**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.007	1.0	1.000	0	101	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644347**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.440	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644359**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.475	1.0	20.00	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644371**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.906	1.0	20.00	0	105	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCV**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.747	1.0	20.00	0	109	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ZZZZZZ**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.043	1.0	1.000	0	104	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644512**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644545**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644348**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.075	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644360**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.020	1.0									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644372**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **CCB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICSA**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICSAB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.085	0.50	20.00	0	105	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICSA**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644547**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8_WDISS**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICSAB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	21.009	0.50	20.00	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICSA**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644334**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.070	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICSAB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644335**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.346	1.0	20.00	0	96.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICSA**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644383**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.052	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **200.8DIS_Cr**	Units: **µg/L**	Prep Date:	RunNo: **115230**
Client ID: **ICSAB**	Batch ID: **R115230**	TestNo: **EPA 200.8**		Analysis Date: **5/12/2017**	SeqNo: **2644384**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.916	1.0	20.00	0	99.6	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	57820	57820	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	59010.7	57820	102.06	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	58881.7	57820	101.84	PASS	70-125
Std3-5/50 ppb	ICAL	1	59525.9	57820	102.95	PASS	70-125
Std4-10/100 ppb	ICAL	1	60047	57820	103.85	PASS	70-125
Std5-20/200 ppb	ICAL	1	59963	57820	103.71	PASS	70-125
Std6-40/400 ppb	ICAL	1	60207.2	57820	104.13	PASS	70-125
Std7-100/1000 ppb	ICAL	1	59592.8	57820	103.07	PASS	70-125
Std8-200/2000 ppb	ICAL	1	58087.5	57820	100.46	PASS	70-125
ICV	ICV	1	61712.5	57820	106.73	PASS	70-125
ICB	ICB	1	56490.8	57820	97.7	PASS	70-125
LLICV	CCV1	1	56819.8	57820	98.27	PASS	70-125
ICSA1	ICSA	1	60289.9	57820	104.27	PASS	70-125
ICSAB1	ICSAB	1	58355.2	57820	100.93	PASS	70-125
LLICV	CCV1	1	73179.1	57820	126.56	NR!	70-125
MB-62182	MBLK	1	64587	57820	111.7	PASS	70-125
LCS-62182	LCS	1	67699.4	57820	117.09	PASS	70-125
N024075-001C	SAMP	1	55961.6	57820	96.79	PASS	70-125
N024075-001C	SAMP	5	67618.9	57820	116.95	PASS	70-125
N024075-001C	SAMP	25	66473.2	57820	114.97	PASS	70-125
N024075-001C-PS	PS	1	53819.8	57820	93.082	PASS	70-125
N024075-001C-PS	PS	5	62165.7	57820	107.52	PASS	70-125
N024075-001C-MS	MS	1	56657.3	57820	97.99	PASS	70-125
N024075-001C-MS	MS	5	62596.2	57820	108.26	PASS	70-125
N024075-001C-MSD	MSD	1	57650.6	57820	99.71	PASS	70-125
CCV1	CCV	1	65823	57820	113.84	PASS	70-125
CCB1	CCB	1	62604.8	57820	108.28	PASS	70-125
N024075-001C-MSD	MSD	5	57114.2	57820	98.78	PASS	70-125
N024075-002E	SAMP	1	58636.4	57820	101.41	PASS	70-125
N024075-002E	SAMP	5	62204.7	57820	107.58	PASS	70-125
N024107-001B	SAMP	1	62122.1	57820	107.44	PASS	70-125
N024107-001B	SAMP	5	59953	57820	103.69	PASS	70-125
N024107-001B-MS	MS	1	59144.8	57820	102.29	PASS	70-125
N024107-001B-MS	MS	5	58340.7	57820	100.9	PASS	70-125
N024107-002B	SAMP	1	55408.5	57820	95.83	PASS	70-125
N024107-002B	SAMP	5	58008.4	57820	100.33	PASS	70-125
N024129-001A	SAMP	1	62858.1	57820	108.71	PASS	70-125
CCV2	CCV	1	57721.1	57820	99.83	PASS	70-125
CCB2	CCB	1	54035.1	57820	93.45	PASS	70-125
N024129-001A	SAMP	5	51059.1	57820	88.31	PASS	70-125
N024129-002A	SAMP	1	59217	57820	102.42	PASS	70-125

INTERNAL STANDARD: 170512A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N024129-002A	SAMP	5	53632.7	57820	92.76	PASS	70-125
N024129-003A	SAMP	1	59824.6	57820	103.47	PASS	70-125
N024129-003A	SAMP	5	51080.2	57820	88.34	PASS	70-125
N024130-001A	SAMP	1	59396.5	57820	102.73	PASS	70-125
N024130-001A	SAMP	5	50191.1	57820	86.81	PASS	70-125
N024130-002A	SAMP	1	58182.4	57820	100.63	PASS	70-125
N024130-002A	SAMP	5	49812	57820	86.15	PASS	70-125
N024130-003A	SAMP	1	57158.7	57820	98.86	PASS	70-125
CCV3	CCV	1	49276.1	57820	85.22	PASS	70-125
CCB3	CCB	1	47022.6	57820	81.33	PASS	70-125
N024130-003A	SAMP	5	46852.4	57820	81.031	PASS	70-125
N024130-004A	SAMP	1	55615.9	57820	96.19	PASS	70-125
N024130-004A	SAMP	5	47982.3	57820	82.99	PASS	70-125
N024154-001B	SAMP	1	55344.9	57820	95.72	PASS	70-125
N024154-001B	SAMP	5	48511.6	57820	83.9	PASS	70-125
N024053-001B	SAMP	1	53895.8	57820	93.21	PASS	70-125
N024053-001A	SAMP	1	54532.3	57820	94.31	PASS	70-125
CCV4	CCV	1	48533.9	57820	83.94	PASS	70-125
CCB4	CCB	1	45829.5	57820	79.26	PASS	70-125
LLCCV1	CCV2	1	44955.1	57820	77.75	PASS	70-125
ICSA2	ICSA	1	54243.6	57820	93.81	PASS	70-125
ICSAB2	ICSAB	1	54698.4	57820	94.6	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024107
Test Method: EPA 200.8
Analysis Date: 5/12/2017

Matrix: Groundwater
Batch No.: 62182

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to ~~Cr~~ Mn. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024075-001C DT 25X	Chromium	ug/L	533.6919	PASS	520.7658	2.48%	10
N024075-001C DT 5X	Manganese	ug/L	9.539156	NA	9.251099	3.11%	10

Note: NA - Not applicable

Mary for 5/18/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8_WDISS

Sample ID **N024075-001C-PS** SampType: **PS** TestCode: **200.8_WDISS** Units: **µg/L** Prep Date: RunNo: **115230**
Client ID: **ZZZZZZ** Batch ID: **62182** TestNo: **EPA 200.8** Analysis Date: **5/12/2017** SeqNo: **2644506**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	94.633	0.50	100.0	9.251	85.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 200.8DIS_CrPGE

Sample ID	N024075-001C-PS	SampType:	PS	TestCode:	200.8DIS_Cr	Units:	µg/L	Prep Date:		RunNo:	115230
Client ID:	ZZZZZZ	Batch ID:	62182	TestNo:	EPA 200.8			Analysis Date:	5/12/2017	SeqNo:	2644343

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	516.487	5.0	10.00	520.8	-42.8	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115084
ASSET #: N024107

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/5/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/9/2017

2nd Level Reviewer: 5/16/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N024107-002A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 5.4633 * 100$$

$$Cr^{+6}, \mu g/L = 546.33$$

Reporting results in two significant figures,

$$\mathbf{Cr^{+6}, \mu g/L = 550}$$

rba 5/10/2017

ANALYSIS RUN LOG

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005A	SAMP	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-1,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-1,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-2,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-2,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-3,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-3,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,10
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-4,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-4,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	~~N023912-005AMS,MS~~	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL N023912-005A,SAMP,1
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-5,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-5,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170505A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/05/17 8:16 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/05/17 8:27 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/05/17 8:36 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/05/17 8:46 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/05/17 8:55 AM	Reported
17	MB-R115084	MBLK	1	Hexavalent Chromium	05/05/17 9:05 AM	Reported
18	LCS-R115084	LCS	1	Hexavalent Chromium	05/05/17 9:14 AM	Reported
19	N024064-013A	SAMP	5	Hexavalent Chromium	05/05/17 9:26 AM	Reported
20	N024064-013AMS	MS	5	Hexavalent Chromium	05/05/17 9:37 AM	Reported
21	N024064-015A	SAMP	1	Hexavalent Chromium	05/05/17 9:46 AM	Reported
22	N024064-015AMS	MS	1	Hexavalent Chromium	05/05/17 9:55 AM	Reported
23	N024074-001A	SAMP	1	Hexavalent Chromium	05/05/17 10:05 AM	Reported
24	N024074-001AMS	MS	1	Hexavalent Chromium	05/05/17 10:14 AM	Reported
25	N024074-002A	SAMP	20	Hexavalent Chromium	05/05/17 10:24 AM	Not Reported
26	N024074-002AMS	MS	20	Hexavalent Chromium	05/05/17 10:33 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/05/17 10:43 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/05/17 10:52 AM	Reported
29	N024074-003A	SAMP	100	Hexavalent Chromium	05/05/17 11:02 AM	Reported
30	N024074-003AMS	MS	100	Hexavalent Chromium	05/05/17 11:11 AM	Reported
31	N024074-004A	SAMP	100	Hexavalent Chromium	05/05/17 11:21 AM	Reported
32	N024074-004AMS	MS	100	Hexavalent Chromium	05/05/17 11:30 AM	Reported
33	N024074-005A	SAMP	100	Hexavalent Chromium	05/05/17 11:40 AM	Reported
34	N024074-005AMS	MS	100	Hexavalent Chromium	05/05/17 11:49 AM	Reported
35	N024074-008A	SAMP	200	Hexavalent Chromium	05/05/17 11:59 AM	Reported
36	N024074-008AMS	MS	200	Hexavalent Chromium	05/05/17 12:08 PM	Reported
37	N024074-009A	SAMP	20	Hexavalent Chromium	05/05/17 12:17 PM	Reported
38	N024074-009AMS	MS	20	Hexavalent Chromium	05/05/17 12:27 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/05/17 12:36 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/05/17 12:46 PM	Reported
41	N024074-006A	SAMP	1	Hexavalent Chromium	05/05/17 12:55 PM	Not Reported
42	N024074-006AMS	MS	1	Hexavalent Chromium	05/05/17 1:05 PM	Not Reported

INJECTION LOG: 170505A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024074-007A	SAMP	1	Hexavalent Chromium	05/05/17 1:14 PM	Reported
44	N024074-007AMS	MS	1	Hexavalent Chromium	05/05/17 1:24 PM	Reported
45	N024074-006A	SAMP	5	Hexavalent Chromium	05/05/17 1:33 PM	Reported
46	N024074-006AMS	MS	5	Hexavalent Chromium	05/05/17 1:43 PM	Reported
47	N024074-002A	SAMP	20	Hexavalent Chromium	05/05/17 1:52 PM	Reported
48	N024074-003ADUP	DUP	100	Hexavalent Chromium	05/05/17 2:02 PM	Reported
49	N024074-008AMSD	MSD	200	Hexavalent Chromium	05/05/17 2:11 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	05/05/17 2:20 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	05/05/17 2:30 PM	Reported
52	N024074-010A	SAMP	1	Hexavalent Chromium	05/05/17 2:42 PM	Reported
53	N024074-010AMS	MS	1	Hexavalent Chromium	05/05/17 2:54 PM	Not Reported
54	N024074-011A	SAMP	1	Hexavalent Chromium	05/05/17 3:03 PM	Not Reported
55	N024074-011AMS	MS	1	Hexavalent Chromium	05/05/17 3:12 PM	Not Reported
56	N024074-011A	SAMP	5	Hexavalent Chromium	05/05/17 3:22 PM	Reported
57	N024074-011AMS	MS	5	Hexavalent Chromium	05/05/17 3:31 PM	Reported
58	N024074-012A	SAMP	1	Hexavalent Chromium	05/05/17 3:41 PM	Not Reported
59	N024074-012AMS	MS	1	Hexavalent Chromium	05/05/17 4:02 PM	Reported
60	N024074-013A	SAMP	1	Hexavalent Chromium	05/05/17 4:13 PM	Reported
61	N024074-013AMS	MS	1	Hexavalent Chromium	05/05/17 4:22 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	05/05/17 4:32 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	05/05/17 4:41 PM	Reported
64	N024074-010AMS	MS	1	Hexavalent Chromium	05/05/17 4:51 PM	Reported
65	N024107-001A	SAMP	1	Hexavalent Chromium	05/05/17 5:00 PM	Reported
66	N024107-001AMS	MS	1	Hexavalent Chromium	05/05/17 5:09 PM	Reported
67	N024107-002A	SAMP	100	Hexavalent Chromium	05/05/17 5:19 PM	Reported
68	N024107-002AMS	MS	100	Hexavalent Chromium	05/05/17 5:28 PM	Reported
69	N024018-005A	SAMP	1	Hexavalent Chromium	05/05/17 5:38 PM	Not Reported
70	N024018-005AMS	MS	1	Hexavalent Chromium	05/05/17 5:47 PM	Not Reported
71	N024037-001A	SAMP	1	Hexavalent Chromium	05/05/17 5:57 PM	Not Reported
72	N024037-001AMS	MS	1	Hexavalent Chromium	05/05/17 6:06 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/05/17 6:16 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/05/17 6:25 PM	Reported
75	N024074-012A	SAMP	1	Hexavalent Chromium	05/05/17 6:35 PM	Reported
76	CCV-7	CCV	1	Hexavalent Chromium	05/05/17 6:44 PM	Reported
77	CCB-7	CCB	1	Hexavalent Chromium	05/05/17 6:54 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170505A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**08/May/17 09:21:23**
No. of Injections:	**80**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/05/2017 08:16	Finished	
13	BLANK	2	1000	Unknown		05/05/2017 08:27	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/05/2017 08:36	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/05/2017 08:46	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/05/2017 08:55	Finished	CCB R170419B
17	MB-H2O,MBLK,1	6	1000	Unknown		05/05/2017 09:05	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/05/2017 09:14	Finished	LCS, IWST-170330B
19	N024064-013A,SAMF	8	1000	Unknown		05/05/2017 09:26	Finished	SAMP, 2>10mL
20	N024064-013AMS,MS	9	1000	Unknown		05/05/2017 09:37	Finished	MS (1ppb), IWST-170330B,2>1
21	N024064-015A,SAMF	10	1000	Unknown		05/05/2017 09:46	Finished	SAMP, 10mL
22	N024064-015AMS,MS	11	1000	Unknown		05/05/2017 09:55	Finished	MS (1ppb), IWST-170330B,10
23	N024074-001A,SAMF	12	1000	Unknown		05/05/2017 10:05	Finished	SAMP, 10mL
24	N024074-001AMS,MS	13	1000	Unknown		05/05/2017 10:14	Finished	MS (1ppb), IWST-170330B,10
25	N024074-002A,SAMF	14	1000	Unknown		05/05/2017 10:24	Finished	SAMP,0.5>10mL
26	N024074-002AMS,MS	15	1000	Unknown		05/05/2017 10:33	Finished	MS (5ppb), IWST-170330B,0.5
27	CCV-2,CCV1,1,	16	1000	Unknown		05/05/2017 10:43	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	17	1000	Unknown		05/05/2017 10:52	Finished	CCB R170419B
29	N024074-003A,SAMF	18	1000	Unknown		05/05/2017 11:02	Finished	SAMP, 0.1>10mL
30	N024074-003AMS,MS	19	1000	Unknown		05/05/2017 11:11	Finished	MS (5ppb), IWST-170330B,0.1
31	N024074-004A,SAMF	20	1000	Unknown		05/05/2017 11:21	Finished	SAMP, 0.1>10mL
32	N024074-004AMS,MS	21	1000	Unknown		05/05/2017 11:30	Finished	MS (5ppb), IWST-170330B,0.1
33	N024074-005A,SAMF	22	1000	Unknown		05/05/2017 11:40	Finished	SAMP, 0.1>10mL
34	N024074-005AMS,MS	23	1000	Unknown		05/05/2017 11:49	Finished	MS (5ppb), IWST-170330B,0.1
35	N024074-008A,SAMF	24	1000	Unknown		05/05/2017 11:59	Finished	SAMP, 0.05>10mL
36	N024074-008AMS,MS	25	1000	Unknown		05/05/2017 12:08	Finished	MS (5ppb), IWST-170330B,0.0
37	N024074-009A,SAMF	26	1000	Unknown		05/05/2017 12:17	Finished	SAMP, 0.5>10mL
38	N024074-009AMS,MS	27	1000	Unknown		05/05/2017 12:27	Finished	MS (5ppb), IWST-170330B,0.5
39	CCV-3,CCV,1,	28	1000	Unknown		05/05/2017 12:36	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	29	1000	Unknown		05/05/2017 12:46	Finished	CCB R170419B
41	N024074-006A,SAMF	30	1000	Unknown		05/05/2017 12:55	Finished	SAMP, 10mL
42	N024074-006AMS,MS	31	1000	Unknown		05/05/2017 13:05	Finished	MS (1ppb), IWST-170330B,10
43	N024074-007A,SAMF	32	1000	Unknown		05/05/2017 13:14	Finished	SAMP, 10mL
44	N024074-007AMS,MS	33	1000	Unknown		05/05/2017 13:24	Finished	MS (1ppb), IWST-170330B,10
45	N024074-006A,SAMF	34	1000	Unknown		05/05/2017 13:33	Finished	SAMP, 2>10mL
46	N024074-006AMS,MS	35	1000	Unknown		05/05/2017 13:43	Finished	MS (1ppb), IWST-170330B,2>1
47	N024074-002A,SAMF	36	1000	Unknown		05/05/2017 13:52	Finished	SAMP, 0.5>10mL
48	N024074-003ADUP,D	37	1000	Unknown		05/05/2017 14:02	Finished	DUP, 0.1>10mL
49	N024074-008AMSD,M	38	1000	Unknown		05/05/2017 14:11	Finished	MSD (5ppb), IWST-170330B,0
50	CCV-4,CCV1,1,	39	1000	Unknown		05/05/2017 14:20	Finished	CCV @10ppb, IWST-170330B
51	CCB-4,CCB,1,	40	1000	Unknown		05/05/2017 14:30	Finished	CCB R170419B
52	N024074-010A,SAMF	1	1000	Unknown		05/05/2017 14:42	Finished	SAMP, 10mL
53	N024074-010AMS,MS	2	1000	Unknown		05/05/2017 14:54	Finished	MS (1ppb), IWST-170330B,10
54	N024074-011A,SAMF	3	1000	Unknown		05/05/2017 15:03	Finished	SAMP, 10mL
55	N024074-011AMS,MS	4	1000	Unknown		05/05/2017 15:12	Finished	MS (1ppb), IWST-170330B,10
56	N024074-011A,SAMF	5	1000	Unknown		05/05/2017 15:22	Finished	SAMP, 2>10mL
57	N024074-011AMS,MS	6	1000	Unknown		05/05/2017 15:31	Finished	MS (1ppb), IWST-170330B,2>1
58	N024074-012A,SAMF	7	1000	Unknown		05/05/2017 15:41	Finished	SAMP, 10mL
59	N024074-012AMS,MS	8	1000	Unknown		05/05/2017 16:02	Finished	MS (1ppb), IWST-170330B,10
60	N024074-013A,SAMF	9	1000	Unknown		05/05/2017 16:13	Finished	SAMP, 10mL

61	N024074-013AMS,MS	10	1000	Unknown		05/05/2017 16:22	Finished	MS (1ppb), IWST-170330B,10
62	CCV-5,CCV,1,	11	1000	Unknown		05/05/2017 16:32	Finished	CCV @5ppb, IWST-170330B
63	CCB-5,CCB,1,	12	1000	Unknown		05/05/2017 16:41	Finished	CCB R170414A
64	N024074-010AMS,MS	13	1000	Unknown		05/05/2017 16:51	Finished	MS (5ppb), IWST-170330B,10
65	N024107-001A,SAMP	14	1000	Unknown		05/05/2017 17:00	Finished	SAMP, 10mL
66	N024107-001AMS,MS	15	1000	Unknown		05/05/2017 17:09	Finished	MS (1ppb), IWST-170330B,10
67	N024107-002A,SAMP	16	1000	Unknown		05/05/2017 17:19	Finished	SAMP, 0.1>10mL
68	N024107-002AMS,MS	17	1000	Unknown		05/05/2017 17:28	Finished	MS (5ppb), IWST-170330B,0.1
69	N024018-005A,SAMP	18	1000	Unknown		05/05/2017 17:38	Finished	SAMP,10mL
70	N024018-005AMS,MS	19	1000	Unknown		05/05/2017 17:47	Finished	MS (1ppb), IWST-170330B,2>1
71	N024037-001A,SAMP	20	1000	Unknown		05/05/2017 17:57	Finished	SAMP,10mL
72	N024037-001AMS,MS	21	1000	Unknown		05/05/2017 18:06	Finished	MS (1ppb), IWST-170330B,2>1
73	CCV-6,CCV1,1,	22	1000	Unknown		05/05/2017 18:16	Finished	CCV @10ppb, IWST-170330B
74	CCB-6,CCB,1,	23	1000	Unknown		05/05/2017 18:25	Finished	CCB R170419B
75	N024074-012A,SAMP	24	1000	Unknown		05/05/2017 18:35	Finished	SAMP, 10mL
76	CCV-7,CCV,1,	25	1000	Unknown		05/05/2017 18:44	Finished	CCV @5ppb, IWST-170330B
77	CCB-7,CCB,1,	26	1000	Unknown		05/05/2017 18:54	Finished	CCB R170419B
78	SHUTDOWN	27	1000	Unknown		05/05/2017 19:03	Finished	
79	Eluent: R170504A	28	1000	Unknown		n.a.	Finished	Eluent
80	PCR: R170504B	29	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/5/17
Time Prepared: 1403H
Prepared By: NBA

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CLW-161228C
NH4OH + NH4SO4 eluent: R1705085
NH4OH + NH4SO4 buffer: R1704198 / R1704284

6N NaOH: R1707088

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024106-001A	9.11	9.53	~25 ml	~25 ml	+ 6 drops NaOH	R1704198
2)	2A	8.95	9.49			+ 6 "	
3)	3A	8.89	9.45			+ 6 "	
4)	4A	9.34	-				R1702284
5)	5A	9.35	-				
6)	6A	~~9.45~~ 9.03	9.34			+ 5 "	R1704198
7)	7A	9.40	-				R1704284
8)	8A	9.20	9.58			+ 5 "	R1704198
9)	9A	9.35	-				
10)	10A	9.38	-				
11)	N024107-1A	9.15	9.45			+ 5 "	R1704284
12)	2A	9.12	9.41			+ 5 "	
13)							
14)							
15)							

Sample Preparation

Date Prepared: 5/9/17
Time Prepared: 830
Prepared By: LSR

SLOPE: 977 Δ
pH 4: 4.04 @ 20.7°C
7: 7.03 @ 20.9°C
10: 10.05 @ 20.6°C
LCS: 7.03 @ 19.6°C

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CLW-161228C
NH4OH + NH4SO4 eluent: R1705085 New C
NH4OH + NH4SO4 buffer: R1704164

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024135-001A	9.61	-	~250 ml	~250 ml	-	R1704164
2)	N024136-001A	9.38	-			-	
3)	2A	9.34	-			-	
4)	3A	9.31	-			-	
5)	4A	9.37	-			-	
6)	5A	9.33	-			-	
7)	6A	9.44	-			-	
8)	7A	9.36	-			-	
9)	8A	9.48	-			-	
10)	9A	9.69	-			-	
11)	N024137-003A	9.66	-			-	
12)							
13)							
14)							
15)							

Logbook No. 12

nba 5/10/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/25/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0537	0.2438	1.2243	2.4380	3.6639	4.8727	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST-170330A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ICV**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2637208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.087	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2637209**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCV**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637211**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.926	0.20	5.000	0	98.5	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637212**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.195	0.20	0.2000	0	97.5	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.880	0.20	10.00	0	98.8	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCV**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.002	0.20	5.000	0	100	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.868	0.20	10.00	0	98.7	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCV**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637253**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.005	0.20	5.000	0	100	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ZZZZZZ**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.850	0.20	10.00	0	98.5	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCV**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.947	0.20	5.000	0	98.9	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **ICB**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2637210**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCB**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637213**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCB**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCB**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCB**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCB**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCB**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115084**
Client ID: **CCB**	Batch ID: **R115084**	TestNo: **EPA 218.6**		Analysis Date: **5/5/2017**	SeqNo: **2637264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/5/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.131	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
Average	4.131	
Actual RT Window	4.051 - 4.211	
Applied RT Window	3.931 - 4.331	
MB-R115084	N.A.	N.A.
LCS-R115084	4.131	PASS
N024064-013A	4.073	PASS
N024064-013AMS	4.073	PASS
N024064-015A	N.A.	N.A.
N024064-015AMS	4.131	PASS
N024074-001A	4.031	PASS
N024074-001AMS	4.031	PASS
N024074-002A	4.073	PASS
N024074-002AMS	4.123	PASS
N024074-003A	4.131	PASS
N024074-003AMS	4.131	PASS
N024074-004A	4.123	PASS
N024074-004AMS	4.131	PASS
N024074-005A	4.131	PASS
N024074-005AMS	4.131	PASS
N024074-008A	4.131	PASS
N024074-008AMS	4.131	PASS
N024074-009A	4.123	PASS
N024074-009AMS	4.131	PASS
N024074-006A	3.798	FAIL
N024074-006AMS	3.756	FAIL

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/5/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.131	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
Average	4.131	
Actual RT Window	4.051 - 4.211	
Applied RT Window	3.931 - 4.331	
N024074-007A	N.A.	N.A.
N024074-007AMS	4.131	PASS
N024074-006A	4.081	PASS
N024074-006AMS	4.090	PASS
N024074-002A	4.123	PASS
N024074-003ADUP	4.131	PASS
N024074-008AMSD	4.131	PASS
N024074-010A	3.990	PASS
N024074-010AMS	3.990	PASS
N024074-011A	N.A.	N.A.
N024074-011AMS	3.865	FAIL
N024074-011A	N.A.	N.A.
N024074-011AMS	4.090	PASS
N024074-012A	N.A.	N.A.
N024074-012AMS	4.131	PASS
N024074-013A	N.A.	N.A.
N024074-013AMS	4.131	PASS
N024074-010AMS	3.990	PASS
N024107-001A	N.A.	N.A.
N024107-001AMS	4.098	PASS
N024107-002A	4.131	PASS
N024107-002AMS	4.131	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/5/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.131	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
Average	4.131	
Actual RT Window	4.051 - 4.211	
Applied RT Window	3.931 - 4.331	
N024018-005A	N.A.	N.A.
N024018-005AMS	4.065	PASS
N024037-001A	3.956	PASS
N024037-001AMS	3.940	PASS
N024074-012A	N.A.	N.A.

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6/EPA 7199 Unit: ug/L
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Instrument Name: **IC-06** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

ASSET LABORATORIES

CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436

NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

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LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA



INITIAL CALIBRATION

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

rba 4/30/2017

5/3/2017

IC-07 RBA 4/27/2017 12:48 PM

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-2,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-2,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-3,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-4,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-4,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,1
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-5,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-5,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

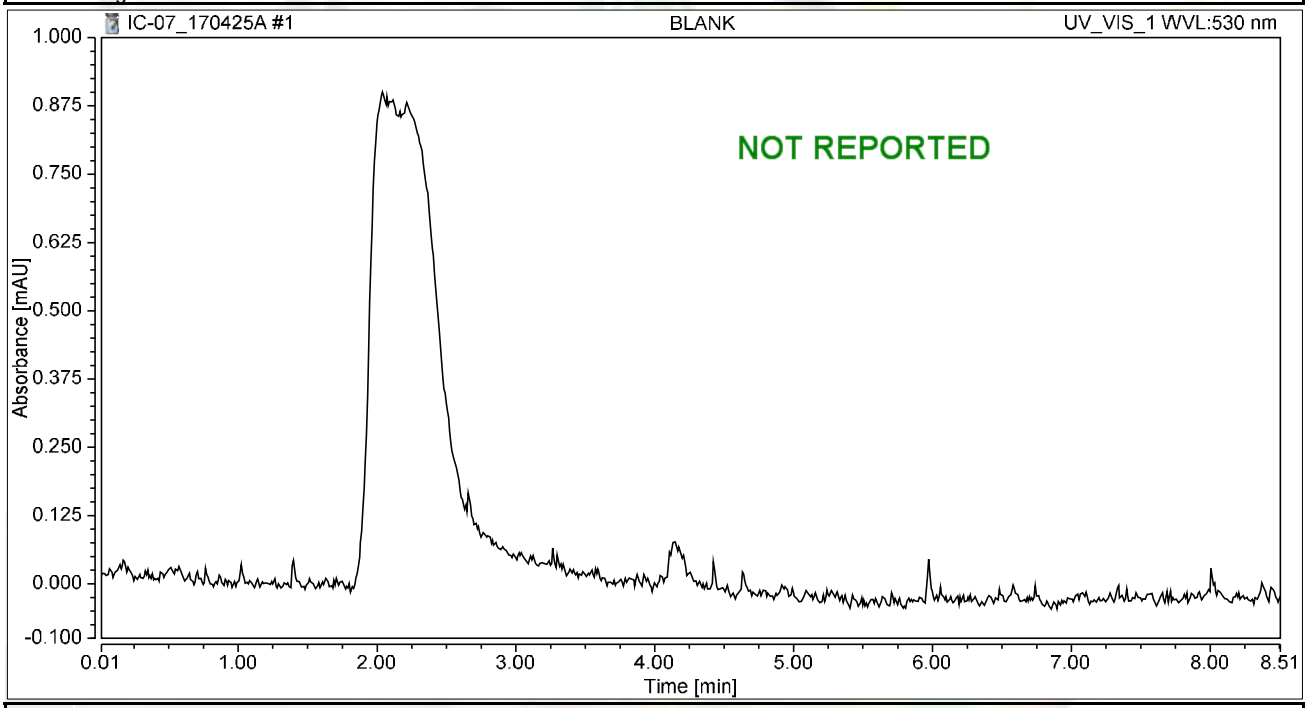
61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	N023912-005AMS,MS	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-6,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-6,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

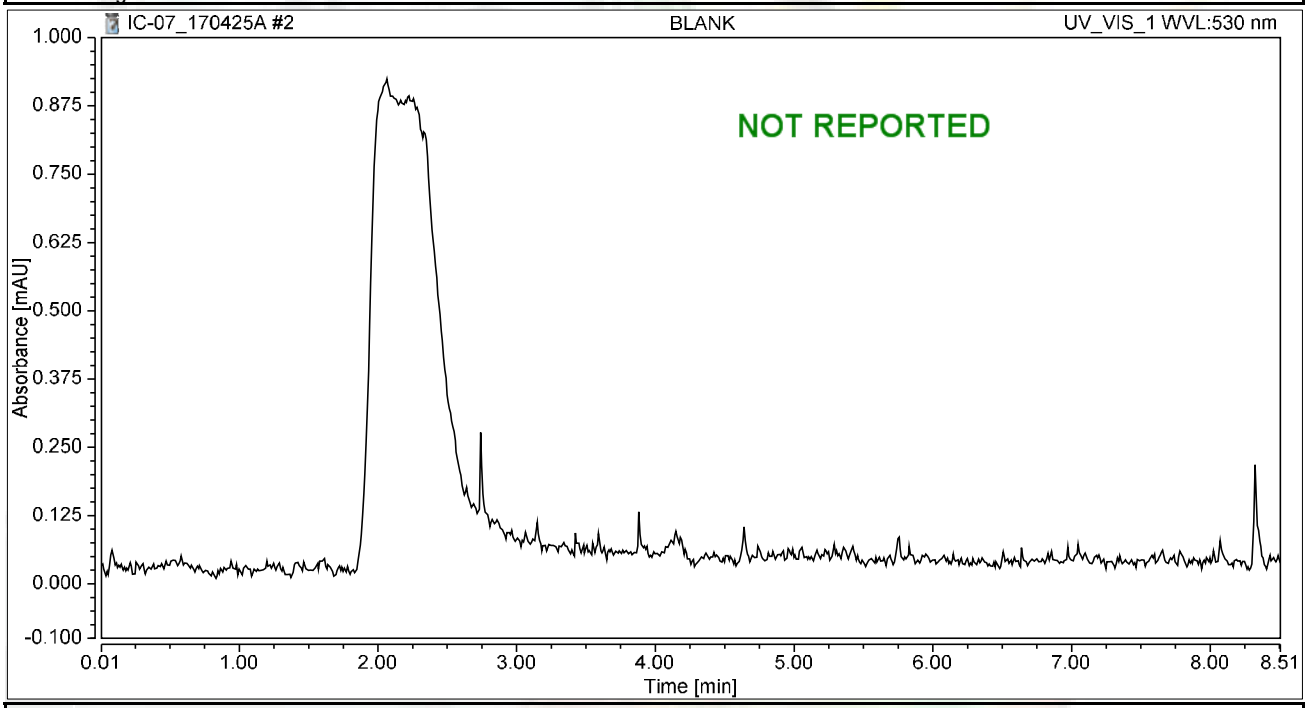
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

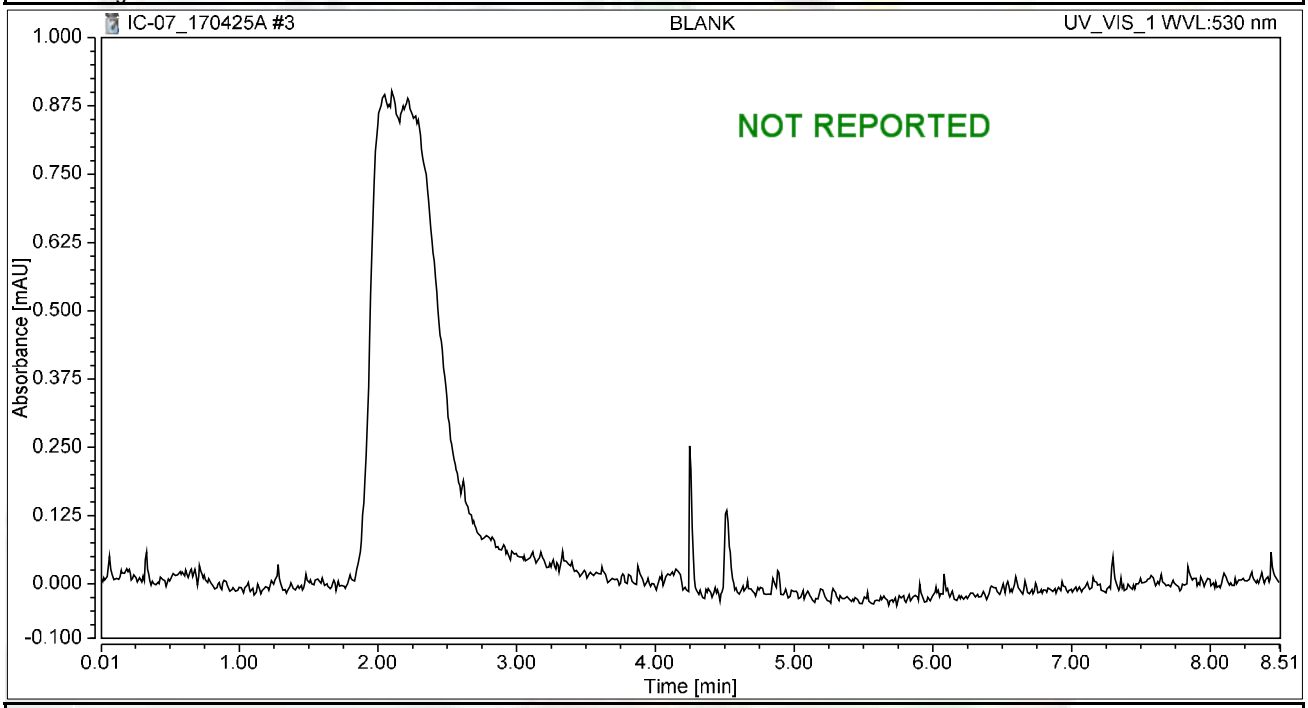
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

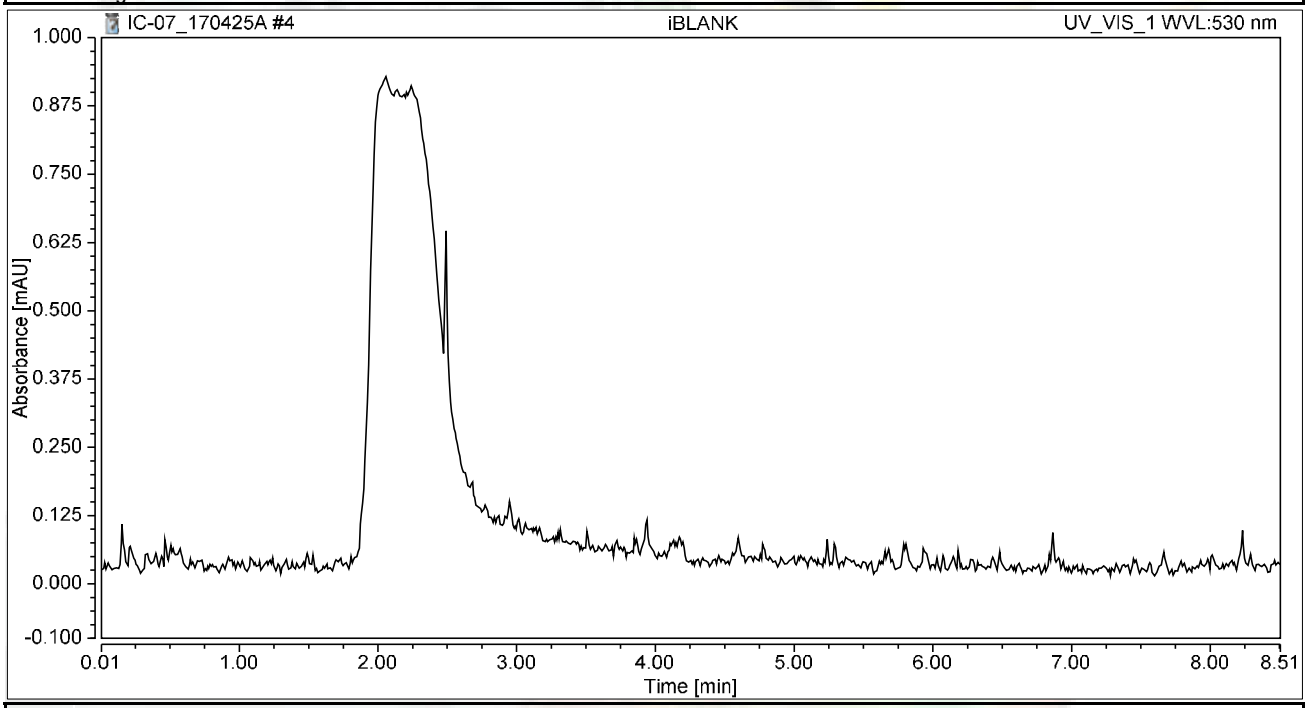
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

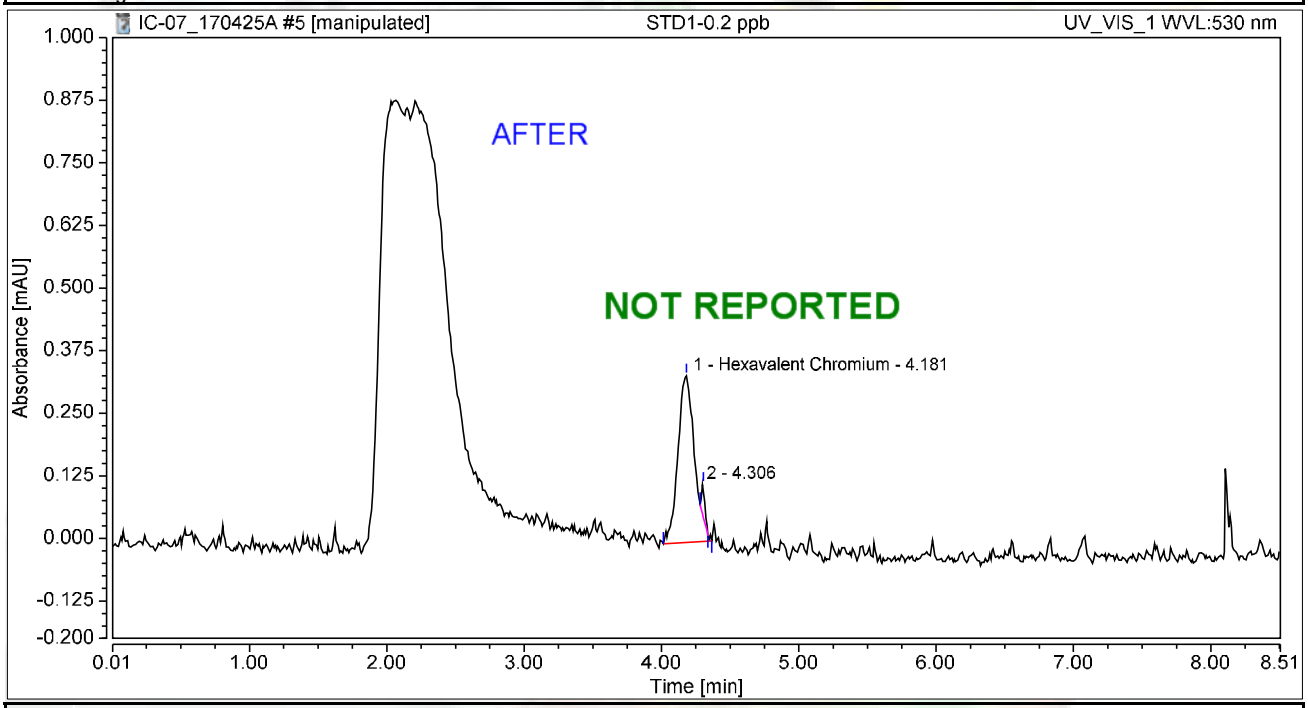
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.046	0.333	96.32	83.12	0.1906
2		4.306	0.002	0.068	3.68	16.88	n.a.
Total:			**0.048**	**0.401**	**100.00**	**100.00**	

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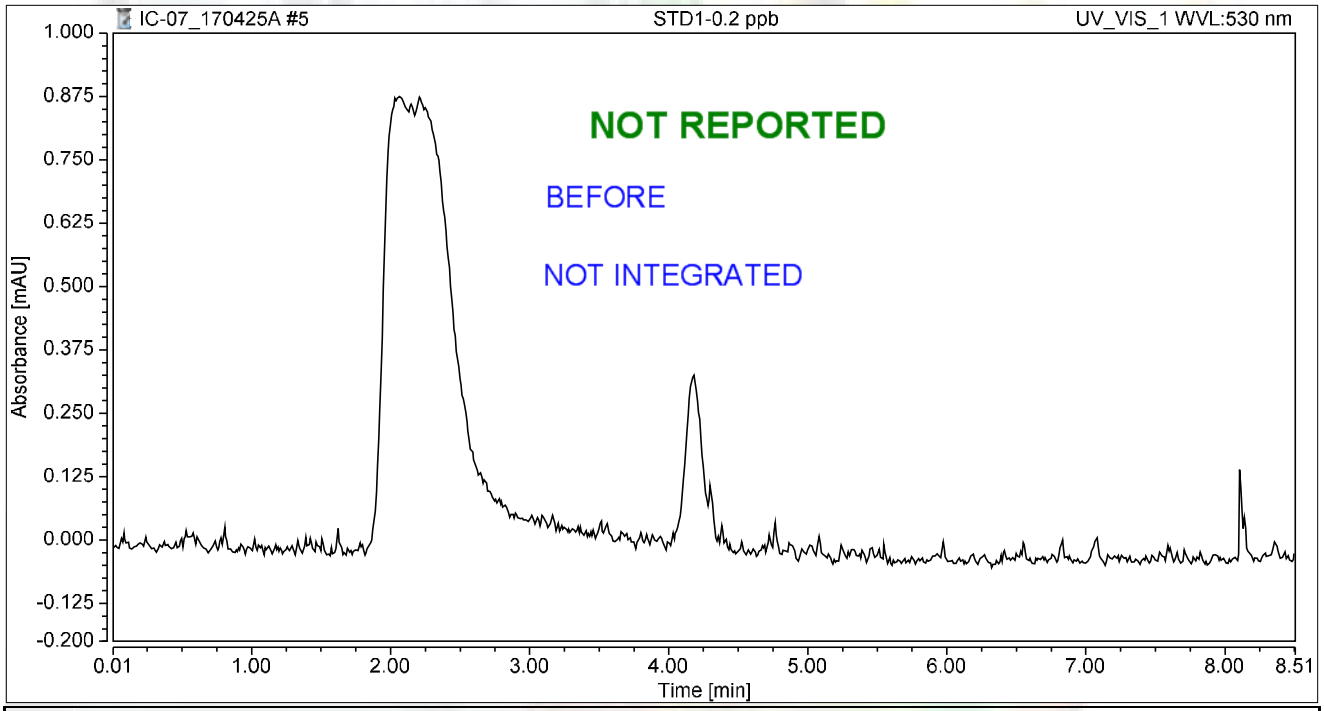
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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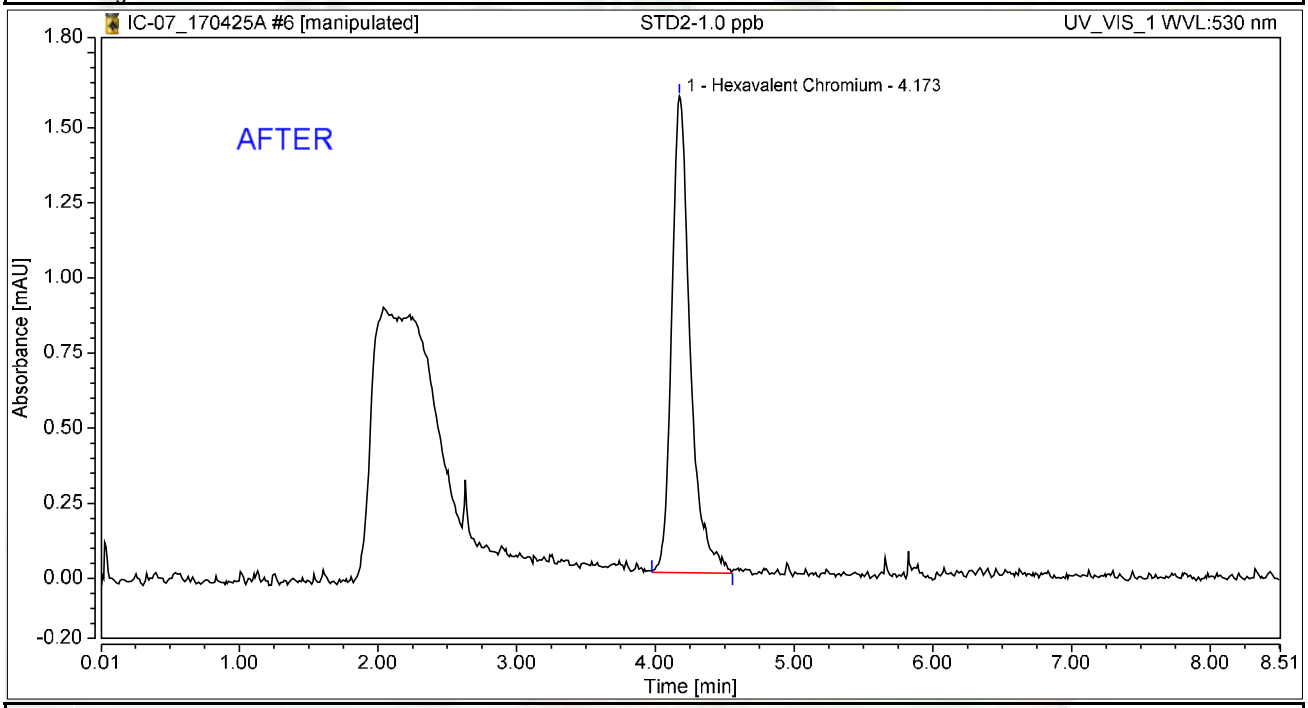
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.244	1.585	100.00	100.00	0.9996
Total:			**0.244**	**1.585**	**100.00**	**100.00**	

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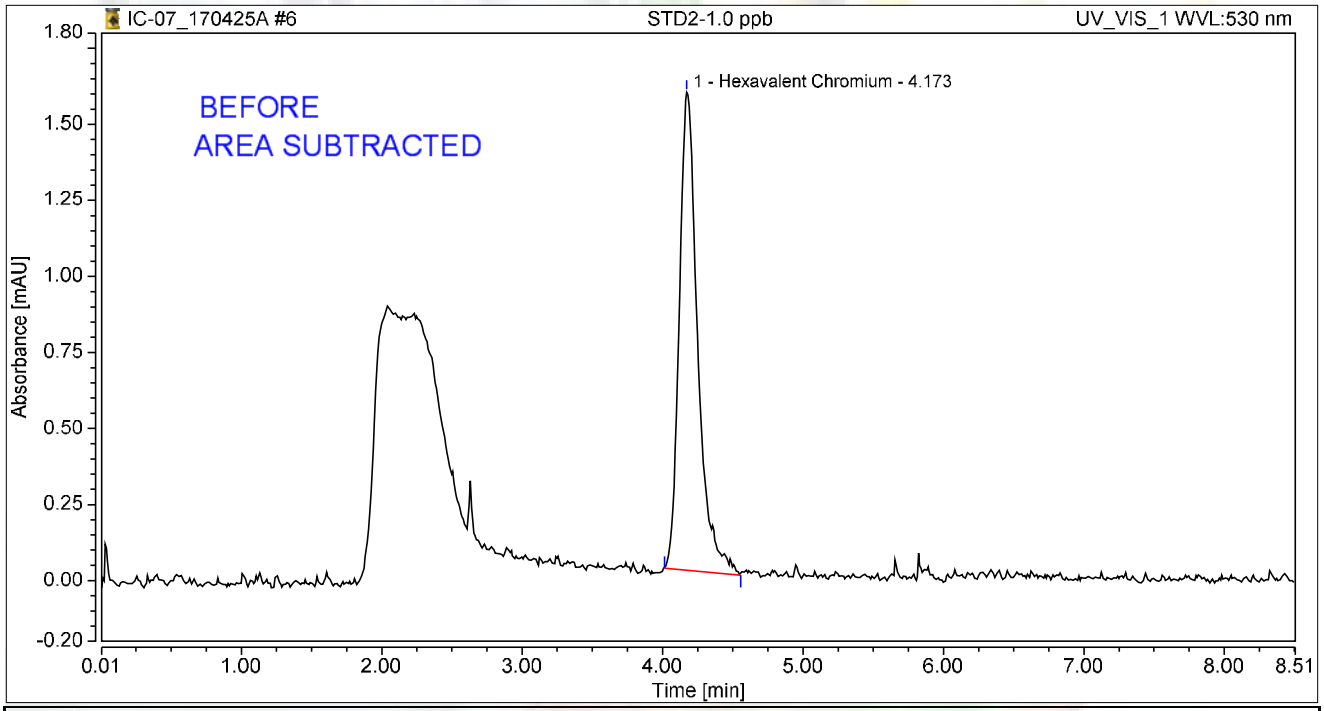
Reviewed by: Nancy 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.238	1.572	100.00	100.00	0.9911
Total:			**0.238**	**1.572**	**100.00**	**100.00**	

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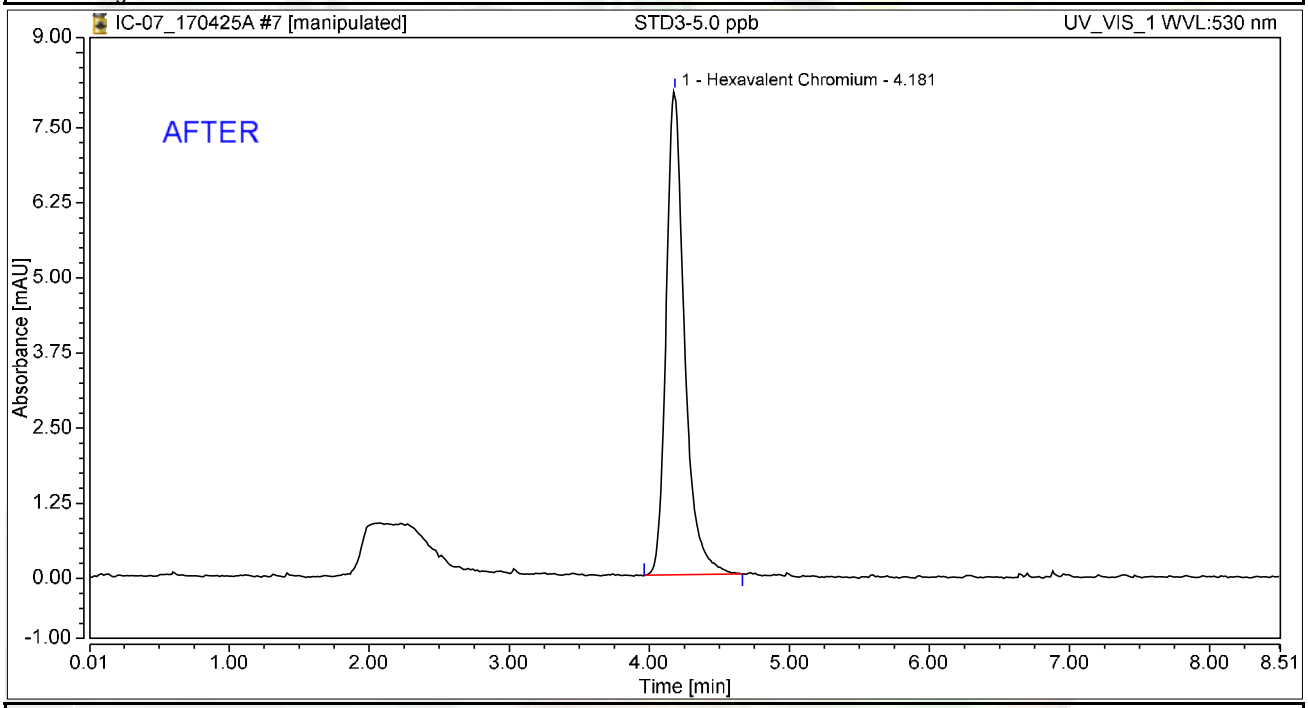
Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.224	8.059	100.00	100.00	5.0198
Total:			**1.224**	**8.059**	**100.00**	**100.00**	

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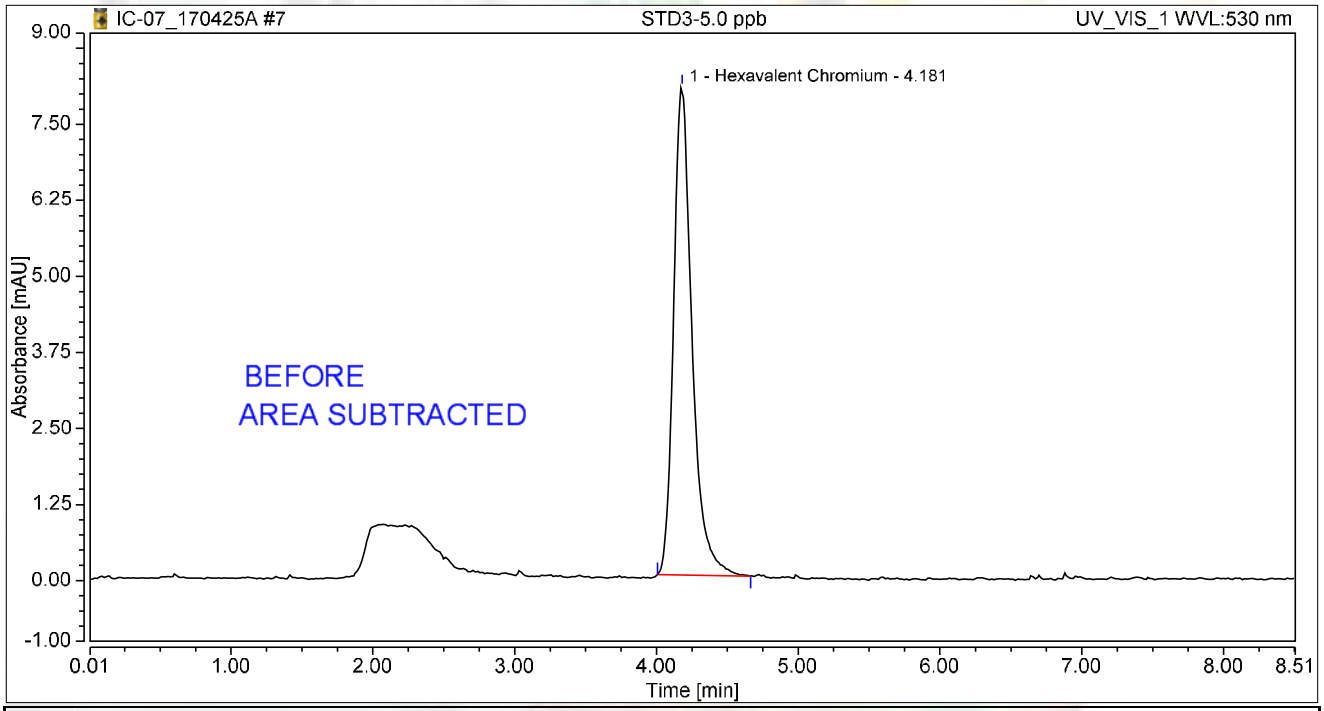
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.209	8.027	100.00	100.00	5.0326
Total:			**1.209**	**8.027**	**100.00**	**100.00**	

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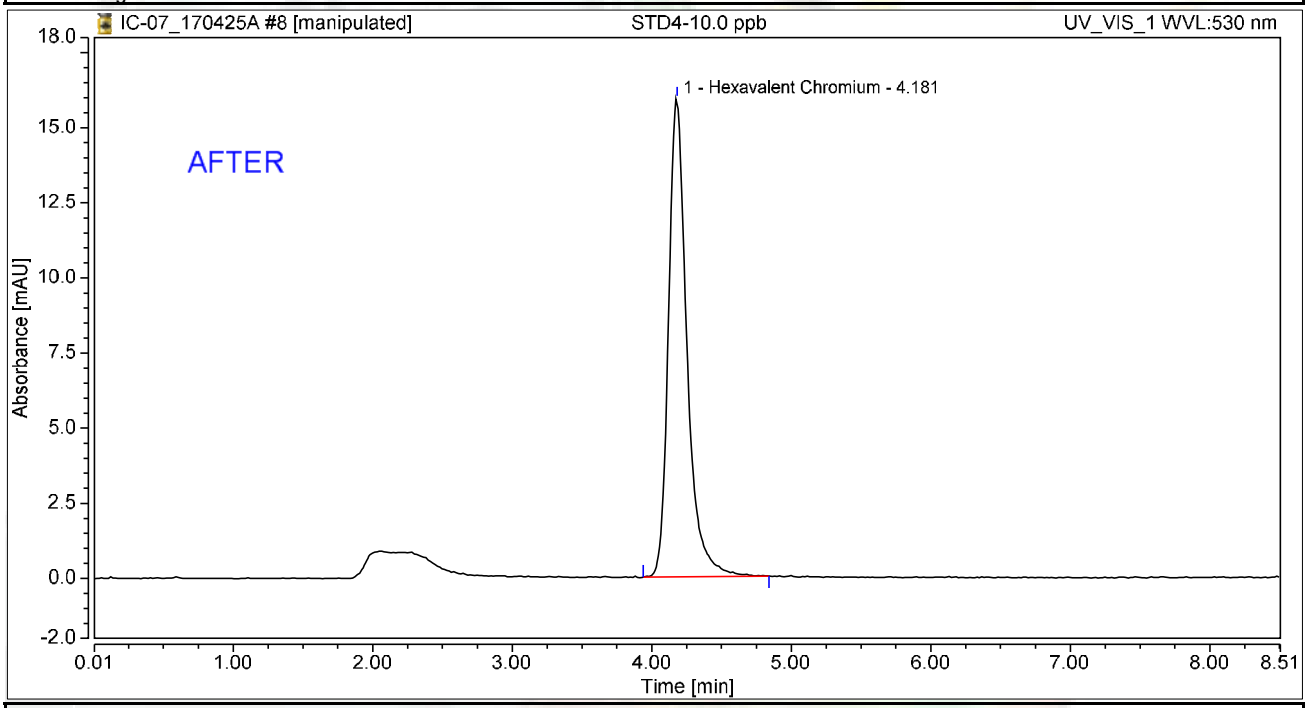
Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.438	15.921	100.00	100.00	9.9965
Total:			**2.438**	**15.921**	**100.00**	**100.00**	

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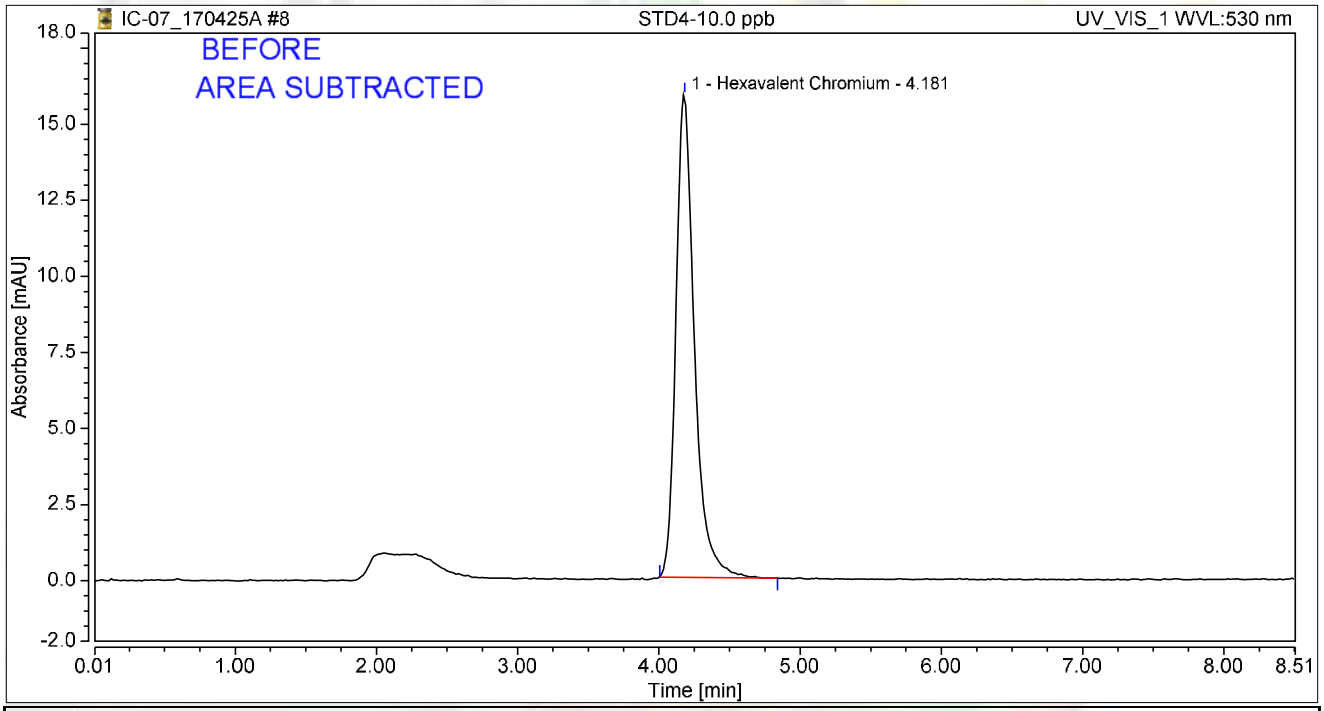
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.407	15.865	100.00	100.00	10.0165
Total:			**2.407**	**15.865**	**100.00**	**100.00**	

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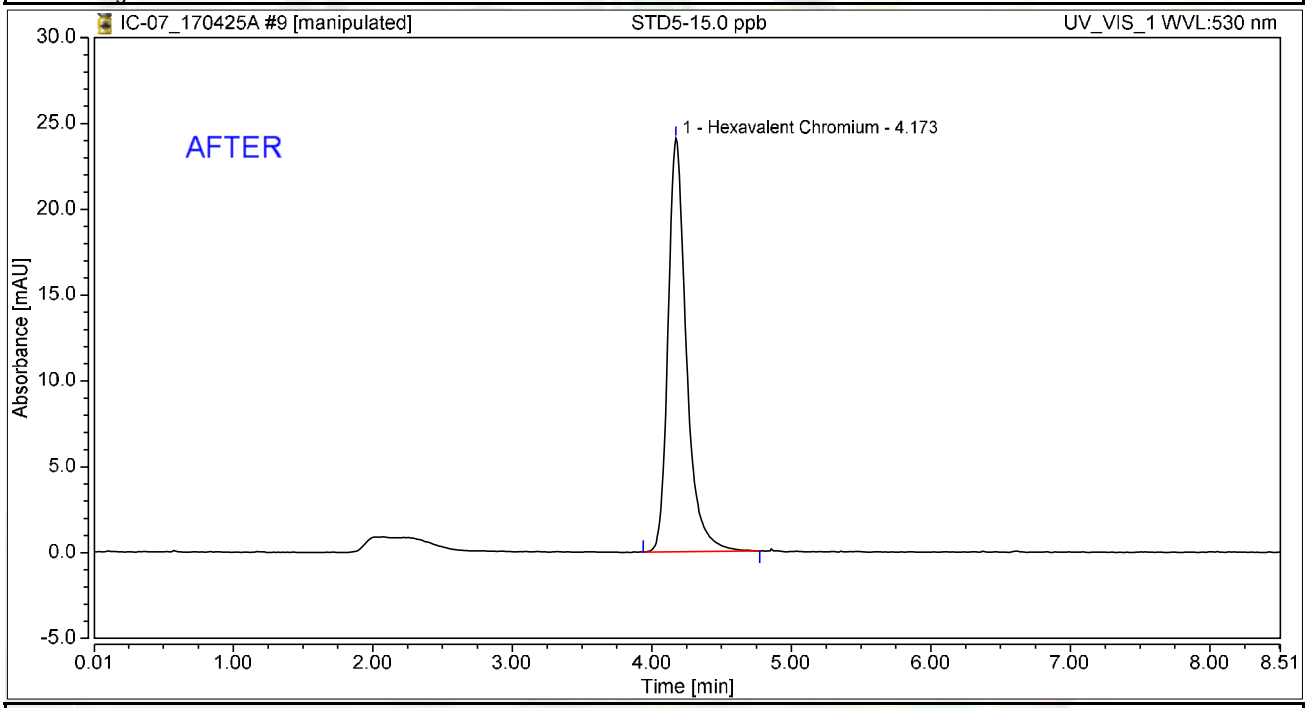
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.664	24.088	100.00	100.00	15.0230
Total:			**3.664**	**24.088**	**100.00**	**100.00**	

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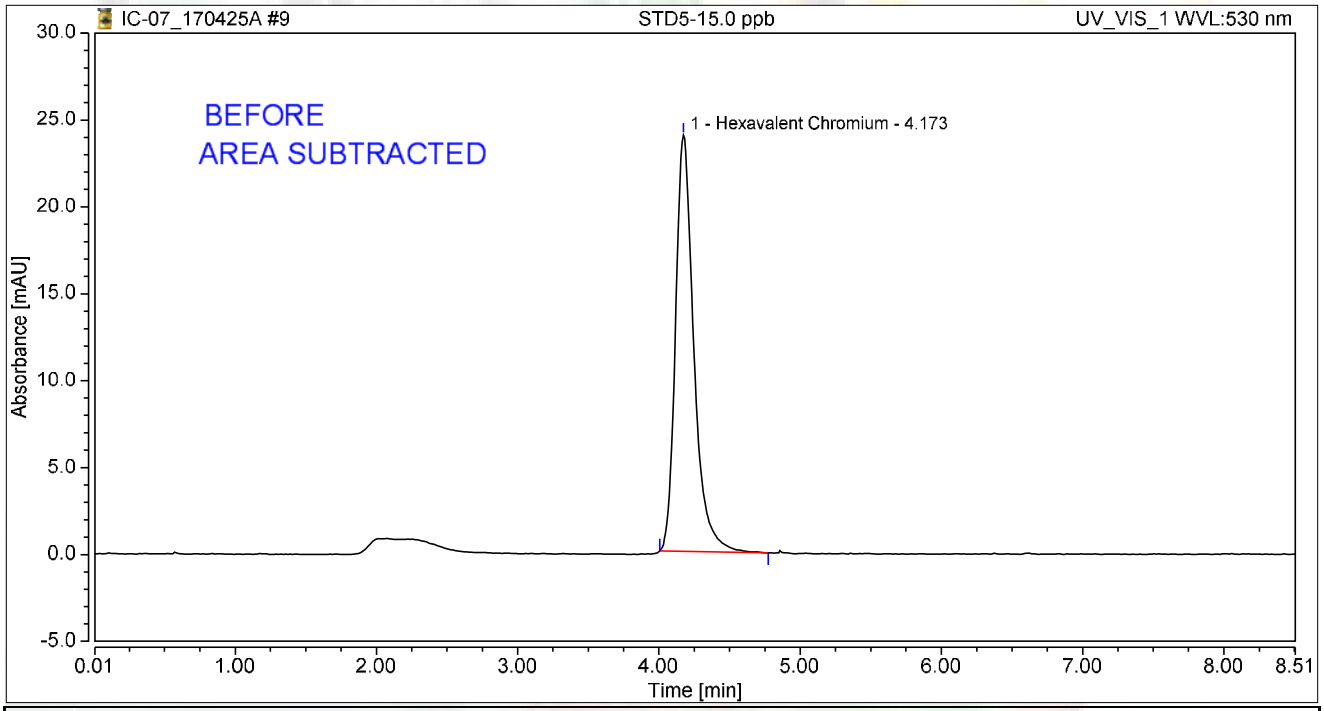
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.597	23.956	100.00	100.00	14.9652
Total:			**3.597**	**23.956**	**100.00**	**100.00**	

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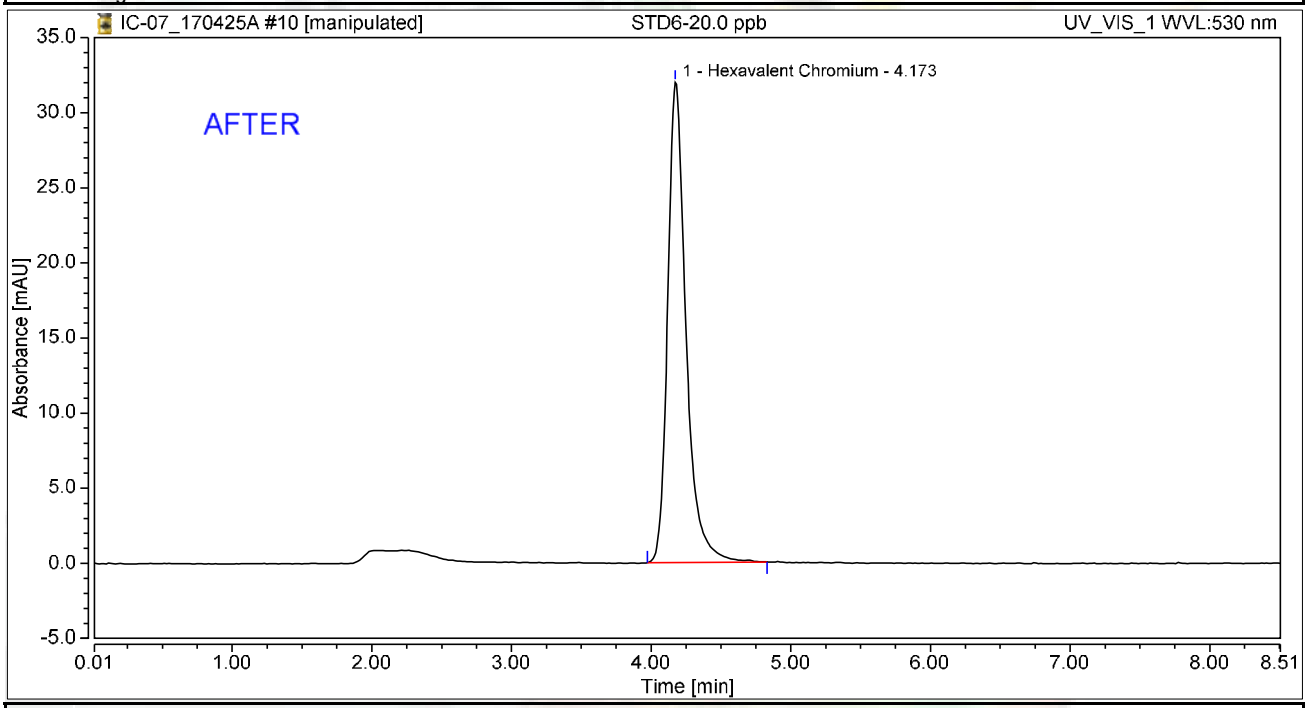
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.873	31.978	100.00	100.00	19.9794
Total:			**4.873**	**31.978**	**100.00**	**100.00**	

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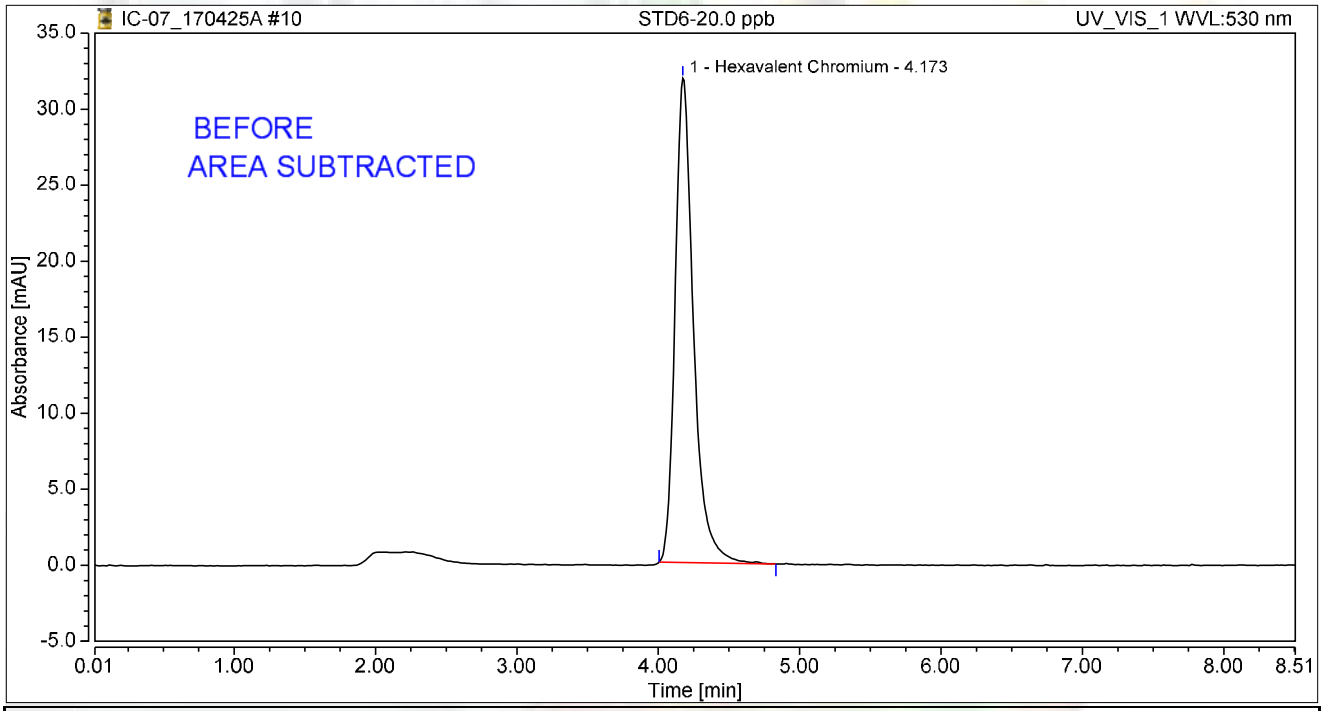
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.809	31.858	100.00	100.00	20.0099
Total:			**4.809**	**31.858**	**100.00**	**100.00**	

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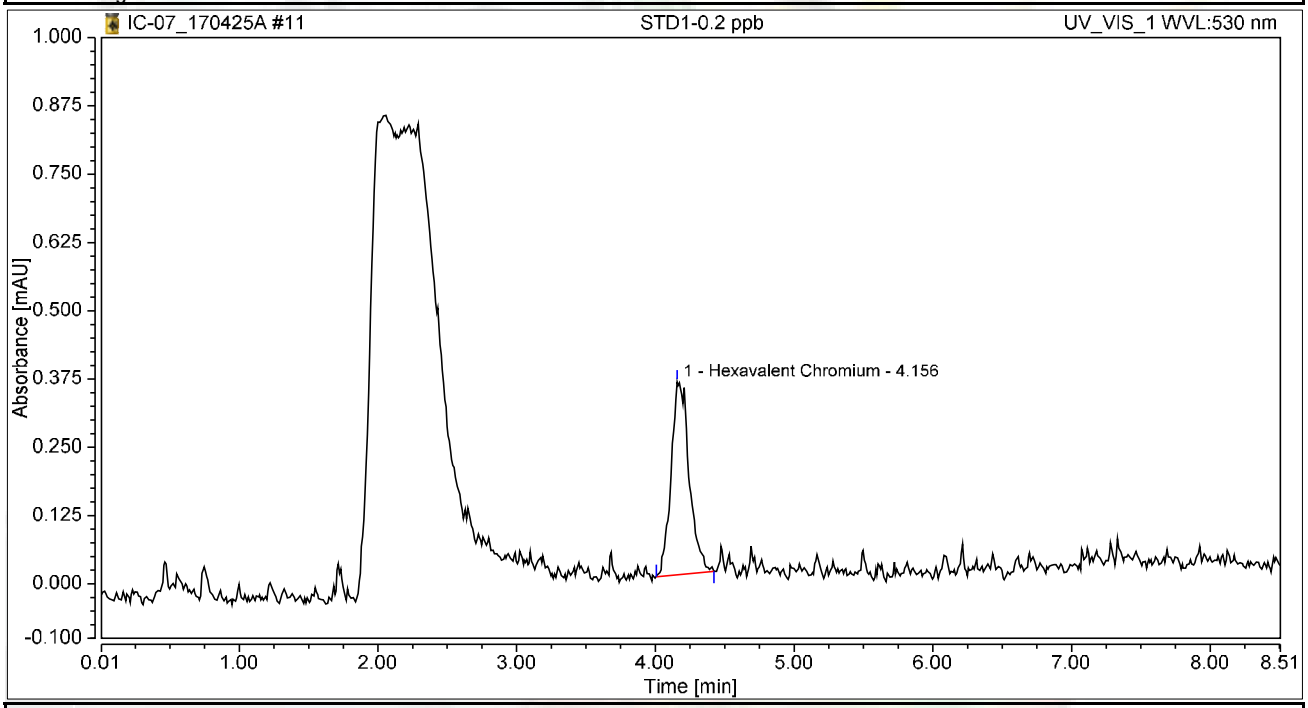
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



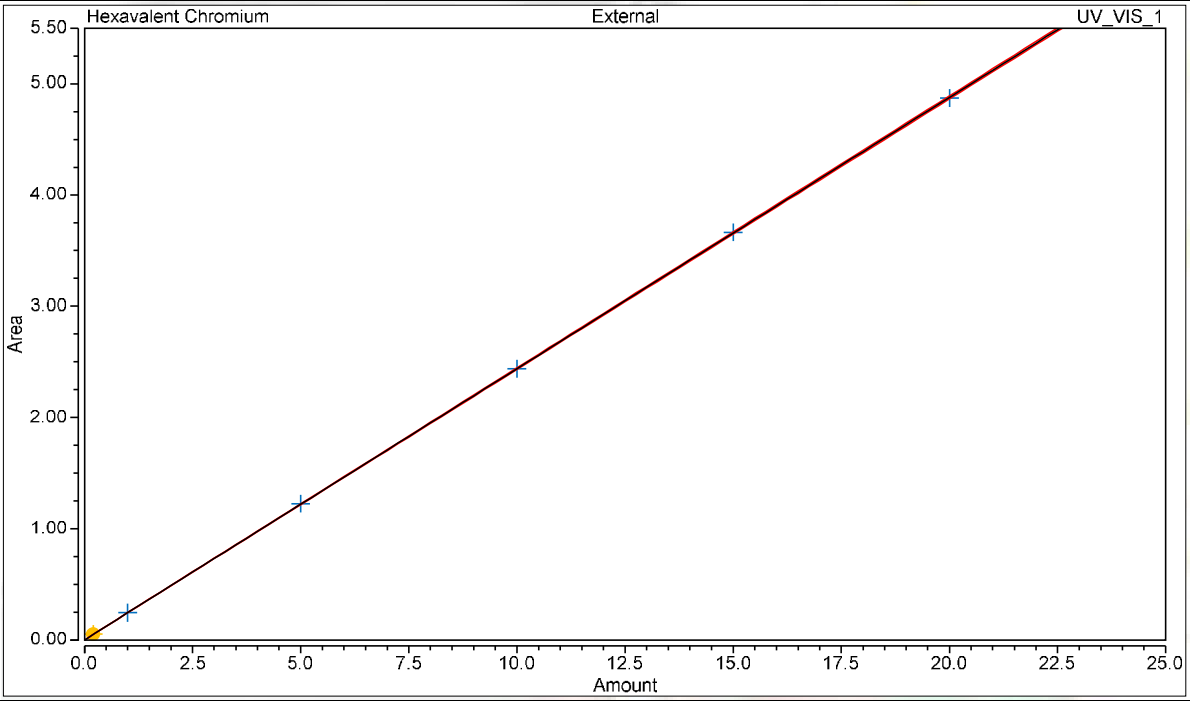
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.054	0.353	100.00	100.00	0.2201
Total:			**0.054**	**0.353**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2439
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99999

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

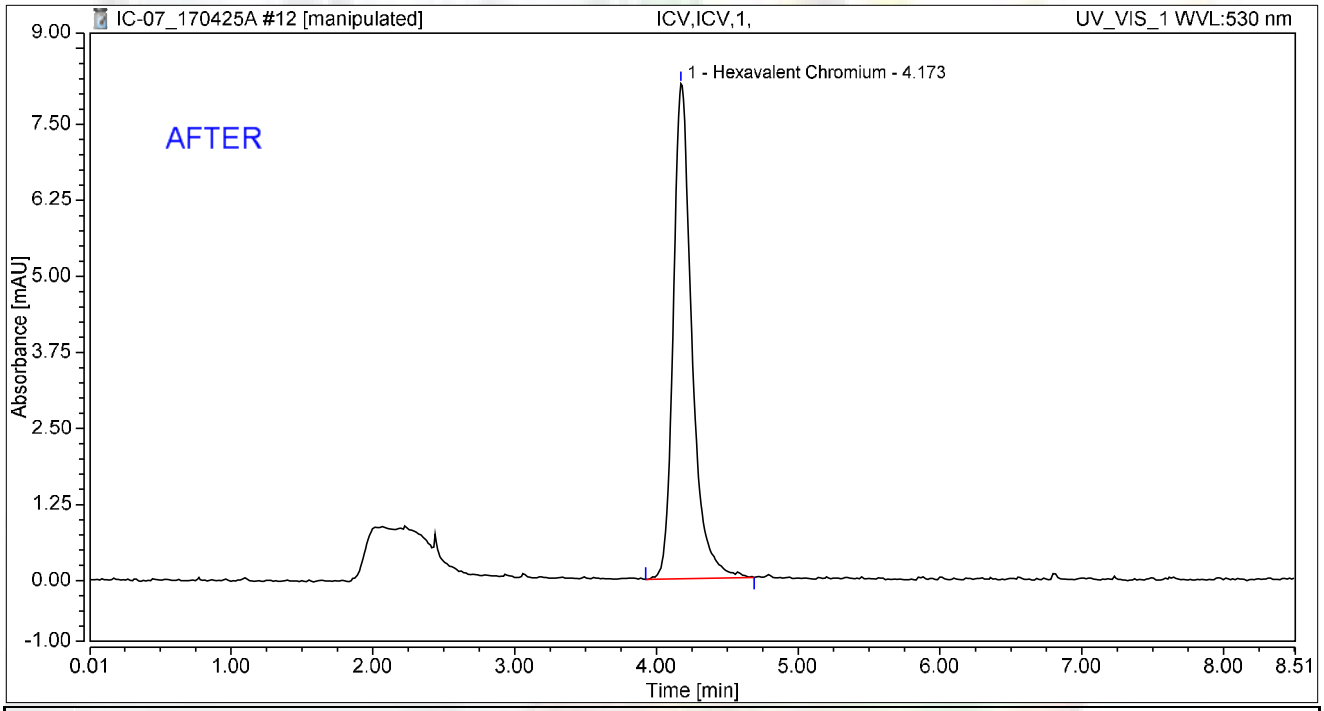
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD2-1.0 ppb	02	1.0000	0.2438	0.244	1.585
7	STD3-5.0 ppb	03	5.0000	1.2243	1.224	8.059
8	STD4-10.0 ppb	04	10.0000	2.4380	2.438	15.921
9	STD5-15.0 ppb	05	15.0000	3.6639	3.664	24.088
10	STD6-20.0 ppb	06	20.0000	4.8727	4.873	31.978
11	STD1-0.2 ppb	01	0.2000	0.0537	0.054	0.353

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.241	8.139	100.00	100.00	5.0868
Total:			**1.241**	**8.139**	**100.00**	**100.00**	

rba 4/30/2017

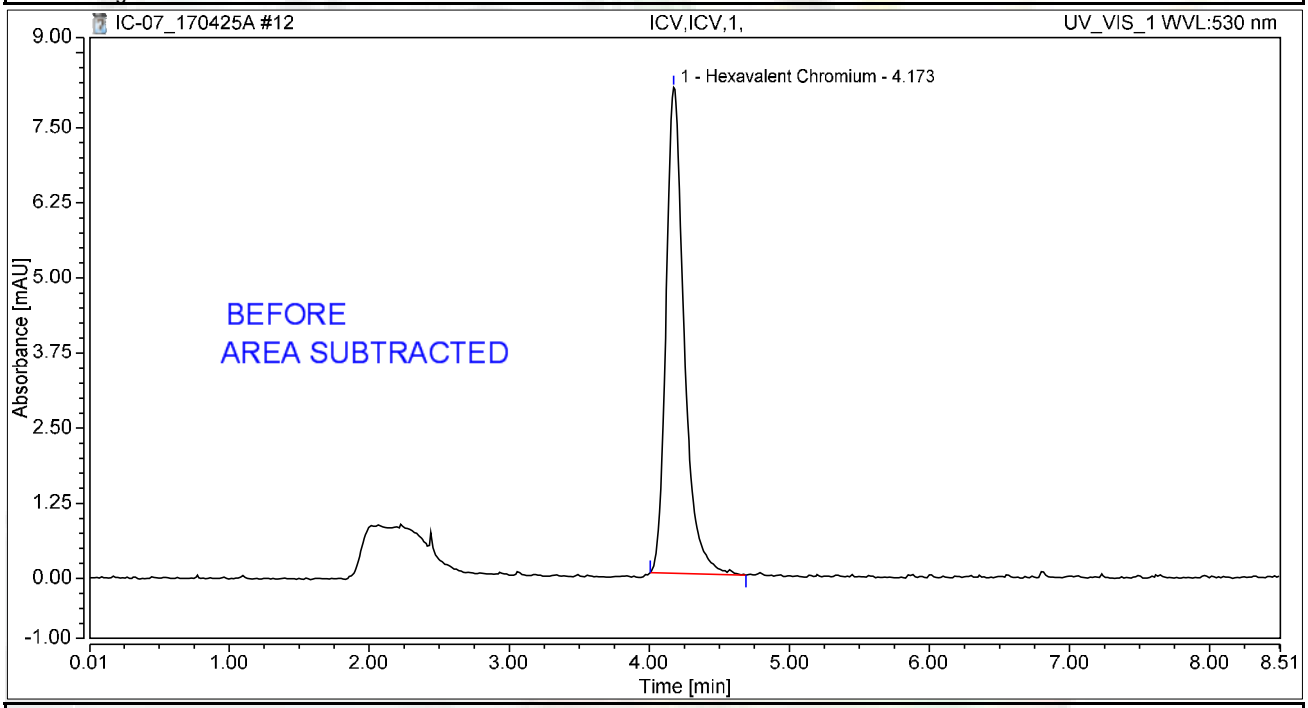
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.212	8.081	100.00	100.00	4.9703
Total:			**1.212**	**8.081**	**100.00**	**100.00**	

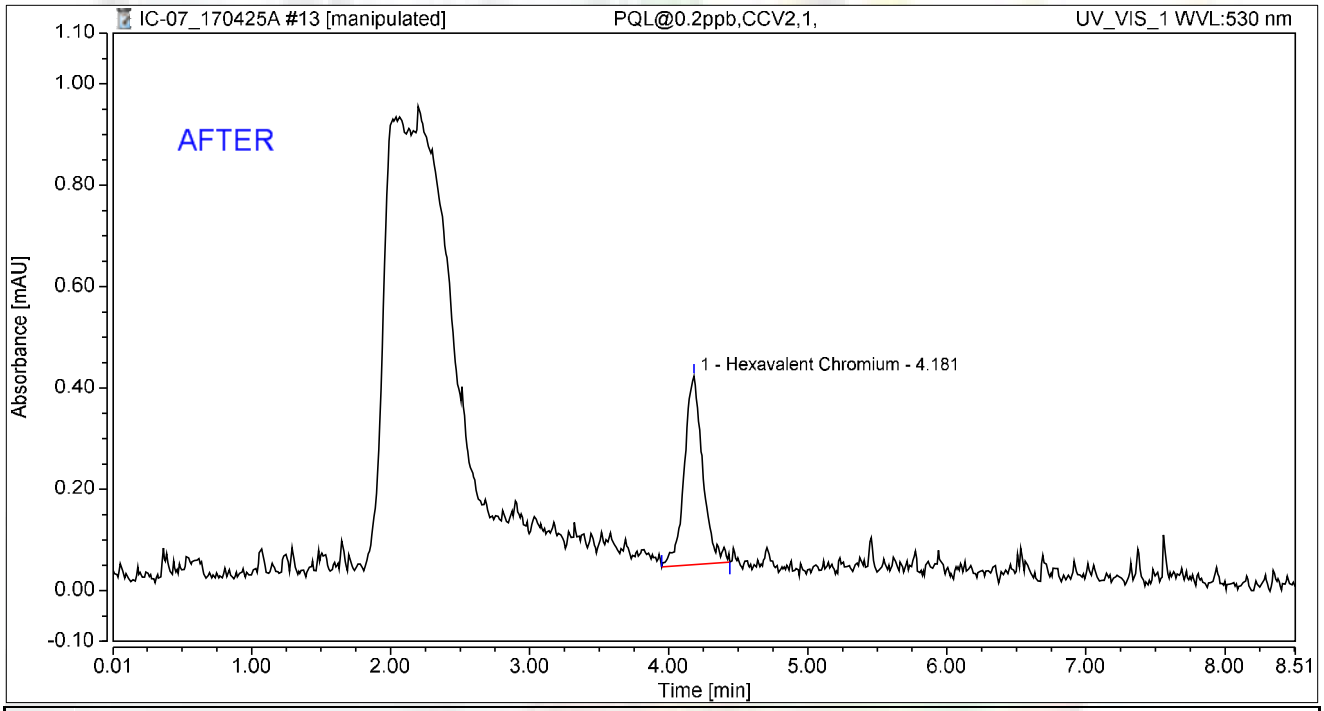
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.057	0.372	100.00	100.00	0.2353
Total:			**0.057**	**0.372**	**100.00**	**100.00**	

rba 4/30/2017

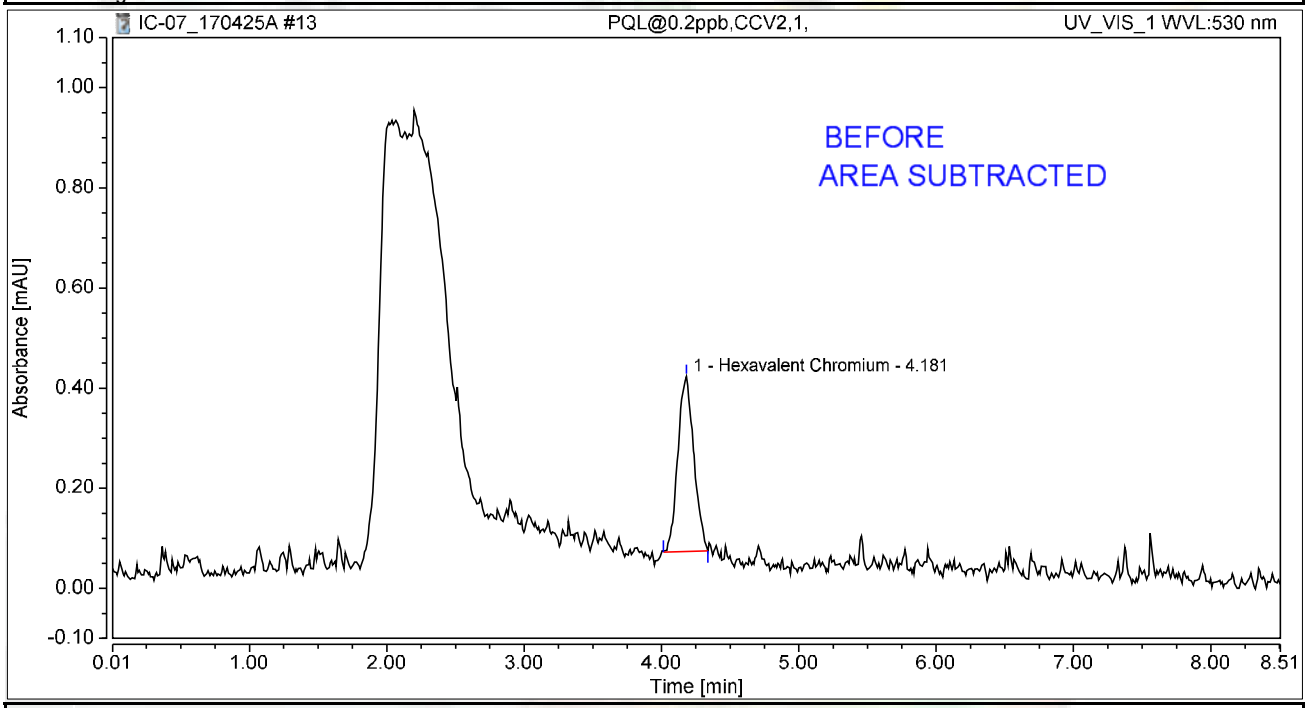
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.047	0.349	100.00	100.00	0.1927
Total:			**0.047**	**0.349**	**100.00**	**100.00**	

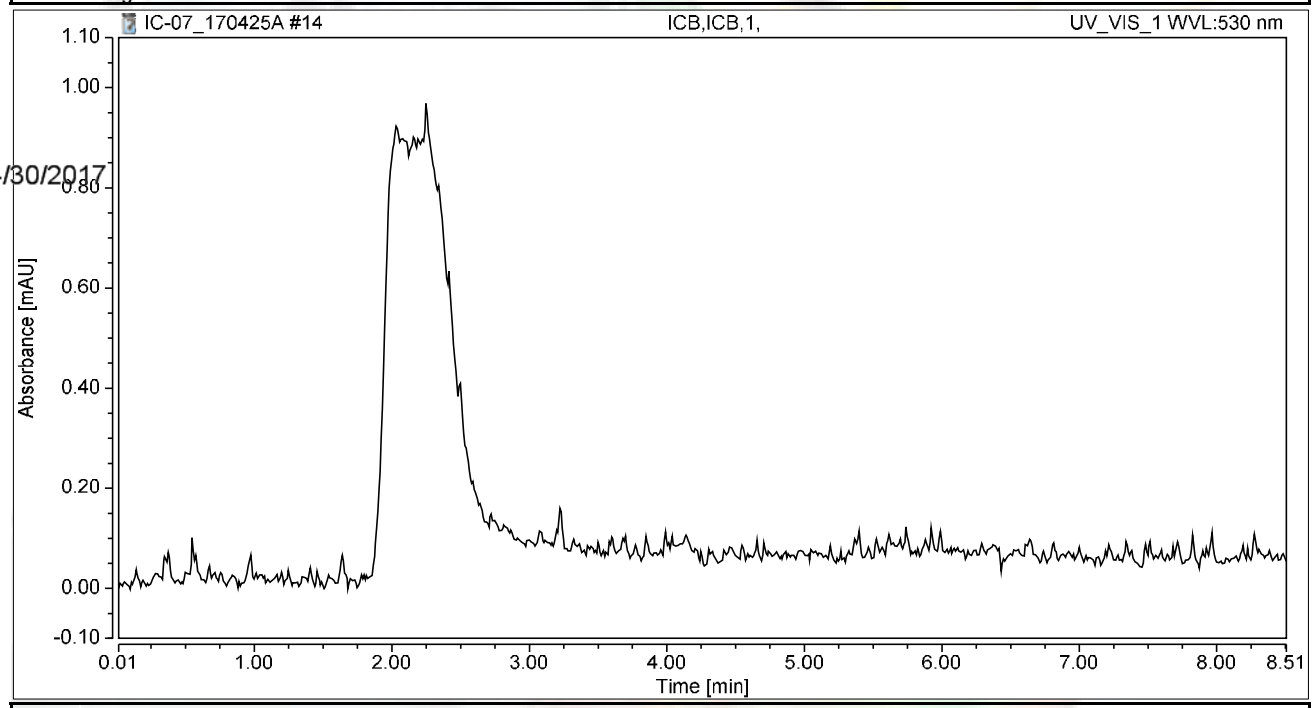
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



rba 4/30/2017

Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170505A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/05/17 8:16 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/05/17 8:27 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/05/17 8:36 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/05/17 8:46 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/05/17 8:55 AM	Reported
17	MB-R115084	MBLK	1	Hexavalent Chromium	05/05/17 9:05 AM	Reported
18	LCS-R115084	LCS	1	Hexavalent Chromium	05/05/17 9:14 AM	Reported
19	N024064-013A	SAMP	5	Hexavalent Chromium	05/05/17 9:26 AM	Reported
20	N024064-013AMS	MS	5	Hexavalent Chromium	05/05/17 9:37 AM	Reported
21	N024064-015A	SAMP	1	Hexavalent Chromium	05/05/17 9:46 AM	Reported
22	N024064-015AMS	MS	1	Hexavalent Chromium	05/05/17 9:55 AM	Reported
23	N024074-001A	SAMP	1	Hexavalent Chromium	05/05/17 10:05 AM	Reported
24	N024074-001AMS	MS	1	Hexavalent Chromium	05/05/17 10:14 AM	Reported
25	N024074-002A	SAMP	20	Hexavalent Chromium	05/05/17 10:24 AM	Not Reported
26	N024074-002AMS	MS	20	Hexavalent Chromium	05/05/17 10:33 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/05/17 10:43 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/05/17 10:52 AM	Reported
29	N024074-003A	SAMP	100	Hexavalent Chromium	05/05/17 11:02 AM	Reported
30	N024074-003AMS	MS	100	Hexavalent Chromium	05/05/17 11:11 AM	Reported
31	N024074-004A	SAMP	100	Hexavalent Chromium	05/05/17 11:21 AM	Reported
32	N024074-004AMS	MS	100	Hexavalent Chromium	05/05/17 11:30 AM	Reported
33	N024074-005A	SAMP	100	Hexavalent Chromium	05/05/17 11:40 AM	Reported
34	N024074-005AMS	MS	100	Hexavalent Chromium	05/05/17 11:49 AM	Reported
35	N024074-008A	SAMP	200	Hexavalent Chromium	05/05/17 11:59 AM	Reported
36	N024074-008AMS	MS	200	Hexavalent Chromium	05/05/17 12:08 PM	Reported
37	N024074-009A	SAMP	20	Hexavalent Chromium	05/05/17 12:17 PM	Reported
38	N024074-009AMS	MS	20	Hexavalent Chromium	05/05/17 12:27 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/05/17 12:36 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/05/17 12:46 PM	Reported
41	N024074-006A	SAMP	1	Hexavalent Chromium	05/05/17 12:55 PM	Not Reported
42	N024074-006AMS	MS	1	Hexavalent Chromium	05/05/17 1:05 PM	Not Reported

rba 5/9/2017

5/15/2017

IC-07 RBA 5/9/2017 1:13 PM

INJECTION LOG: 170505A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024074-007A	SAMP	1	Hexavalent Chromium	05/05/17 1:14 PM	Reported
44	N024074-007AMS	MS	1	Hexavalent Chromium	05/05/17 1:24 PM	Reported
45	N024074-006A	SAMP	5	Hexavalent Chromium	05/05/17 1:33 PM	Reported
46	N024074-006AMS	MS	5	Hexavalent Chromium	05/05/17 1:43 PM	Reported
47	N024074-002A	SAMP	20	Hexavalent Chromium	05/05/17 1:52 PM	Reported
48	N024074-003ADUP	DUP	100	Hexavalent Chromium	05/05/17 2:02 PM	Reported
49	N024074-008AMSD	MSD	200	Hexavalent Chromium	05/05/17 2:11 PM	Reported
50	CCV-4	CCV1	1	Hexavalent Chromium	05/05/17 2:20 PM	Reported
51	CCB-4	CCB	1	Hexavalent Chromium	05/05/17 2:30 PM	Reported
52	N024074-010A	SAMP	1	Hexavalent Chromium	05/05/17 2:42 PM	Reported
53	N024074-010AMS	MS	1	Hexavalent Chromium	05/05/17 2:54 PM	Not Reported
54	N024074-011A	SAMP	1	Hexavalent Chromium	05/05/17 3:03 PM	Not Reported
55	N024074-011AMS	MS	1	Hexavalent Chromium	05/05/17 3:12 PM	Not Reported
56	N024074-011A	SAMP	5	Hexavalent Chromium	05/05/17 3:22 PM	Reported
57	N024074-011AMS	MS	5	Hexavalent Chromium	05/05/17 3:31 PM	Reported
58	N024074-012A	SAMP	1	Hexavalent Chromium	05/05/17 3:41 PM	Not Reported
59	N024074-012AMS	MS	1	Hexavalent Chromium	05/05/17 4:02 PM	Reported
60	N024074-013A	SAMP	1	Hexavalent Chromium	05/05/17 4:13 PM	Reported
61	N024074-013AMS	MS	1	Hexavalent Chromium	05/05/17 4:22 PM	Reported
62	CCV-5	CCV	1	Hexavalent Chromium	05/05/17 4:32 PM	Reported
63	CCB-5	CCB	1	Hexavalent Chromium	05/05/17 4:41 PM	Reported
64	N024074-010AMS	MS	1	Hexavalent Chromium	05/05/17 4:51 PM	Reported
65	N024107-001A	SAMP	1	Hexavalent Chromium	05/05/17 5:00 PM	Reported
66	N024107-001AMS	MS	1	Hexavalent Chromium	05/05/17 5:09 PM	Reported
67	N024107-002A	SAMP	100	Hexavalent Chromium	05/05/17 5:19 PM	Reported
68	N024107-002AMS	MS	100	Hexavalent Chromium	05/05/17 5:28 PM	Reported
69	N024018-005A	SAMP	1	Hexavalent Chromium	05/05/17 5:38 PM	Not Reported
70	N024018-005AMS	MS	1	Hexavalent Chromium	05/05/17 5:47 PM	Not Reported
71	N024037-001A	SAMP	1	Hexavalent Chromium	05/05/17 5:57 PM	Not Reported
72	N024037-001AMS	MS	1	Hexavalent Chromium	05/05/17 6:06 PM	Not Reported
73	CCV-6	CCV1	1	Hexavalent Chromium	05/05/17 6:16 PM	Reported
74	CCB-6	CCB	1	Hexavalent Chromium	05/05/17 6:25 PM	Reported
75	N024074-012A	SAMP	1	Hexavalent Chromium	05/05/17 6:35 PM	Reported
76	CCV-7	CCV	1	Hexavalent Chromium	05/05/17 6:44 PM	Reported
77	CCB-7	CCB	1	Hexavalent Chromium	05/05/17 6:54 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170505A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**08/May/17 09:21:23**
No. of Injections:	**80**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/05/2017 08:16	Finished	
13	BLANK	2	1000	Unknown		05/05/2017 08:27	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/05/2017 08:36	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/05/2017 08:46	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/05/2017 08:55	Finished	CCB R170419B
17	MB-H2O,MBLK,1	6	1000	Unknown		05/05/2017 09:05	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/05/2017 09:14	Finished	LCS, IWST-170330B
19	N024064-013A,SAMF	8	1000	Unknown		05/05/2017 09:26	Finished	SAMP, 2>10mL
20	N024064-013AMS,MS	9	1000	Unknown		05/05/2017 09:37	Finished	MS (1ppb), IWST-170330B,2>1
21	N024064-015A,SAMF	10	1000	Unknown		05/05/2017 09:46	Finished	SAMP, 10mL
22	N024064-015AMS,MS	11	1000	Unknown		05/05/2017 09:55	Finished	MS (1ppb), IWST-170330B,10
23	N024074-001A,SAMF	12	1000	Unknown		05/05/2017 10:05	Finished	SAMP, 10mL
24	N024074-001AMS,MS	13	1000	Unknown		05/05/2017 10:14	Finished	MS (1ppb), IWST-170330B,10
25	N024074-002A,SAMF	14	1000	Unknown		05/05/2017 10:24	Finished	SAMP,0.5>10mL
26	N024074-002AMS,MS	15	1000	Unknown		05/05/2017 10:33	Finished	MS (5ppb), IWST-170330B,0.5
27	CCV-2,CCV1,1,	16	1000	Unknown		05/05/2017 10:43	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	17	1000	Unknown		05/05/2017 10:52	Finished	CCB R170419B
29	N024074-003A,SAMF	18	1000	Unknown		05/05/2017 11:02	Finished	SAMP, 0.1>10mL
30	N024074-003AMS,MS	19	1000	Unknown		05/05/2017 11:11	Finished	MS (5ppb), IWST-170330B,0.1
31	N024074-004A,SAMF	20	1000	Unknown		05/05/2017 11:21	Finished	SAMP, 0.1>10mL
32	N024074-004AMS,MS	21	1000	Unknown		05/05/2017 11:30	Finished	MS (5ppb), IWST-170330B,0.1
33	N024074-005A,SAMF	22	1000	Unknown		05/05/2017 11:40	Finished	SAMP, 0.1>10mL
34	N024074-005AMS,MS	23	1000	Unknown		05/05/2017 11:49	Finished	MS (5ppb), IWST-170330B,0.1
35	N024074-008A,SAMF	24	1000	Unknown		05/05/2017 11:59	Finished	SAMP, 0.05>10mL
36	N024074-008AMS,MS	25	1000	Unknown		05/05/2017 12:08	Finished	MS (5ppb), IWST-170330B,0.0
37	N024074-009A,SAMF	26	1000	Unknown		05/05/2017 12:17	Finished	SAMP, 0.5>10mL
38	N024074-009AMS,MS	27	1000	Unknown		05/05/2017 12:27	Finished	MS (5ppb), IWST-170330B,0.5
39	CCV-3,CCV,1,	28	1000	Unknown		05/05/2017 12:36	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	29	1000	Unknown		05/05/2017 12:46	Finished	CCB R170419B
41	N024074-006A,SAMF	30	1000	Unknown		05/05/2017 12:55	Finished	SAMP, 10mL
42	N024074-006AMS,MS	31	1000	Unknown		05/05/2017 13:05	Finished	MS (1ppb), IWST-170330B,10
43	N024074-007A,SAMF	32	1000	Unknown		05/05/2017 13:14	Finished	SAMP, 10mL
44	N024074-007AMS,MS	33	1000	Unknown		05/05/2017 13:24	Finished	MS (1ppb), IWST-170330B,10
45	N024074-006A,SAMF	34	1000	Unknown		05/05/2017 13:33	Finished	SAMP, 2>10mL
46	N024074-006AMS,MS	35	1000	Unknown		05/05/2017 13:43	Finished	MS (1ppb), IWST-170330B,2>1
47	N024074-002A,SAMF	36	1000	Unknown		05/05/2017 13:52	Finished	SAMP, 0.5>10mL
48	N024074-003ADUP,D	37	1000	Unknown		05/05/2017 14:02	Finished	DUP, 0.1>10mL
49	N024074-008AMSD,M	38	1000	Unknown		05/05/2017 14:11	Finished	MSD (5ppb), IWST-170330B,0.
50	CCV-4,CCV1,1,	39	1000	Unknown		05/05/2017 14:20	Finished	CCV @10ppb, IWST-170330B
51	CCB-4,CCB,1,	40	1000	Unknown		05/05/2017 14:30	Finished	CCB R170419B
52	N024074-010A,SAMF	1	1000	Unknown		05/05/2017 14:42	Finished	SAMP, 10mL
53	N024074-010AMS,MS	2	1000	Unknown		05/05/2017 14:54	Finished	MS (1ppb), IWST-170330B,10
54	N024074-011A,SAMF	3	1000	Unknown		05/05/2017 15:03	Finished	SAMP, 10mL
55	N024074-011AMS,MS	4	1000	Unknown		05/05/2017 15:12	Finished	MS (1ppb), IWST-170330B,10
56	N024074-011A,SAMF	5	1000	Unknown		05/05/2017 15:22	Finished	SAMP, 2>10mL
57	N024074-011AMS,MS	6	1000	Unknown		05/05/2017 15:31	Finished	MS (1ppb), IWST-170330B,2>1
58	N024074-012A,SAMF	7	1000	Unknown		05/05/2017 15:41	Finished	SAMP, 10mL
59	N024074-012AMS,MS	8	1000	Unknown		05/05/2017 16:02	Finished	MS (1ppb), IWST-170330B,10
60	N024074-013A,SAMF	9	1000	Unknown		05/05/2017 16:13	Finished	SAMP, 10mL

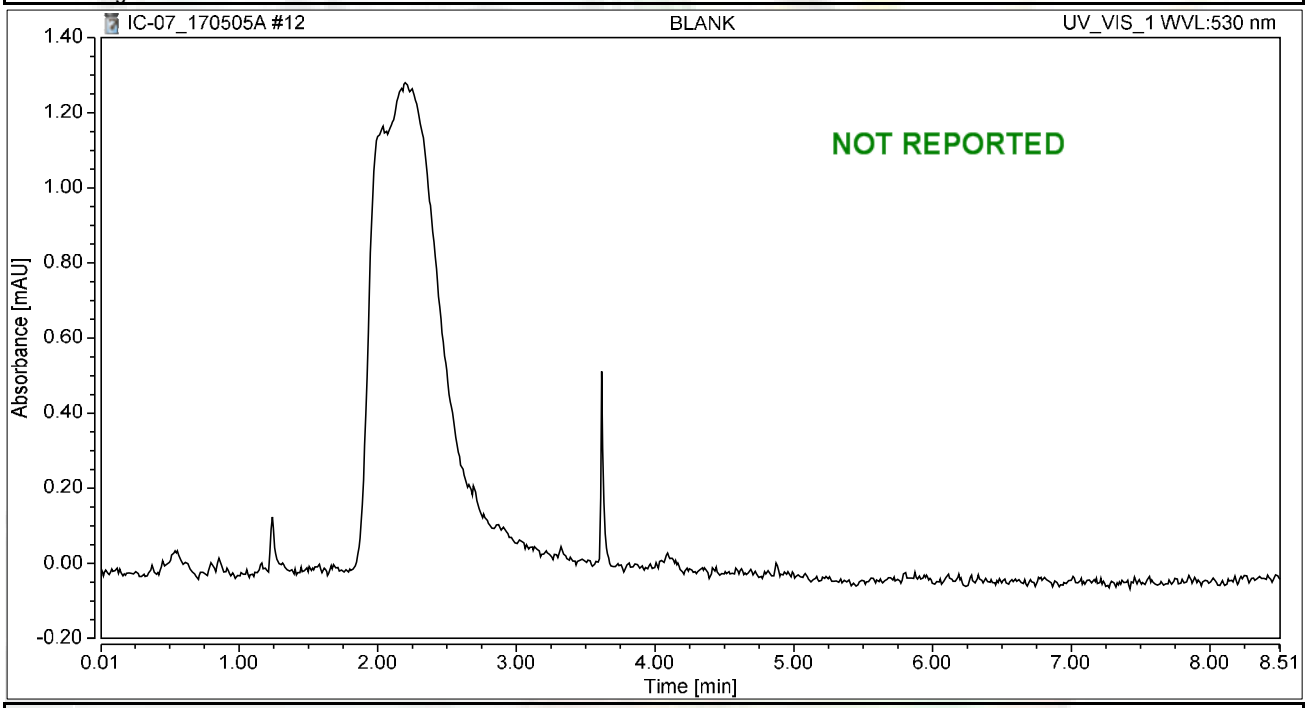
61	N024074-013AMS,MS	10	1000	Unknown		05/05/2017 16:22	Finished	MS (1ppb), IWST-170330B,10
62	CCV-5,CCV,1,	11	1000	Unknown		05/05/2017 16:32	Finished	CCV @5ppb, IWST-170330B
63	CCB-5,CCB,1,	12	1000	Unknown		05/05/2017 16:41	Finished	CCB R170414A
64	N024074-010AMS,MS	13	1000	Unknown		05/05/2017 16:51	Finished	MS (5ppb), IWST-170330B,10
65	N024107-001A,SAMP	14	1000	Unknown		05/05/2017 17:00	Finished	SAMP, 10mL
66	N024107-001AMS,MS	15	1000	Unknown		05/05/2017 17:09	Finished	MS (1ppb), IWST-170330B,10
67	N024107-002A,SAMP	16	1000	Unknown		05/05/2017 17:19	Finished	SAMP, 0.1>10mL
68	N024107-002AMS,MS	17	1000	Unknown		05/05/2017 17:28	Finished	MS (5ppb), IWST-170330B,0.1
69	N024018-005A,SAMP	18	1000	Unknown		05/05/2017 17:38	Finished	SAMP,10mL
70	N024018-005AMS,MS	19	1000	Unknown		05/05/2017 17:47	Finished	MS (1ppb), IWST-170330B,2>1
71	N024037-001A,SAMP	20	1000	Unknown		05/05/2017 17:57	Finished	SAMP,10mL
72	N024037-001AMS,MS	21	1000	Unknown		05/05/2017 18:06	Finished	MS (1ppb), IWST-170330B,2>1
73	CCV-6,CCV1,1,	22	1000	Unknown		05/05/2017 18:16	Finished	CCV @10ppb, IWST-170330B
74	CCB-6,CCB,1,	23	1000	Unknown		05/05/2017 18:25	Finished	CCB R170419B
75	N024074-012A,SAMP	24	1000	Unknown		05/05/2017 18:35	Finished	SAMP, 10mL
76	CCV-7,CCV,1,	25	1000	Unknown		05/05/2017 18:44	Finished	CCV @5ppb, IWST-170330B
77	CCB-7,CCB,1,	26	1000	Unknown		05/05/2017 18:54	Finished	CCB R170419B
78	SHUTDOWN	27	1000	Unknown		05/05/2017 19:03	Finished	
79	Eluent: R170504A	28	1000	Unknown		n.a.	Finished	Eluent
80	PCR: R170504B	29	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 08:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

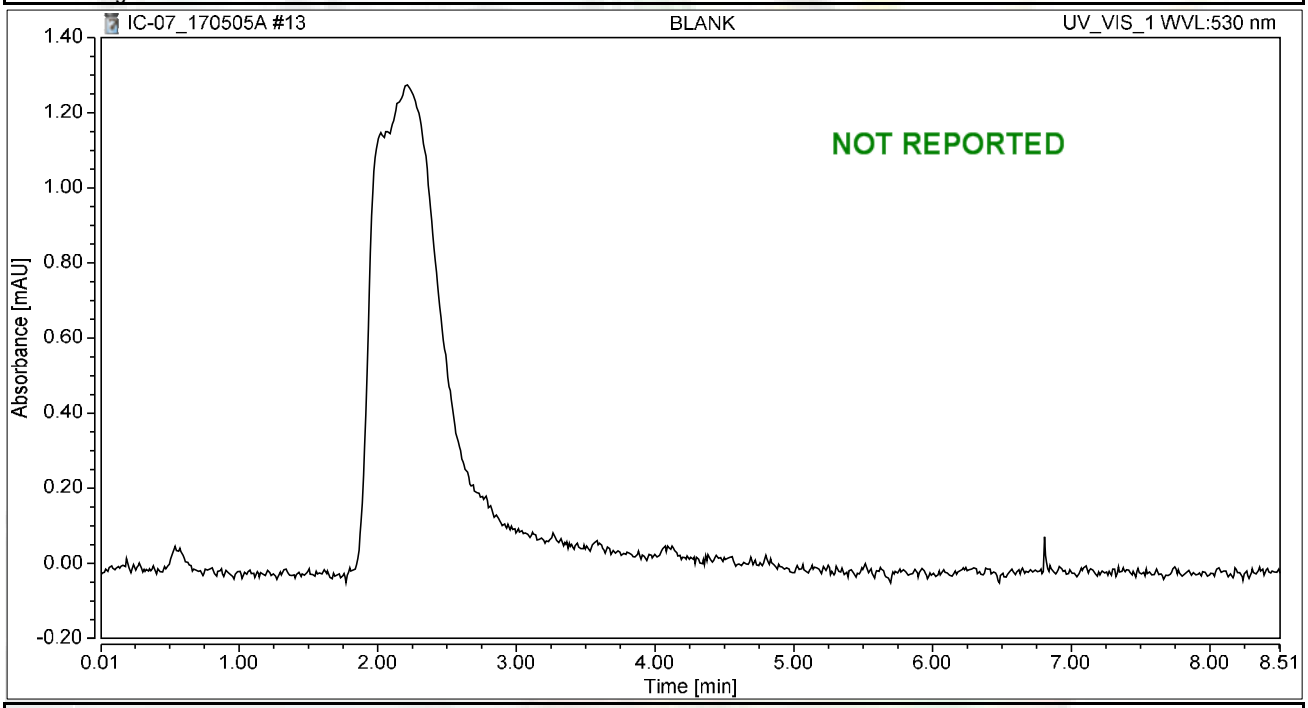
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 08:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

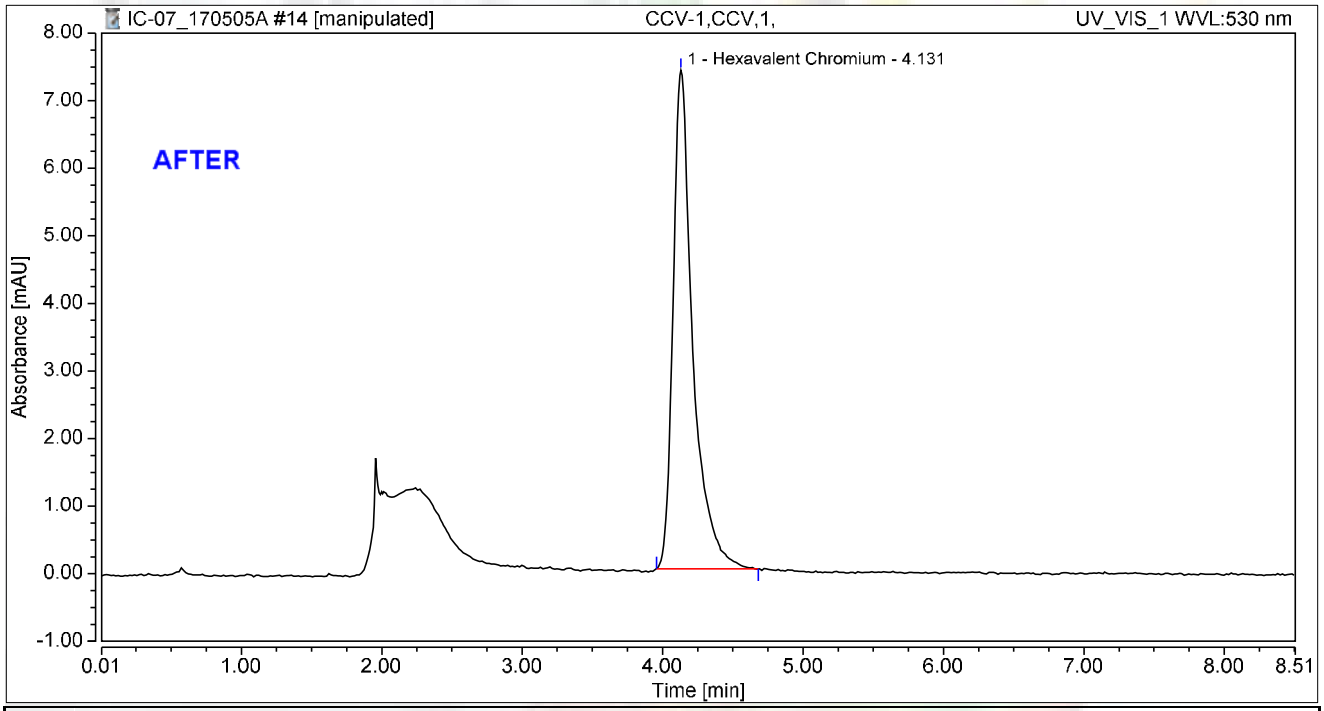
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 08:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.201	7.378	100.00	100.00	4.9258
Total:			**1.201**	**7.378**	**100.00**	**100.00**	

rba 5/9/2017

Reviewed by: Nancy 5/15/2017

My first report/Integration

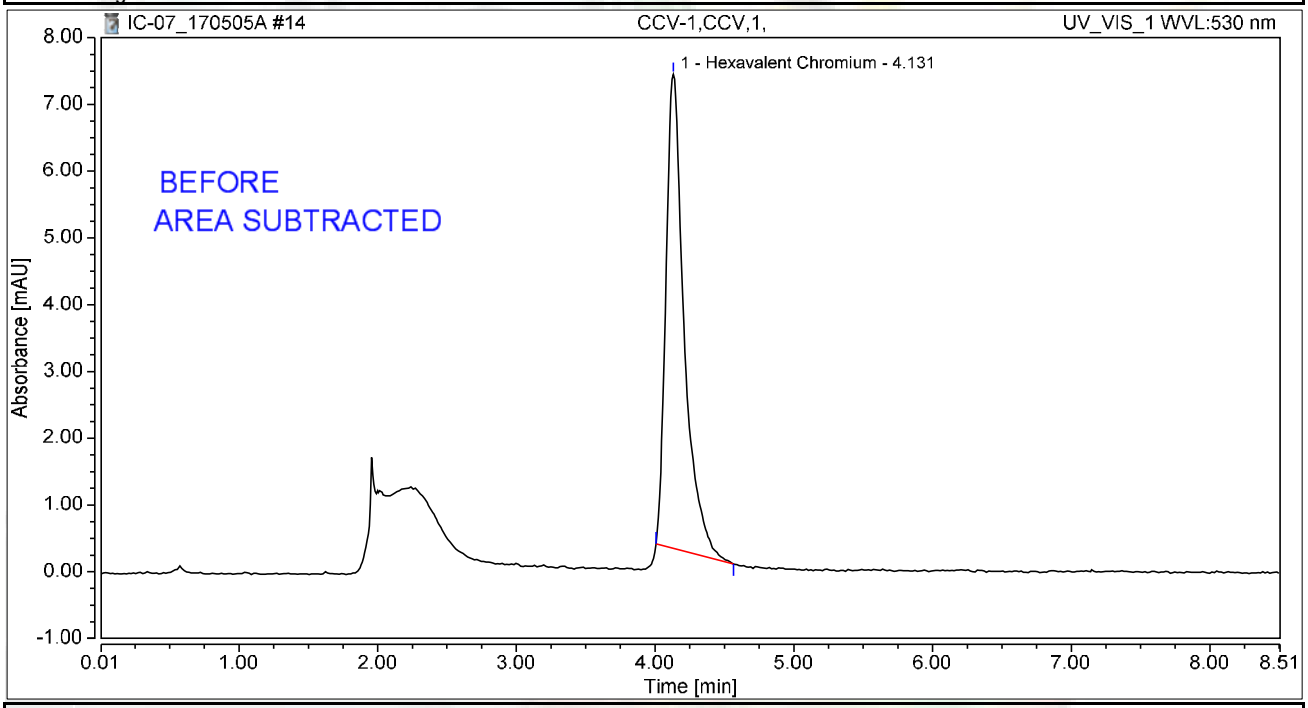
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 08:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.084	7.100	100.00	100.00	4.4445
Total:			**1.084**	**7.100**	**100.00**	**100.00**	

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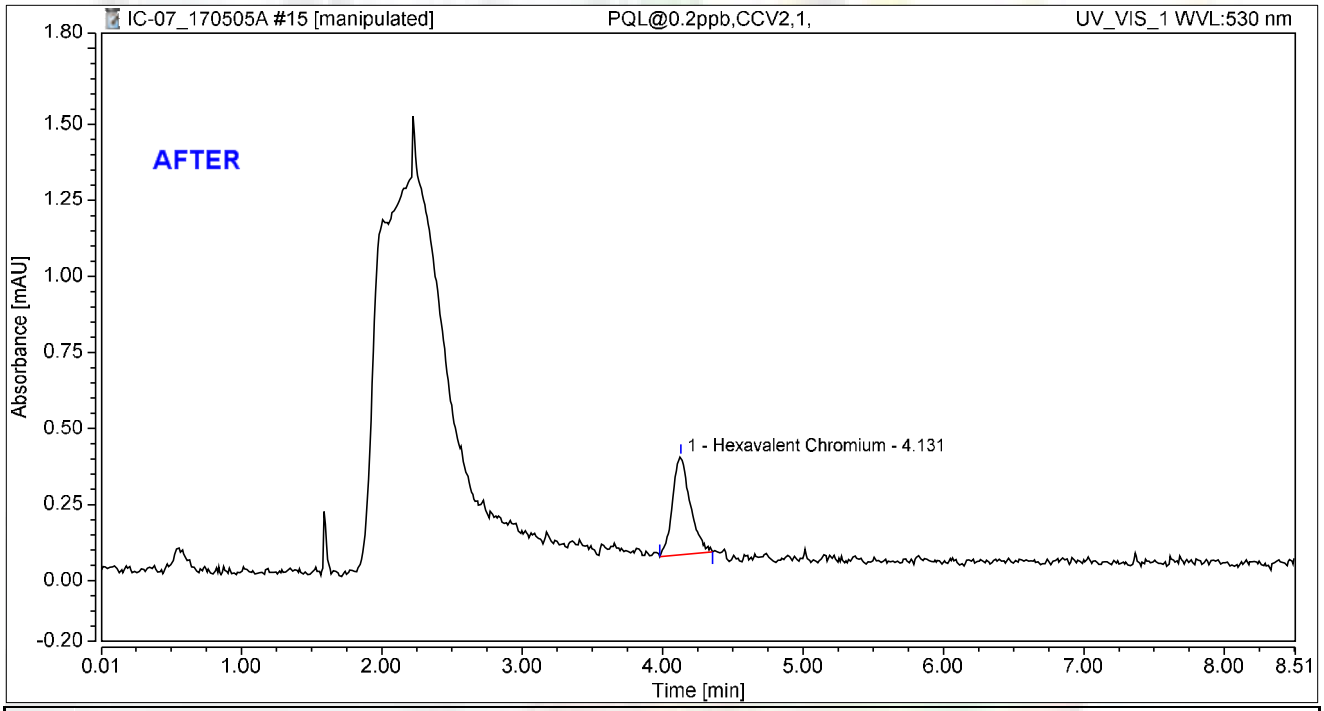
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 08:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.048	0.323	100.00	100.00	0.1949
Total:			**0.048**	**0.323**	**100.00**	**100.00**	

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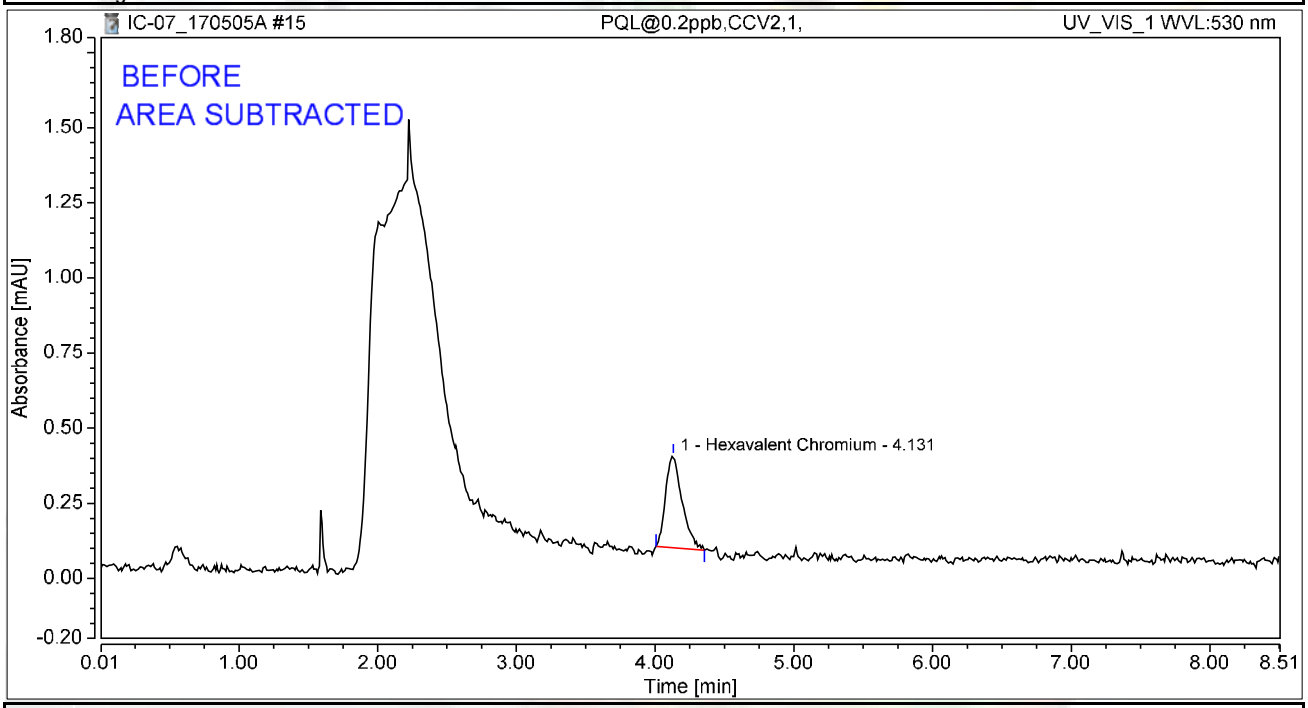
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 08:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.042	0.305	100.00	100.00	0.1736
Total:			**0.042**	**0.305**	**100.00**	**100.00**	

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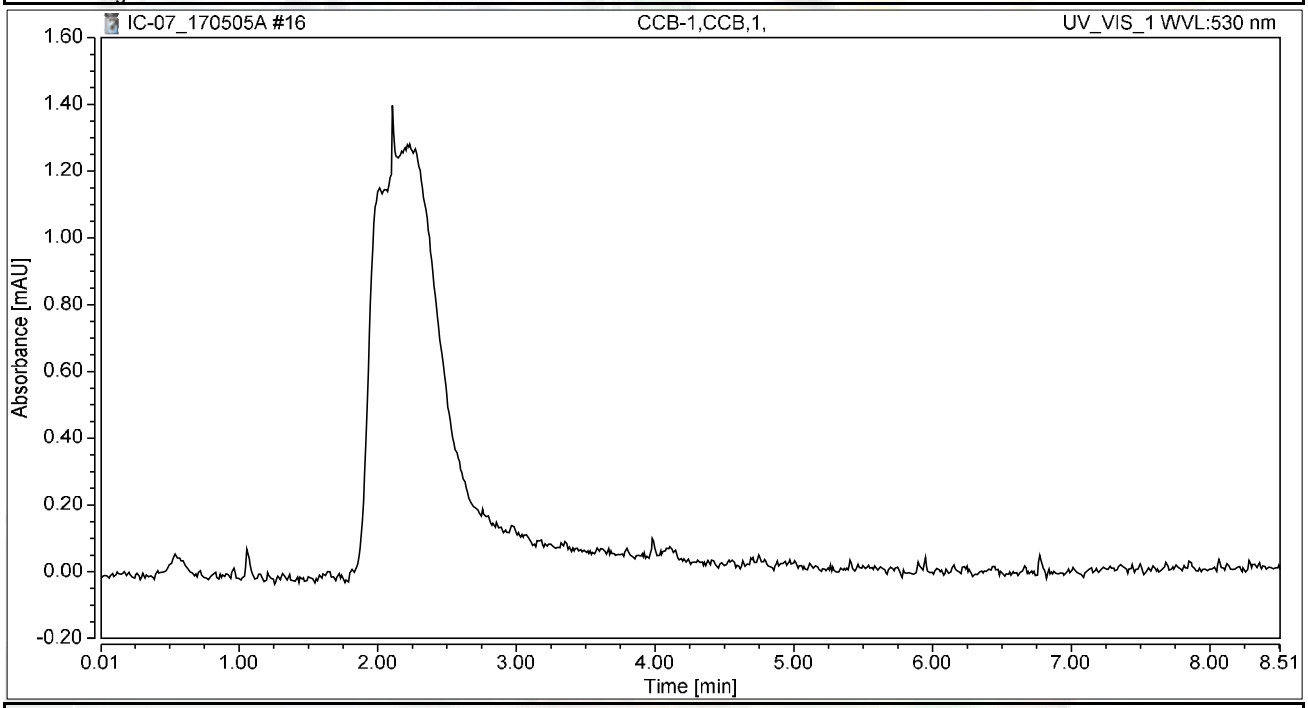
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 08:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

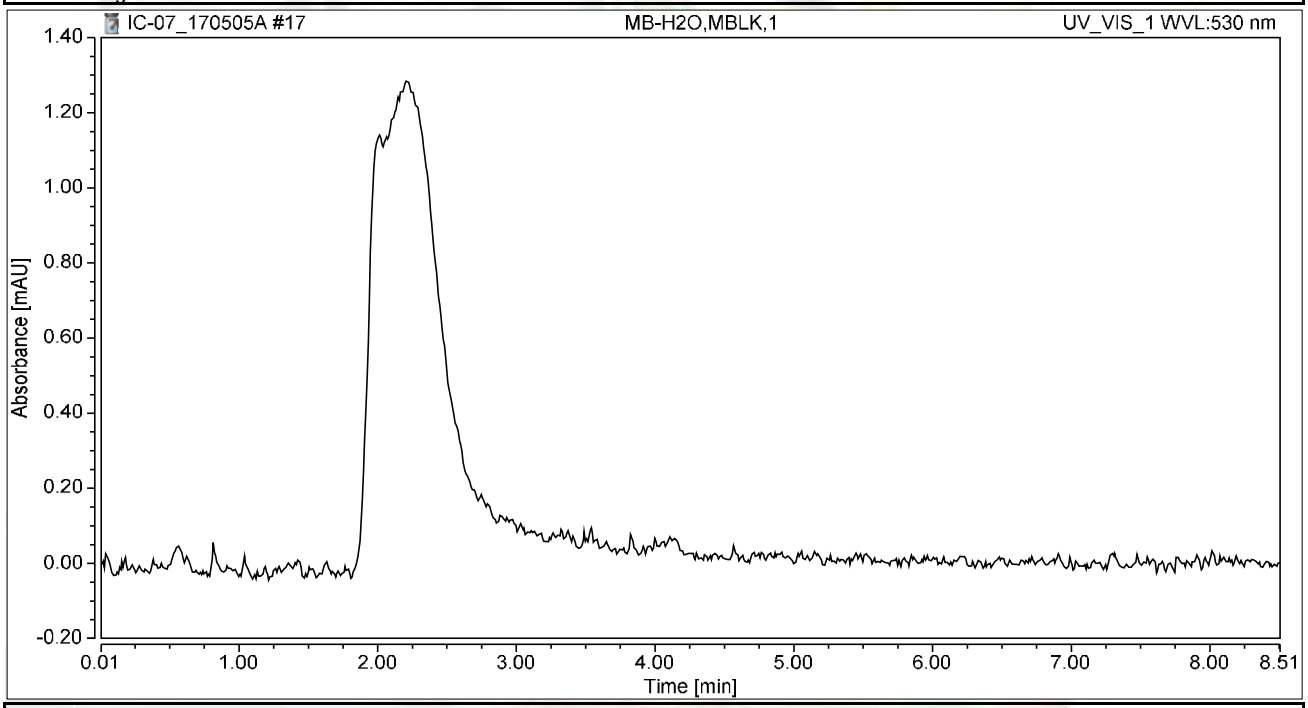
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

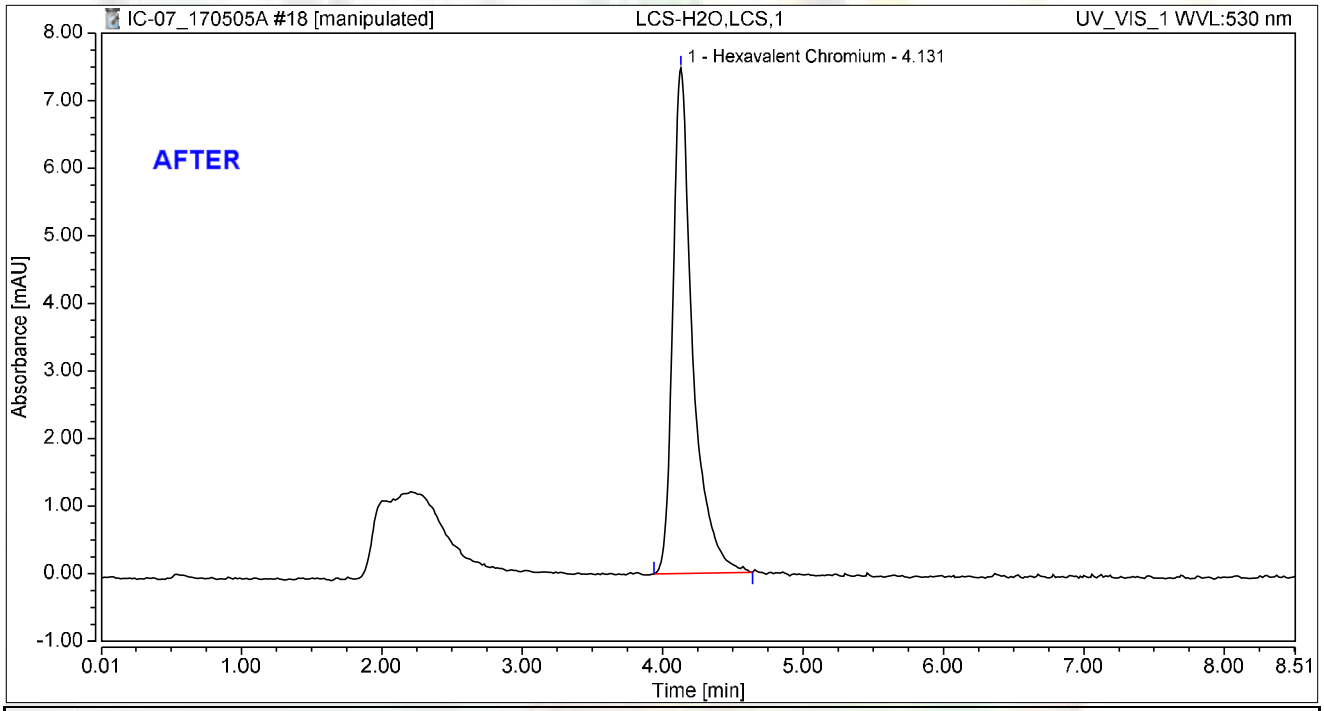
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.222	7.479	100.00	100.00	5.0110
Total:			**1.222**	**7.479**	**100.00**	**100.00**	

rba 5/9/2017

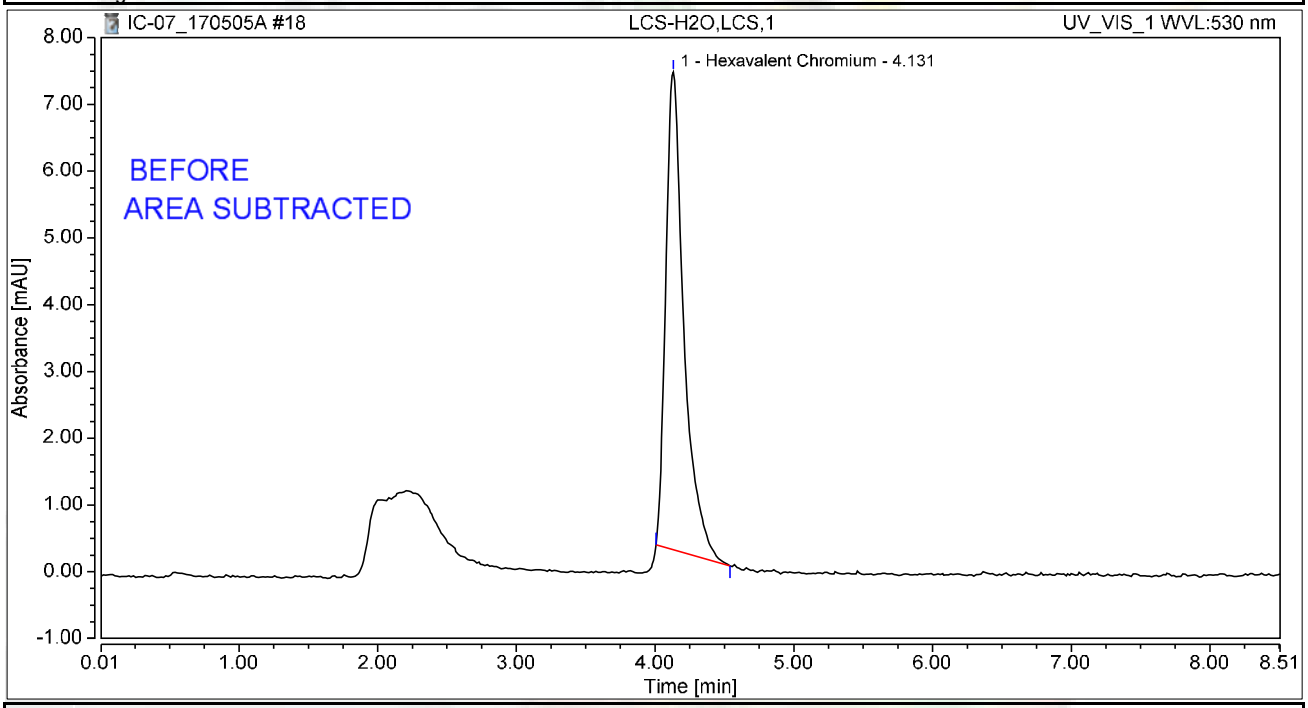
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.085	7.156	100.00	100.00	4.4506
Total:			**1.085**	**7.156**	**100.00**	**100.00**	

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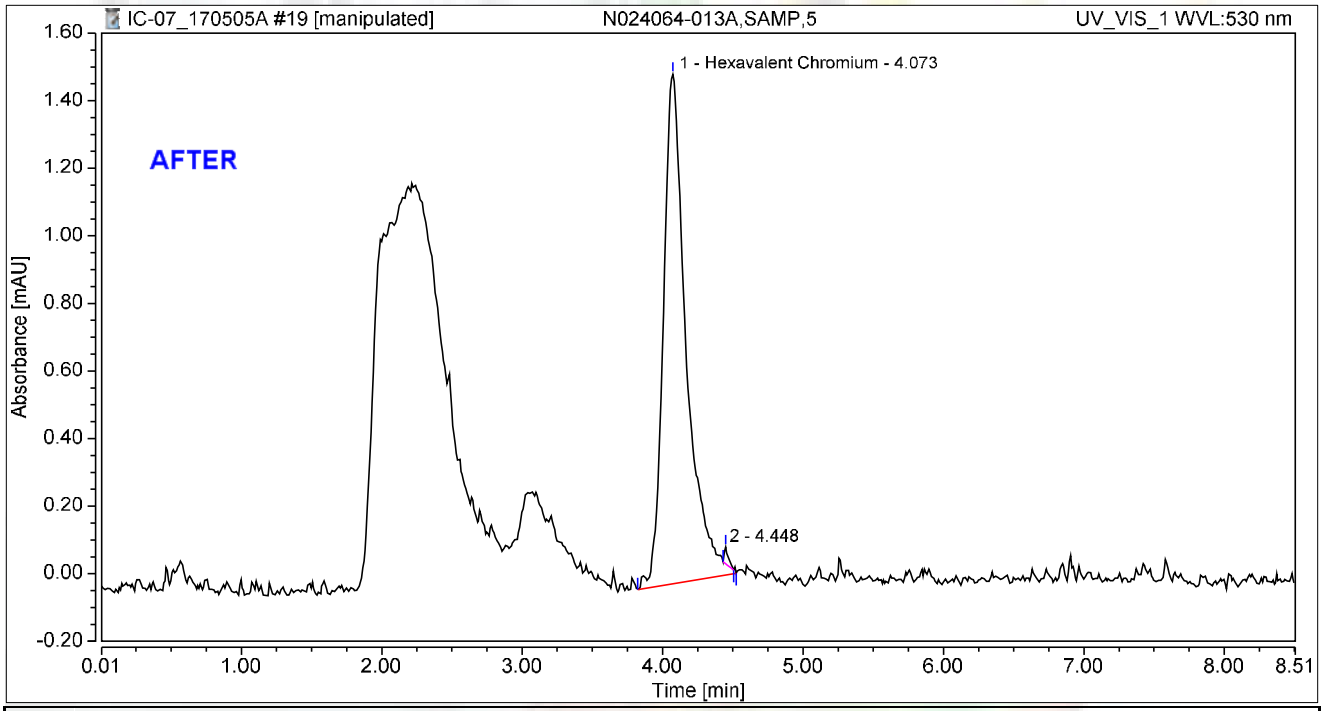
Chromatogram and Results

Injection Details

Injection Name:	**N024064-013A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.286	1.508	99.43	96.86	1.1722
2		4.448	0.002	0.049	0.57	3.14	n.a.
Total:			**0.288**	**1.557**	**100.00**	**100.00**	

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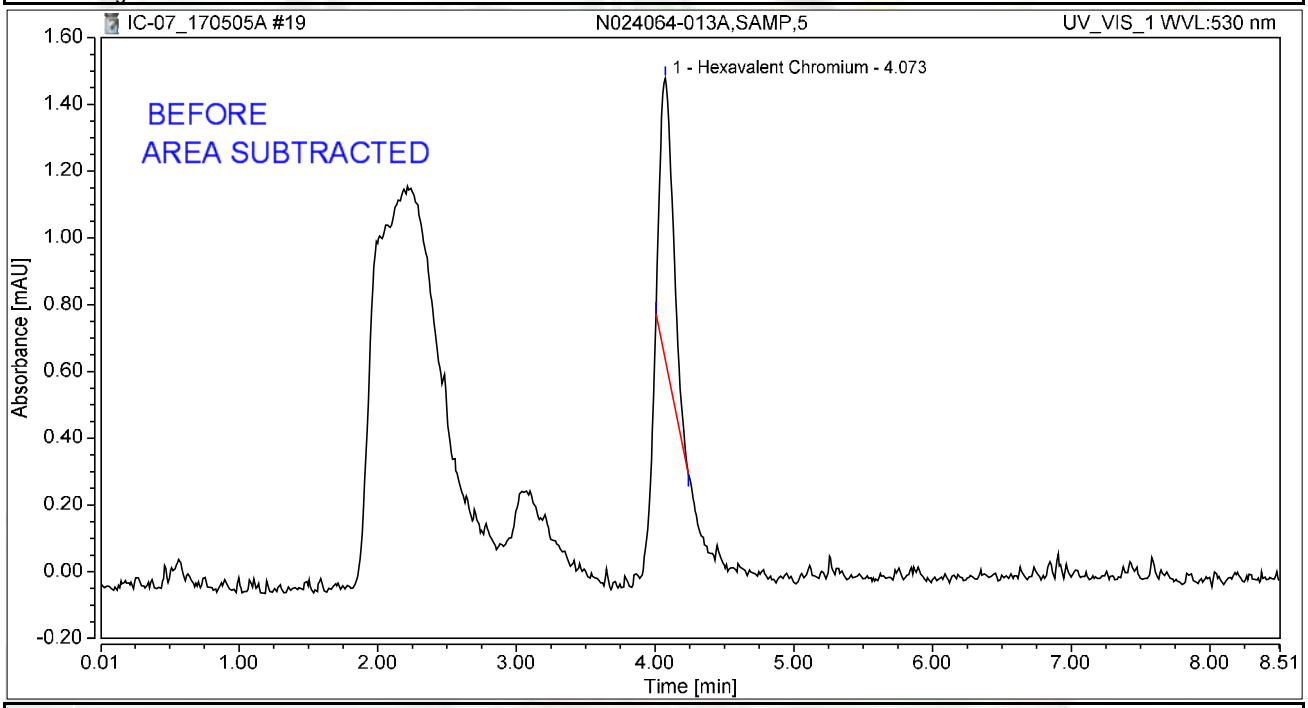
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024064-013A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.094	0.842	100.00	100.00	0.3872
Total:			**0.094**	**0.842**	**100.00**	**100.00**	

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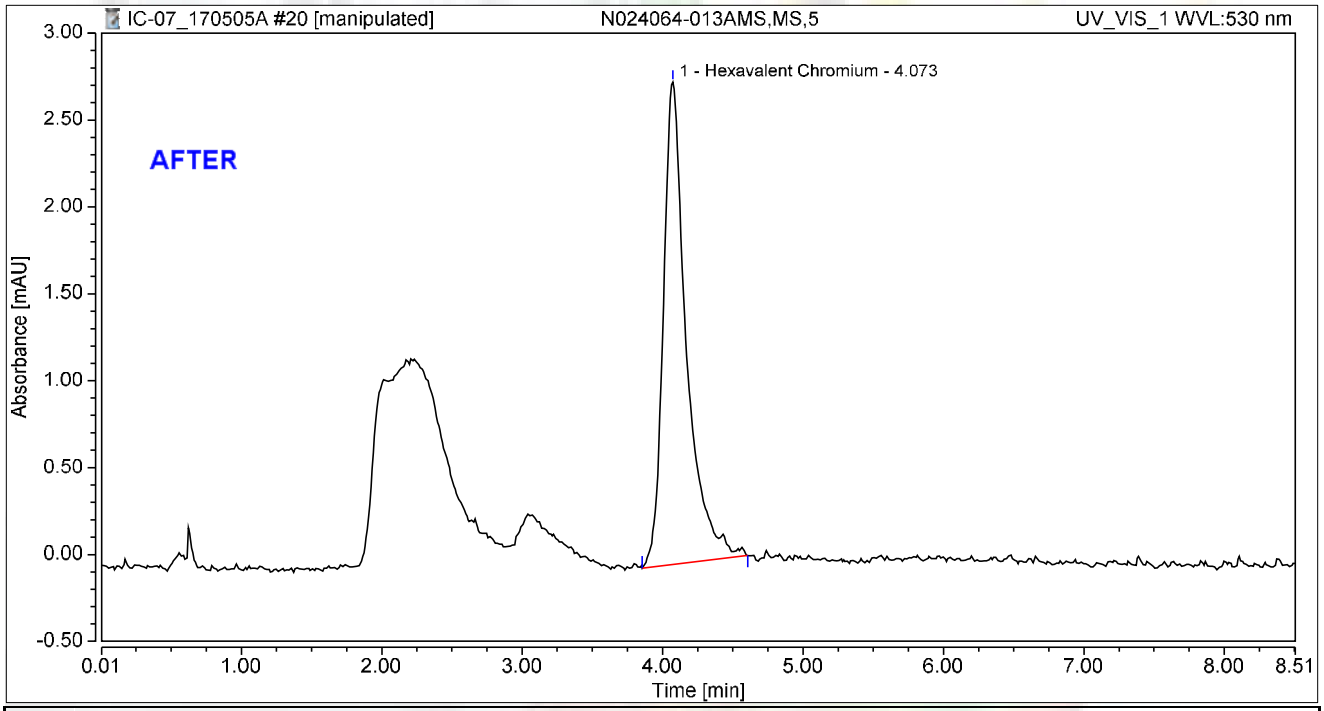
Chromatogram and Results

Injection Details

Injection Name:	**N024064-013AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.530	2.776	100.00	100.00	2.1727
Total:			**0.530**	**2.776**	**100.00**	**100.00**	

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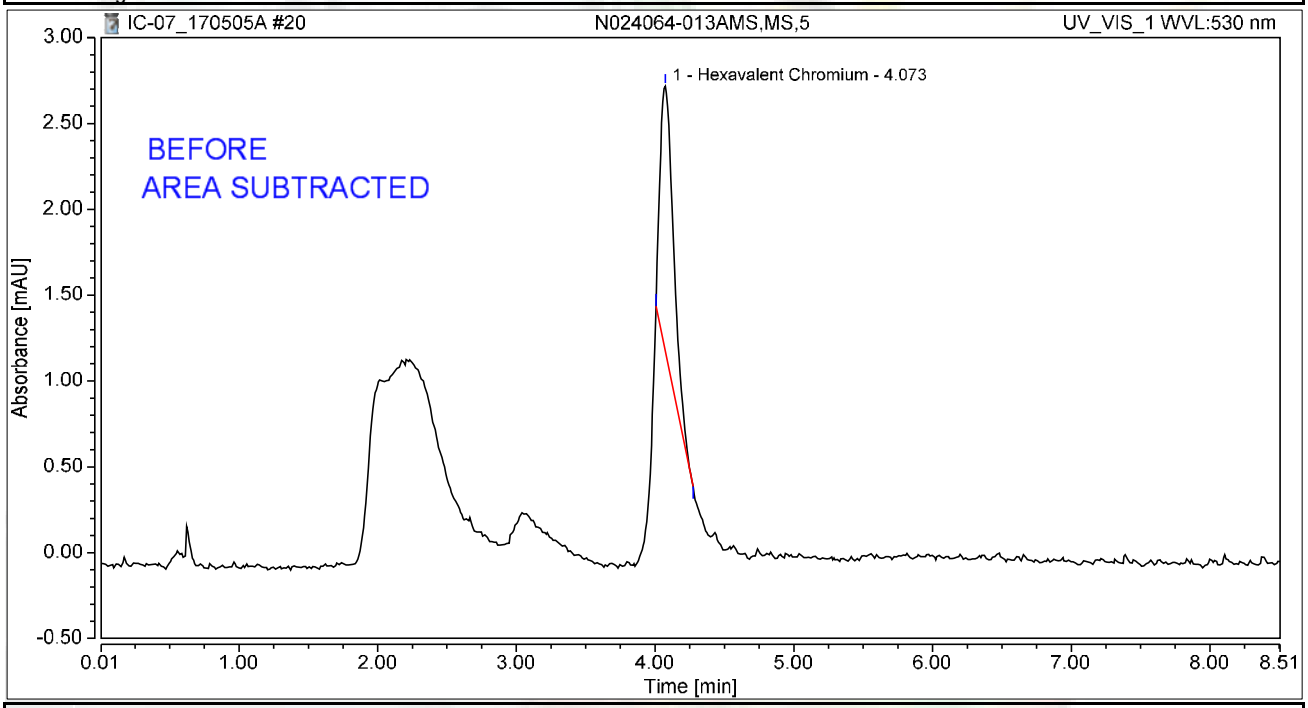
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024064-013AMS,MS,5**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.175	1.545	100.00	100.00	0.7163
Total:			**0.175**	**1.545**	**100.00**	**100.00**	

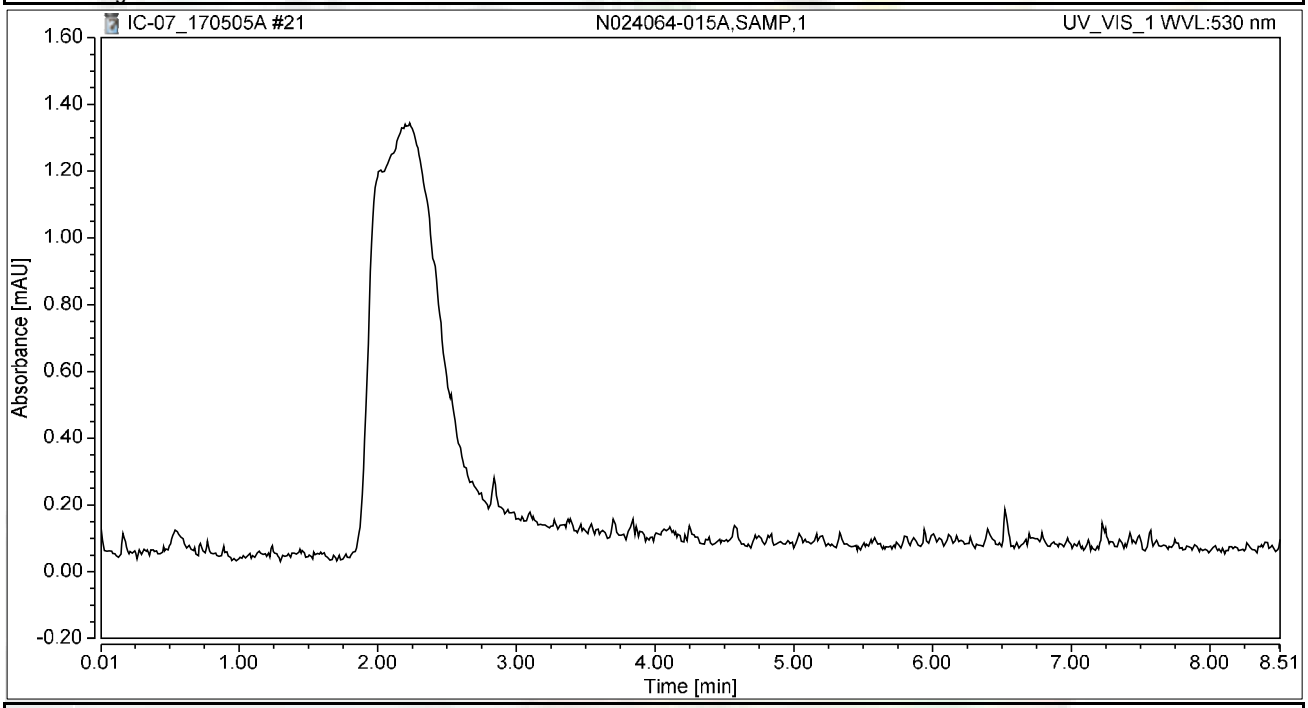
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024064-015A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

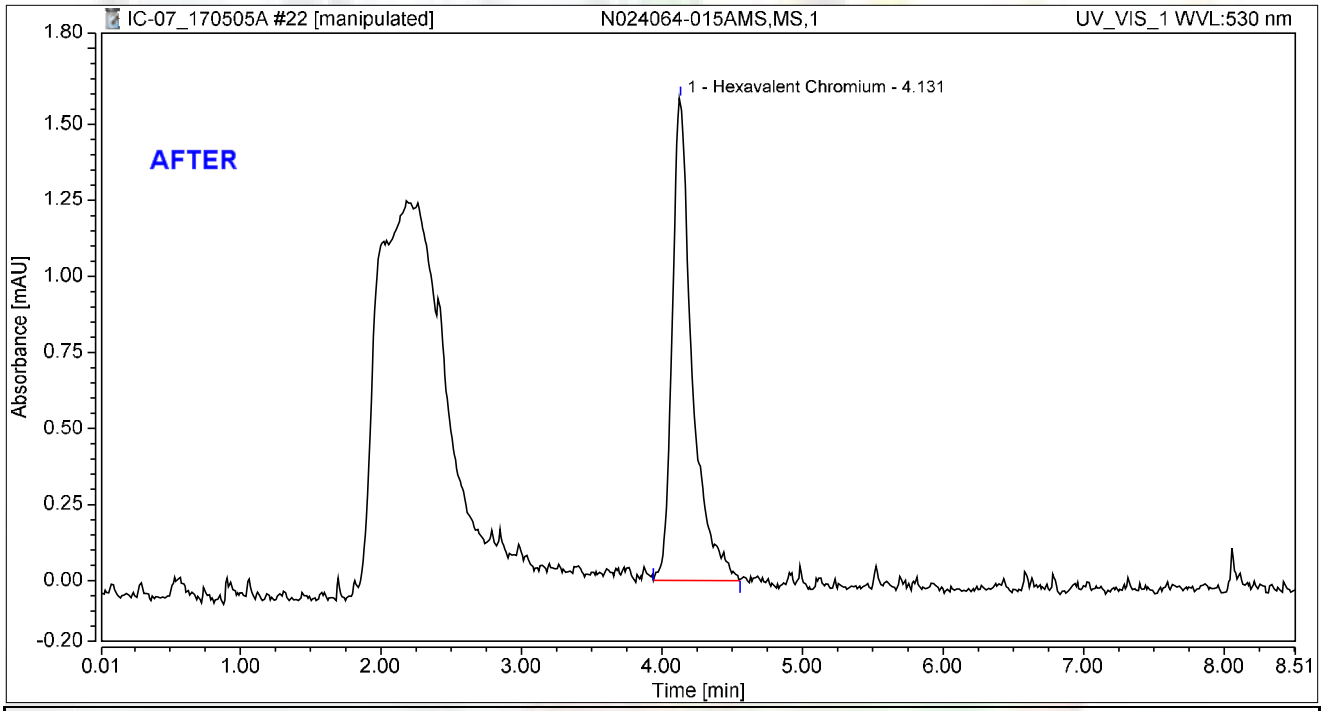
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024064-015AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.261	1.585	100.00	100.00	1.0701
Total:			**0.261**	**1.585**	**100.00**	**100.00**	

rba 5/9/2017

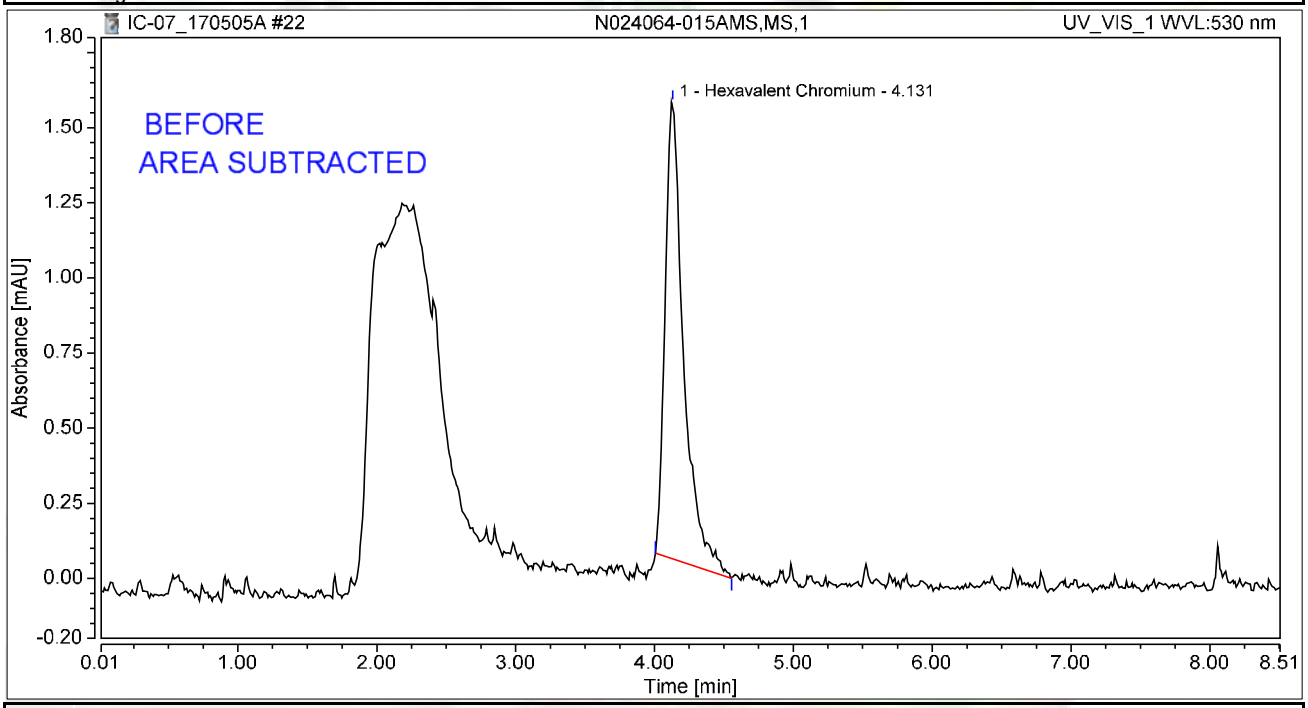
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024064-015AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 09:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.236	1.520	100.00	100.00	0.9660
Total:			**0.236**	**1.520**	**100.00**	**100.00**	

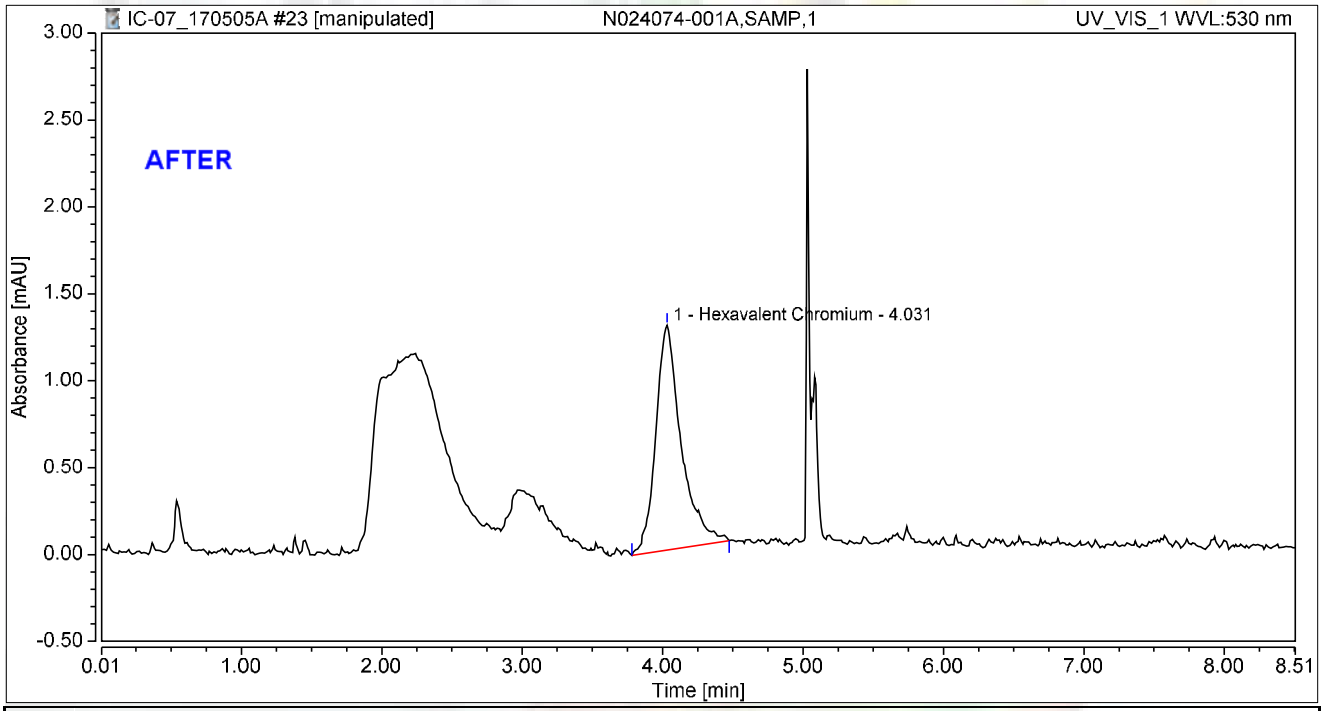
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.270	1.291	100.00	100.00	1.1087
Total:			**0.270**	**1.291**	**100.00**	**100.00**	

rba 5/9/2017

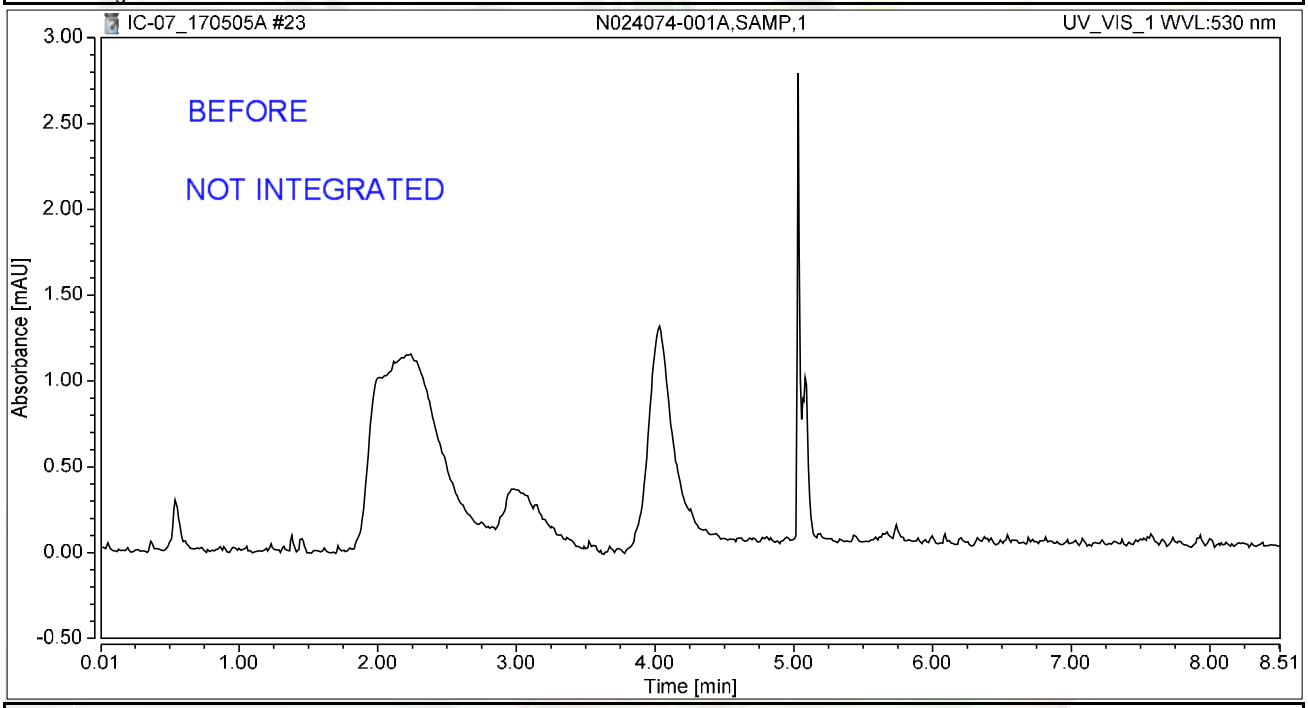
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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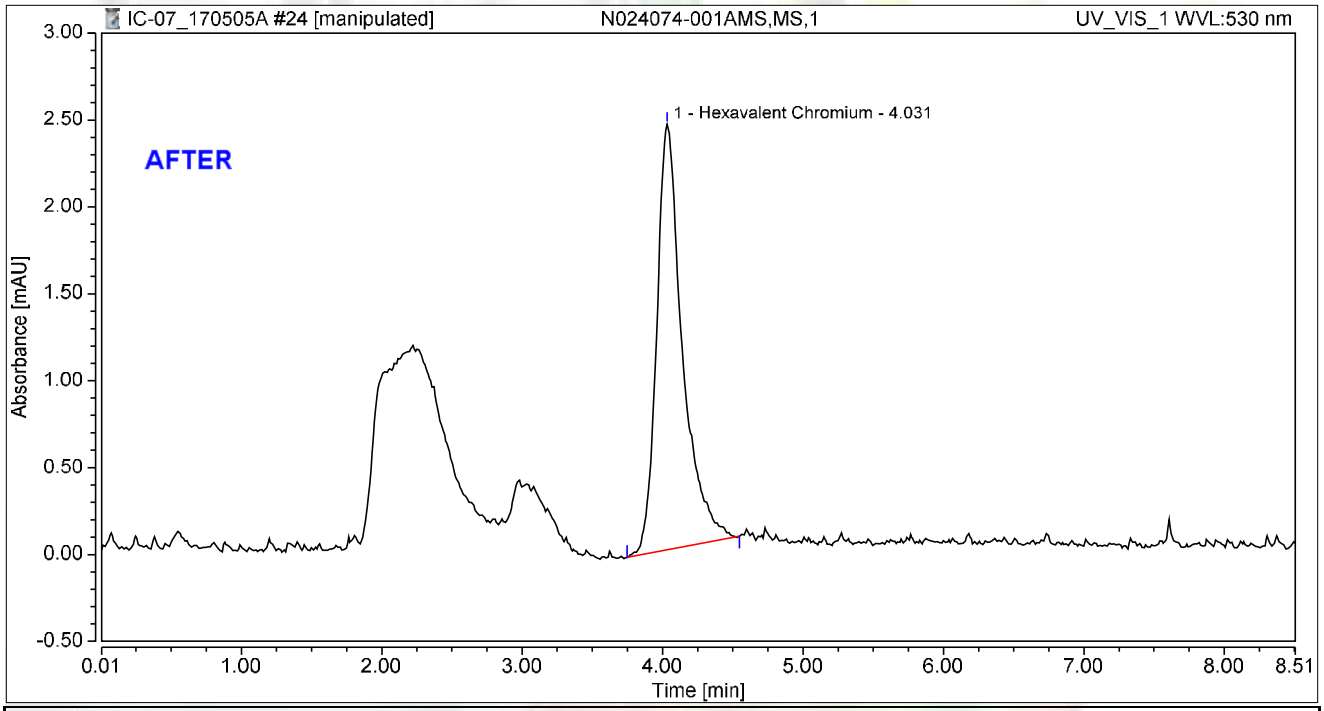
Chromatogram and Results

Injection Details

Injection Name:	**N024074-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.031	0.519	2.449	100.00	100.00	2.1296
Total:			**0.519**	**2.449**	**100.00**	**100.00**	

rba 5/9/2017

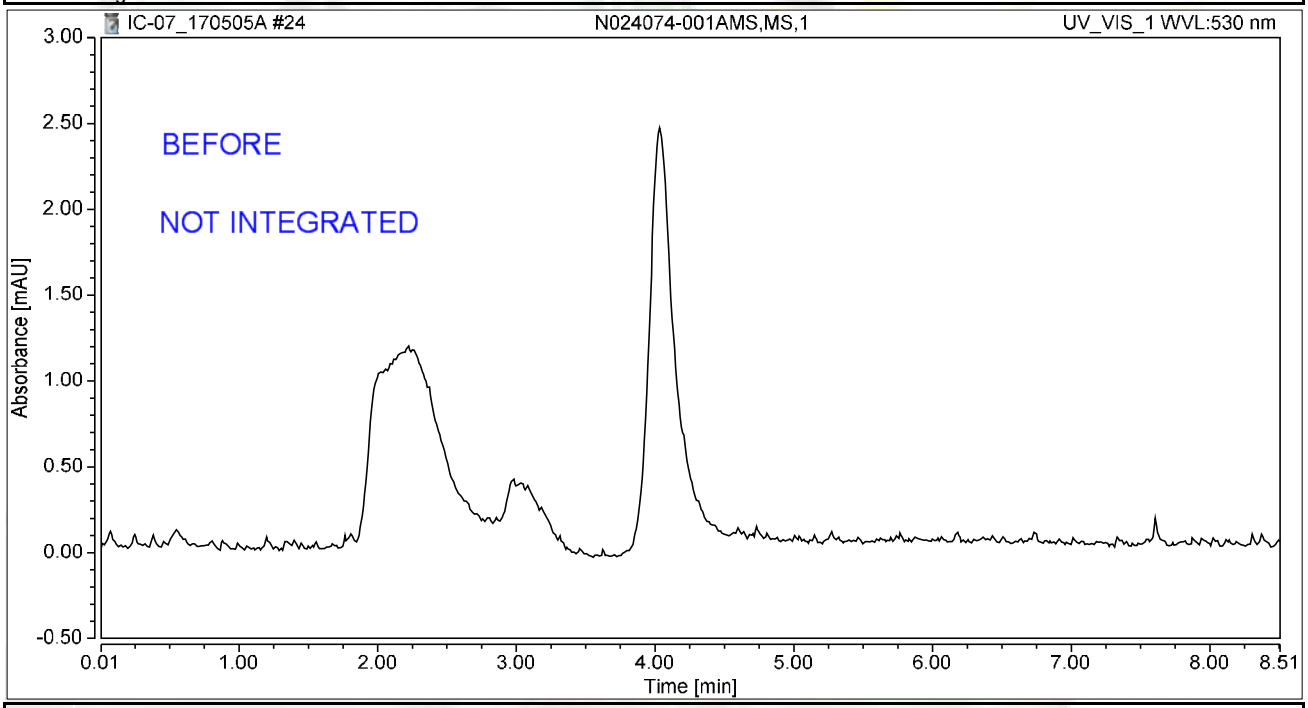
Reviewed
by: My first report/Integration
Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

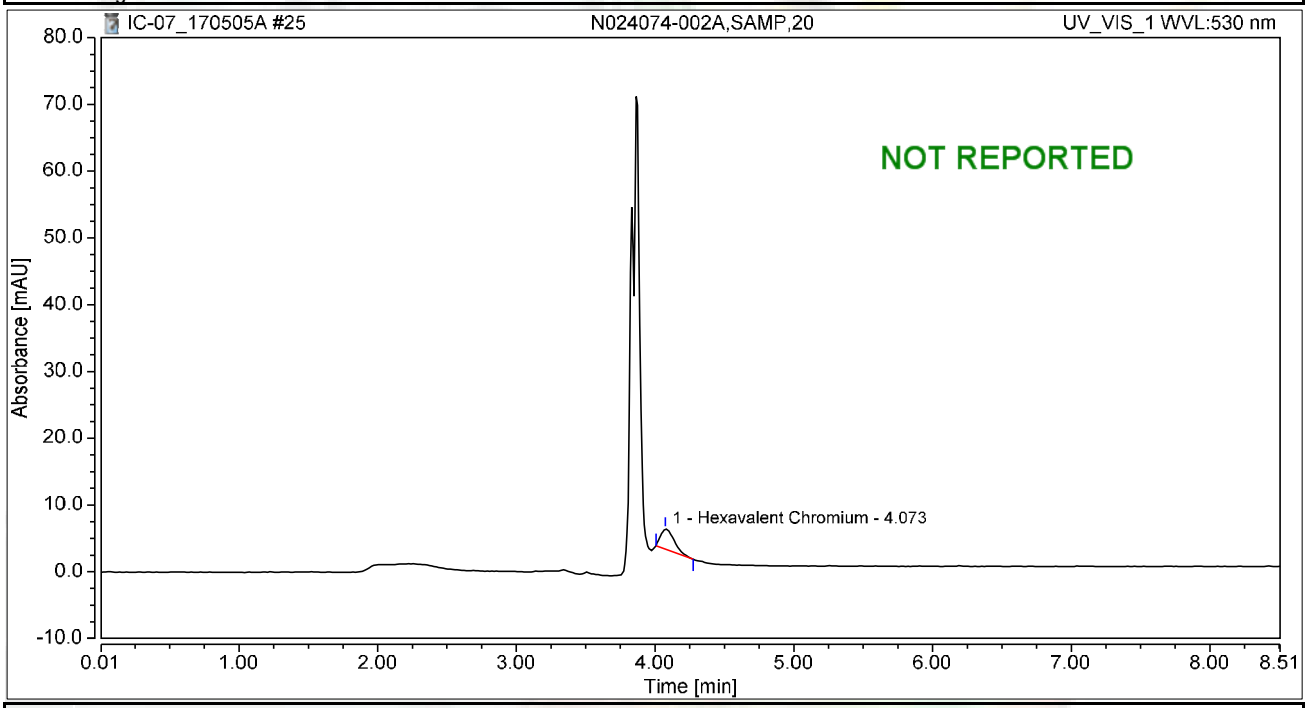
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-002A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

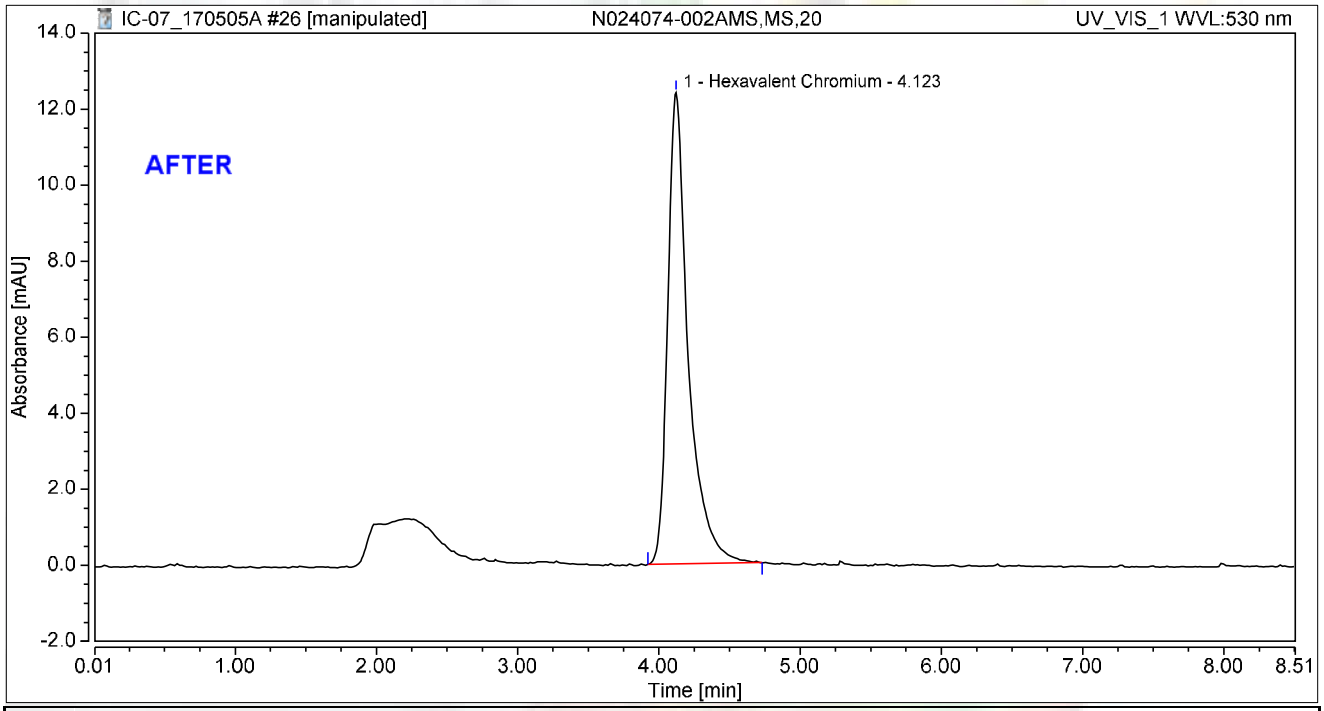
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.073	0.344	2.963	100.00	100.00	1.4094
Total:			**0.344**	**2.963**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-002AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	2.091	12.402	100.00	100.00	8.5740
Total:			**2.091**	**12.402**	**100.00**	**100.00**	

rba 5/9/2017

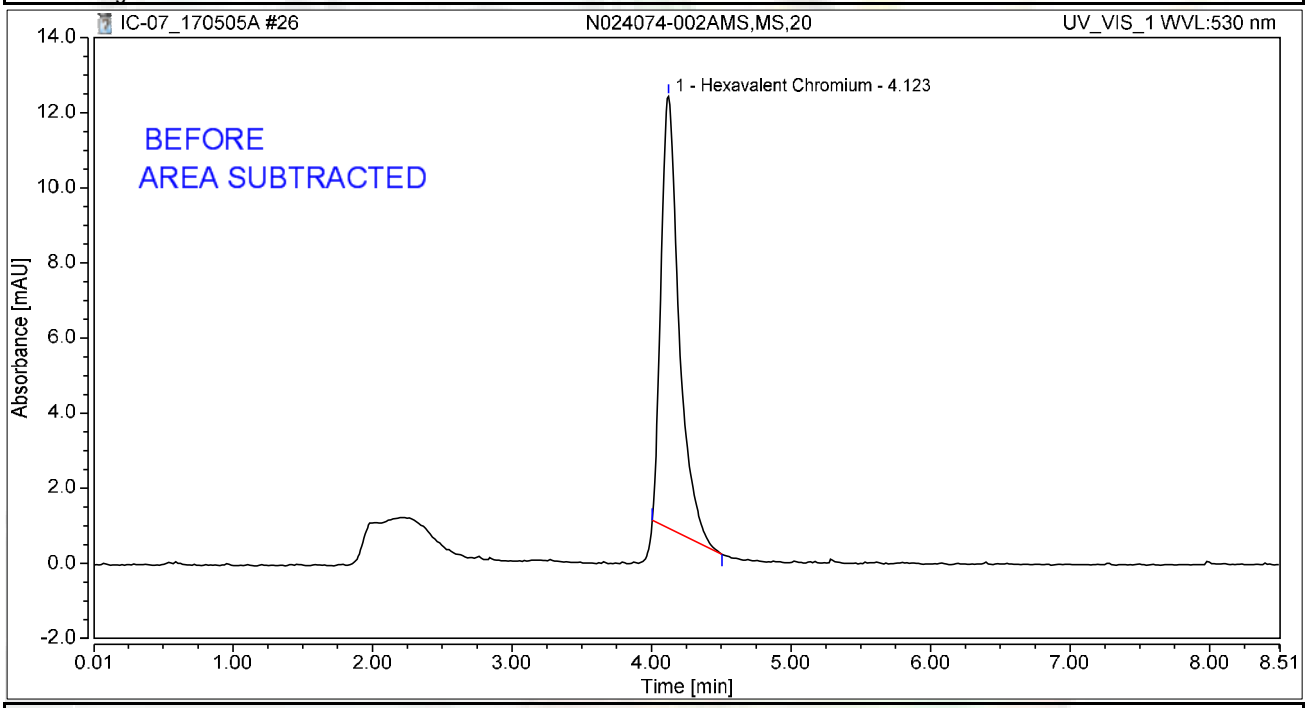
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-002AMS,MS,20**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.728	11.502	100.00	100.00	7.0849
Total:			**1.728**	**11.502**	**100.00**	**100.00**	

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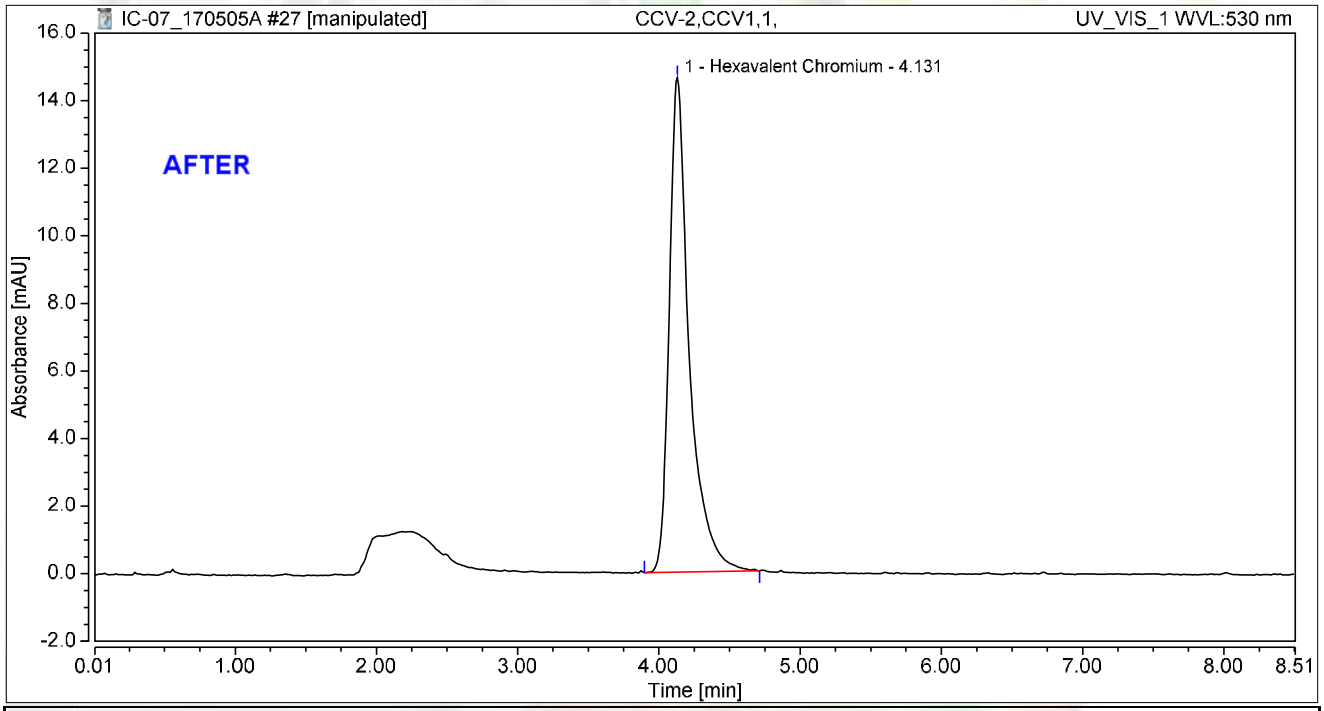
Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.410	14.636	100.00	100.00	9.8804
Total:			**2.410**	**14.636**	**100.00**	**100.00**	

rba 5/9/2017

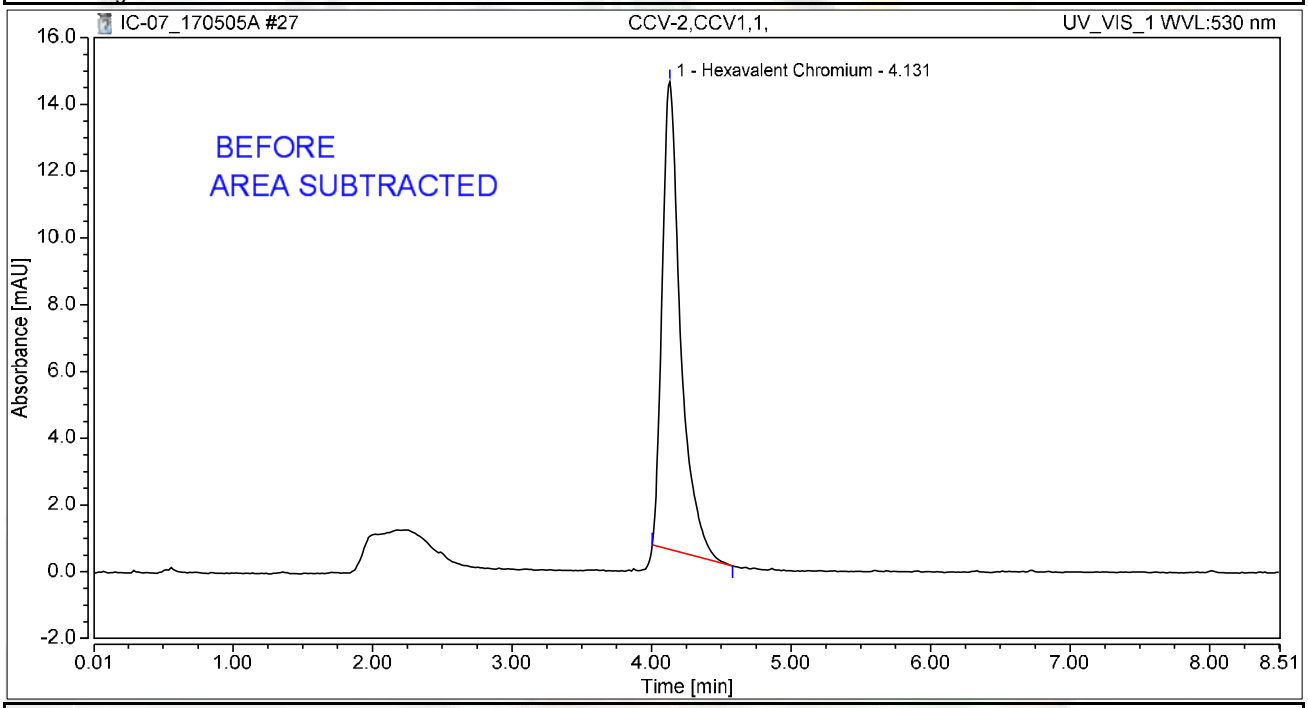
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.140	14.009	100.00	100.00	8.7751
Total:			**2.140**	**14.009**	**100.00**	**100.00**	

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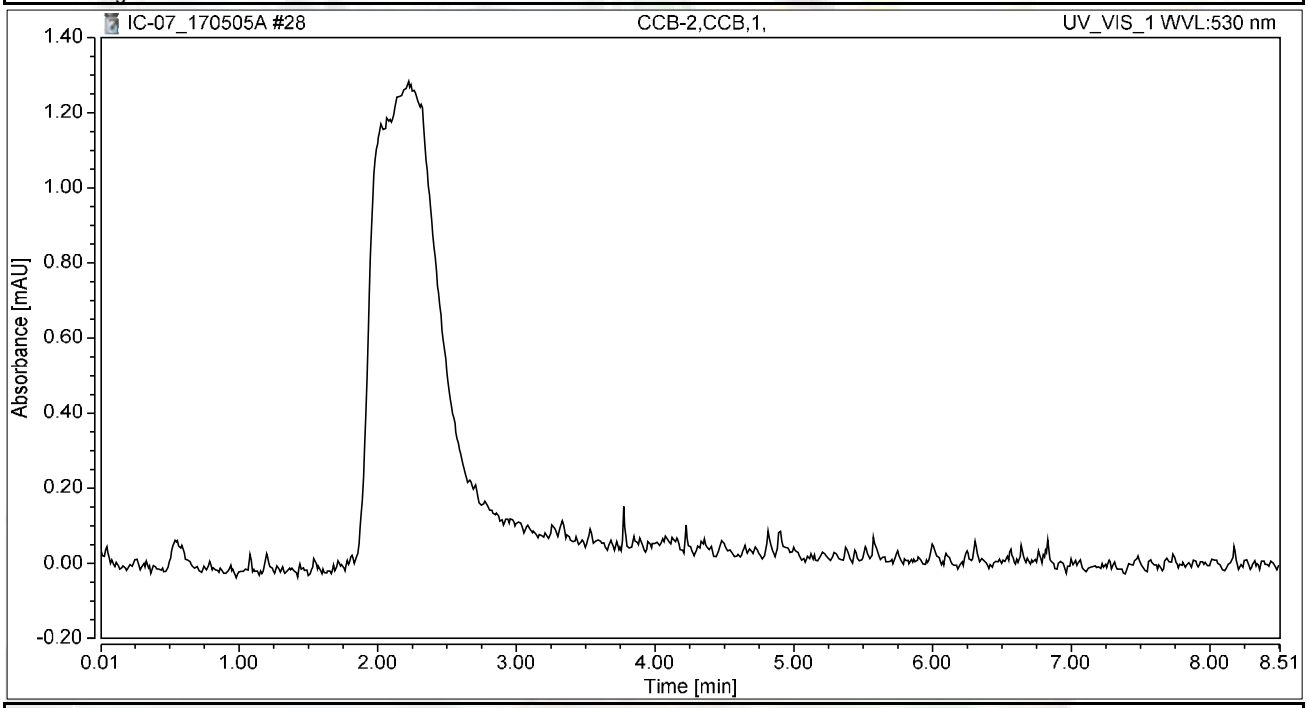
Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 10:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

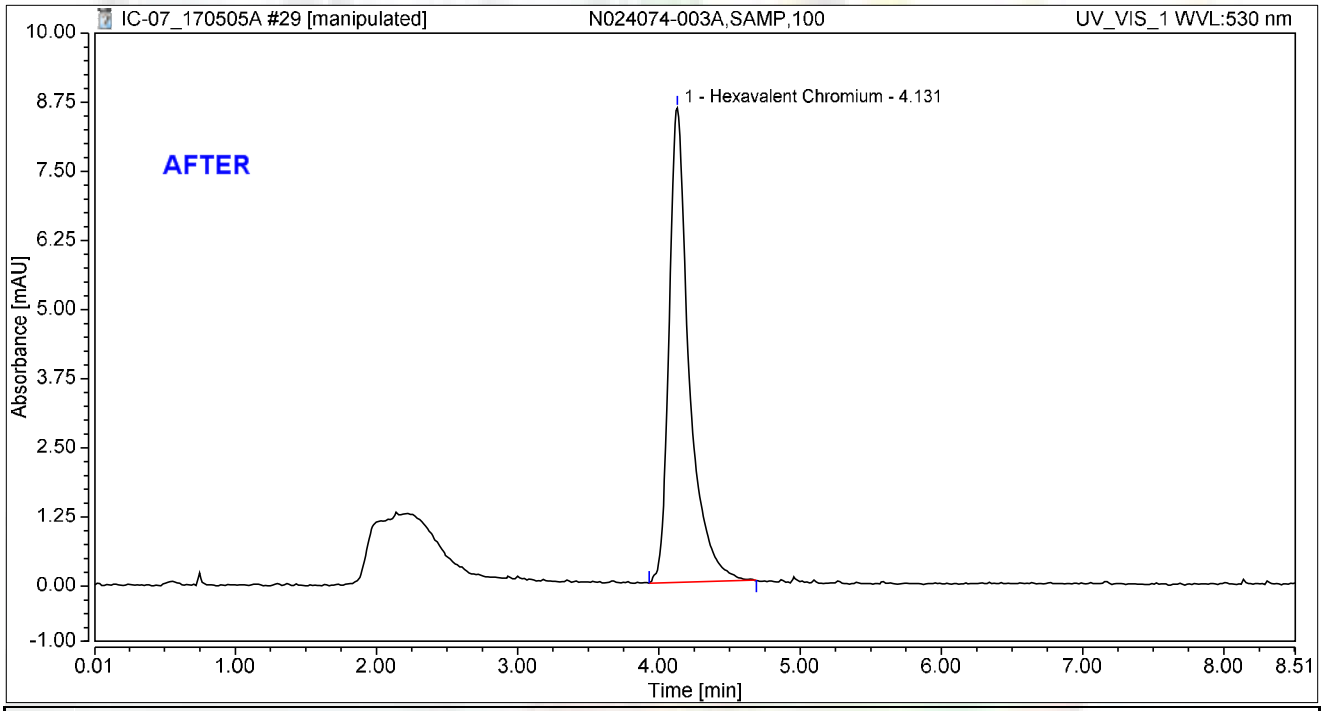
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-003A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.418	8.580	100.00	100.00	5.8159
Total:			**1.418**	**8.580**	**100.00**	**100.00**	

rba 5/9/2017

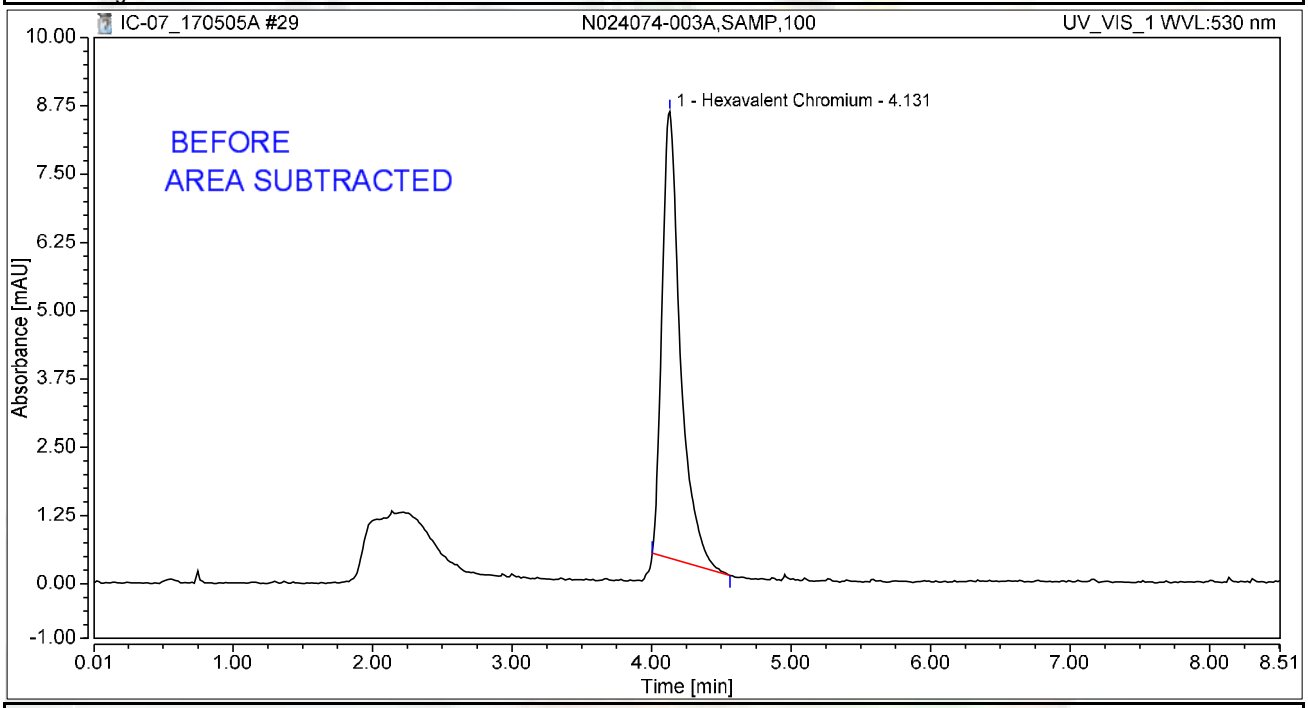
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-003A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.248	8.176	100.00	100.00	5.1155
Total:			**1.248**	**8.176**	**100.00**	**100.00**	

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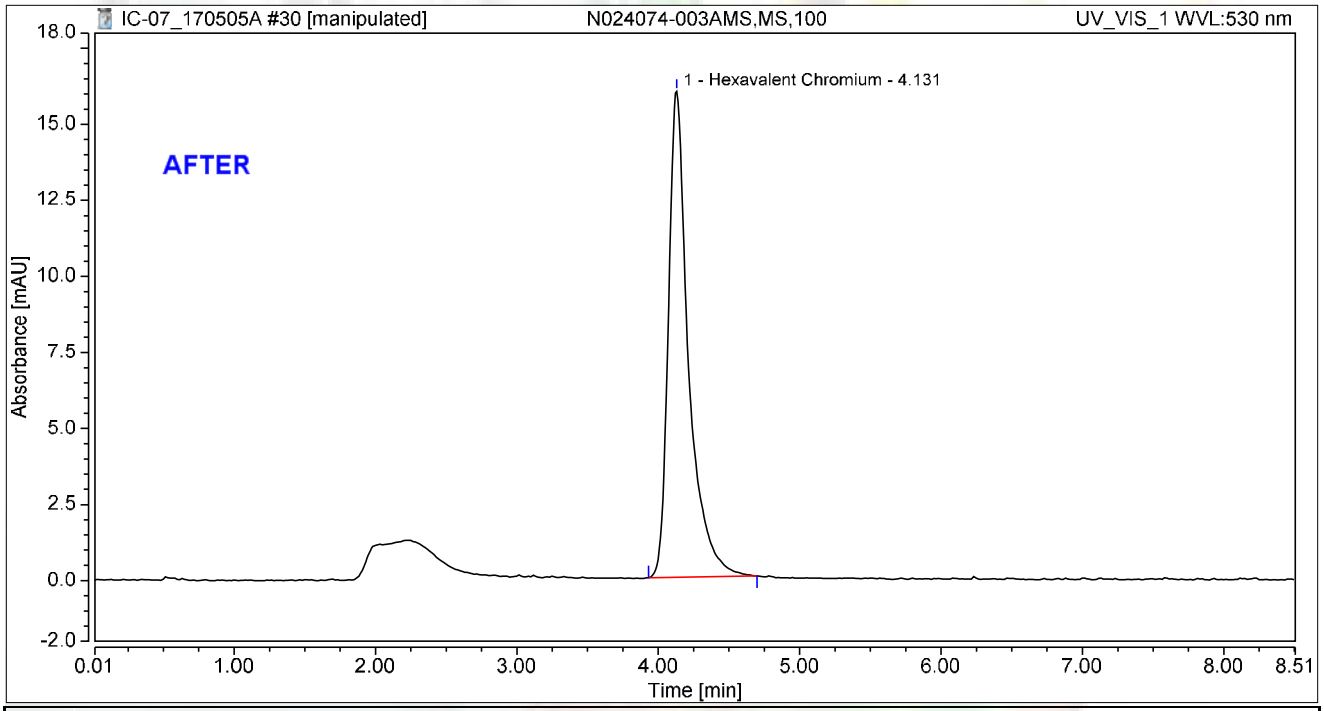
Chromatogram and Results

Injection Details

Injection Name:	**N024074-003AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.630	15.972	100.00	100.00	10.7839
Total:			**2.630**	**15.972**	**100.00**	**100.00**	

rba 5/9/2017

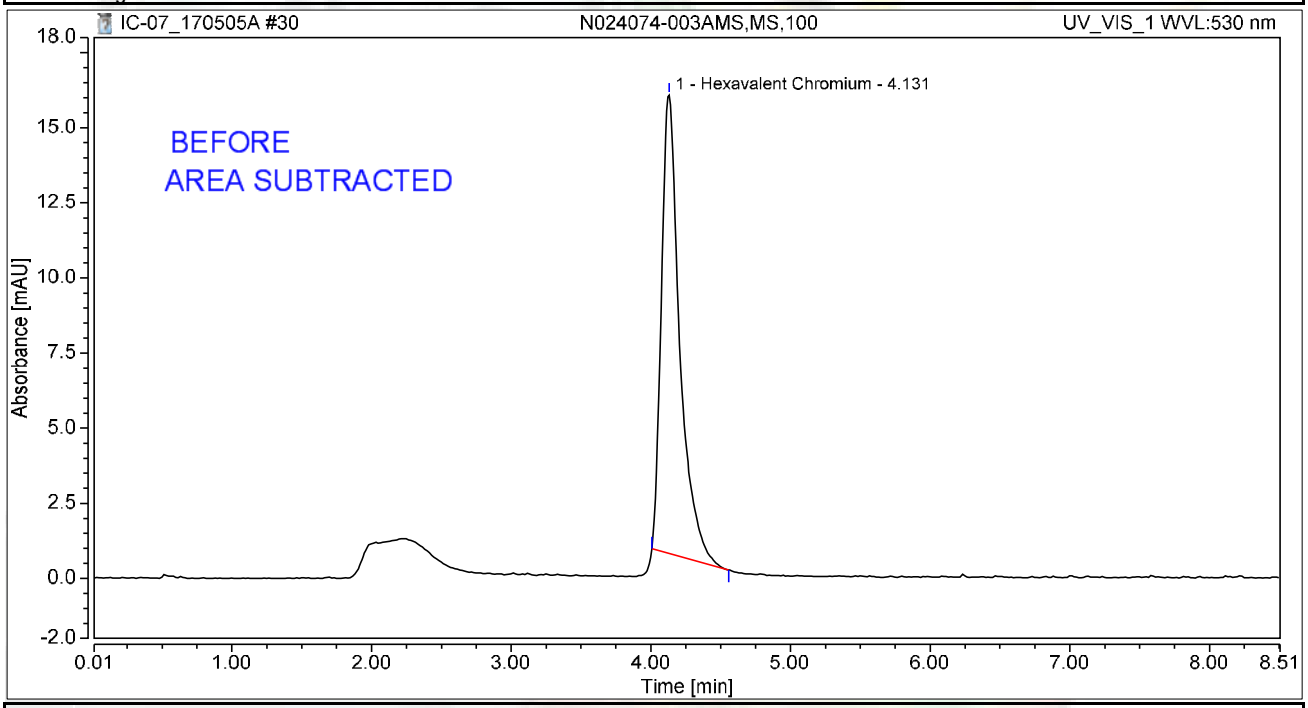
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-003AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.329	15.261	100.00	100.00	9.5488
Total:			**2.329**	**15.261**	**100.00**	**100.00**	

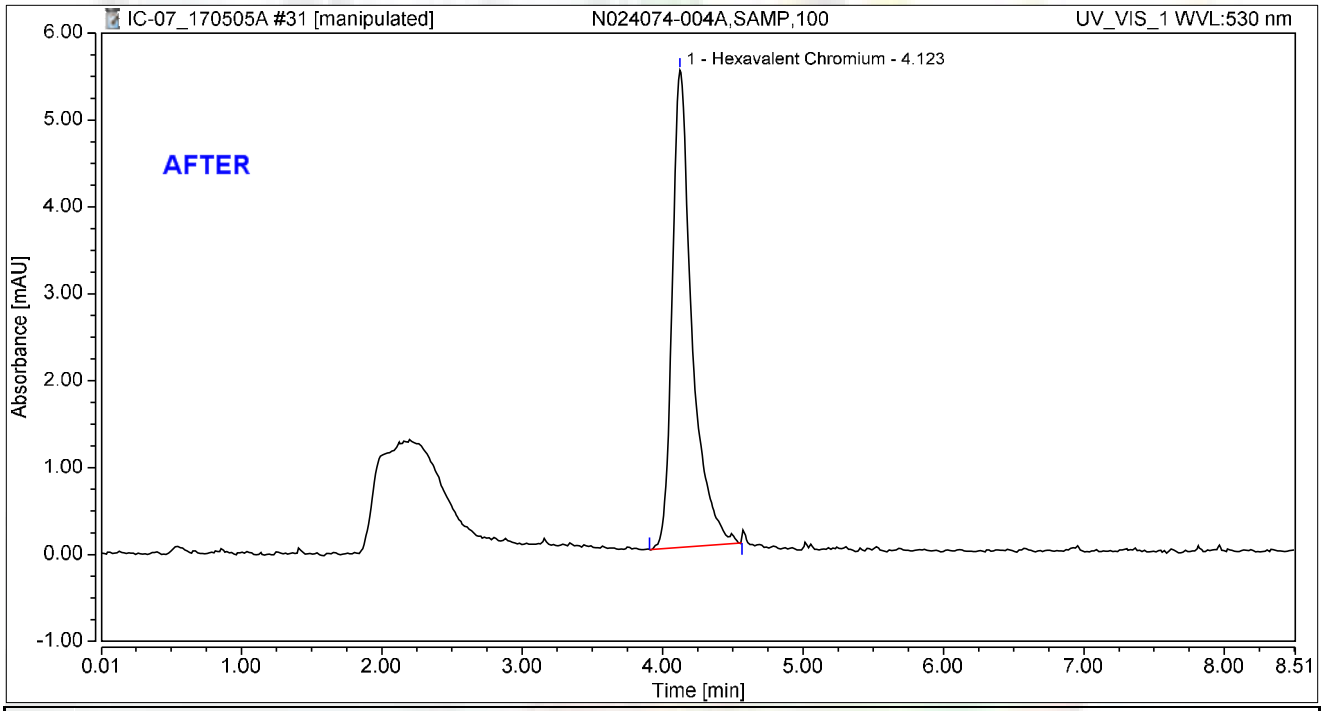
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-004A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.896	5.490	100.00	100.00	3.6757
Total:			**0.896**	**5.490**	**100.00**	**100.00**	

rba 5/9/2017

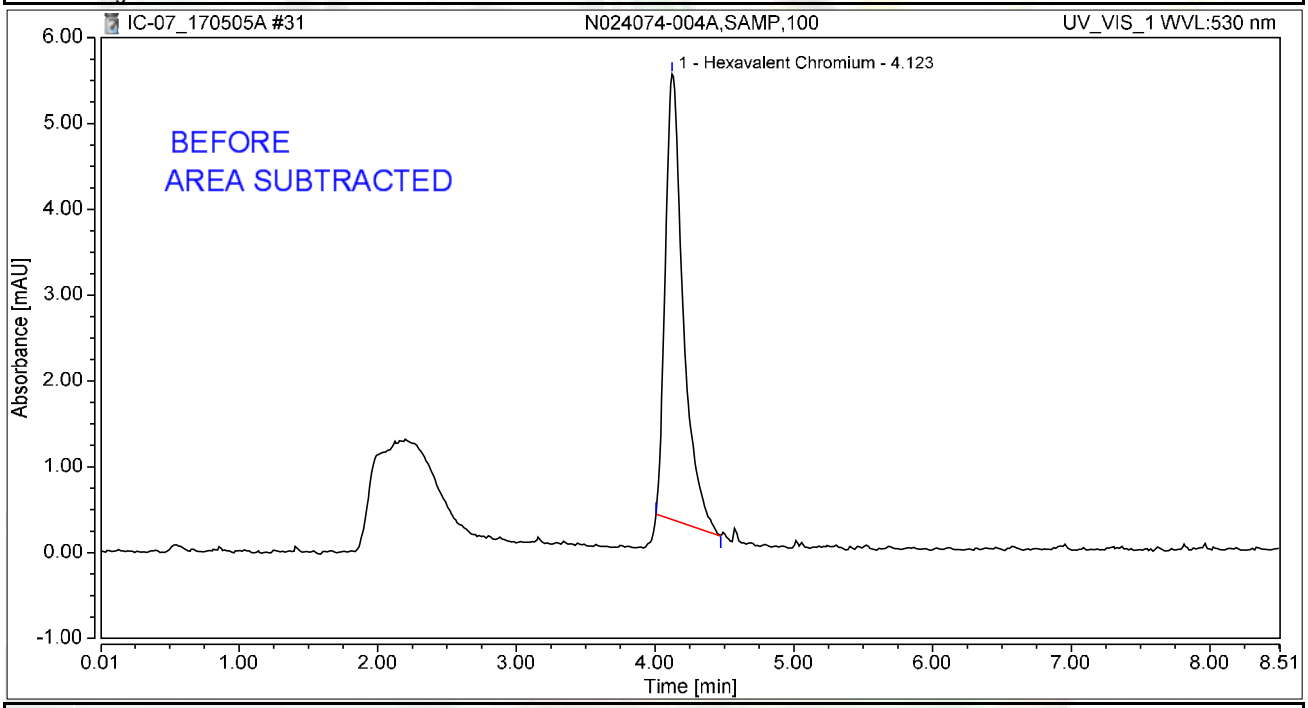
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-004A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.780	5.189	100.00	100.00	3.1967
Total:			**0.780**	**5.189**	**100.00**	**100.00**	

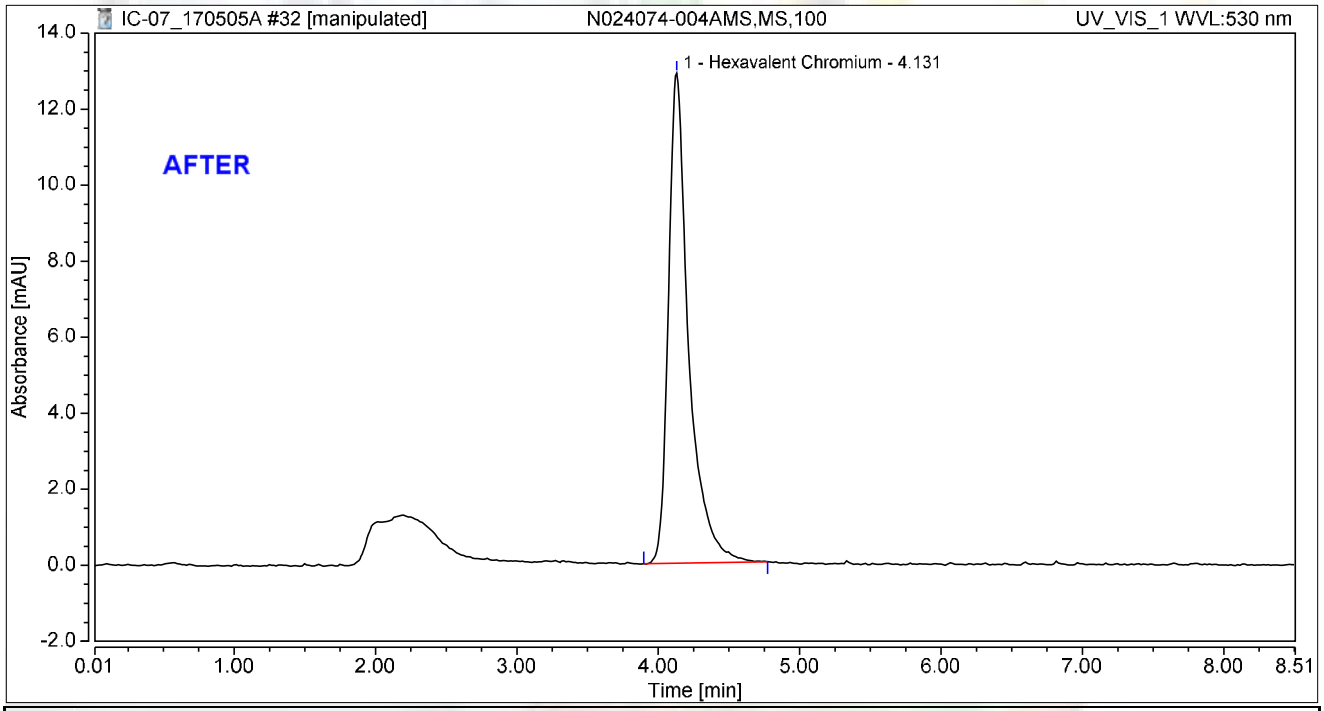
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-004AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.142	12.887	100.00	100.00	8.7815
Total:			**2.142**	**12.887**	**100.00**	**100.00**	

rba 5/9/2017

Reviewed by: Nancy 5/15/2017

My first report/Integration

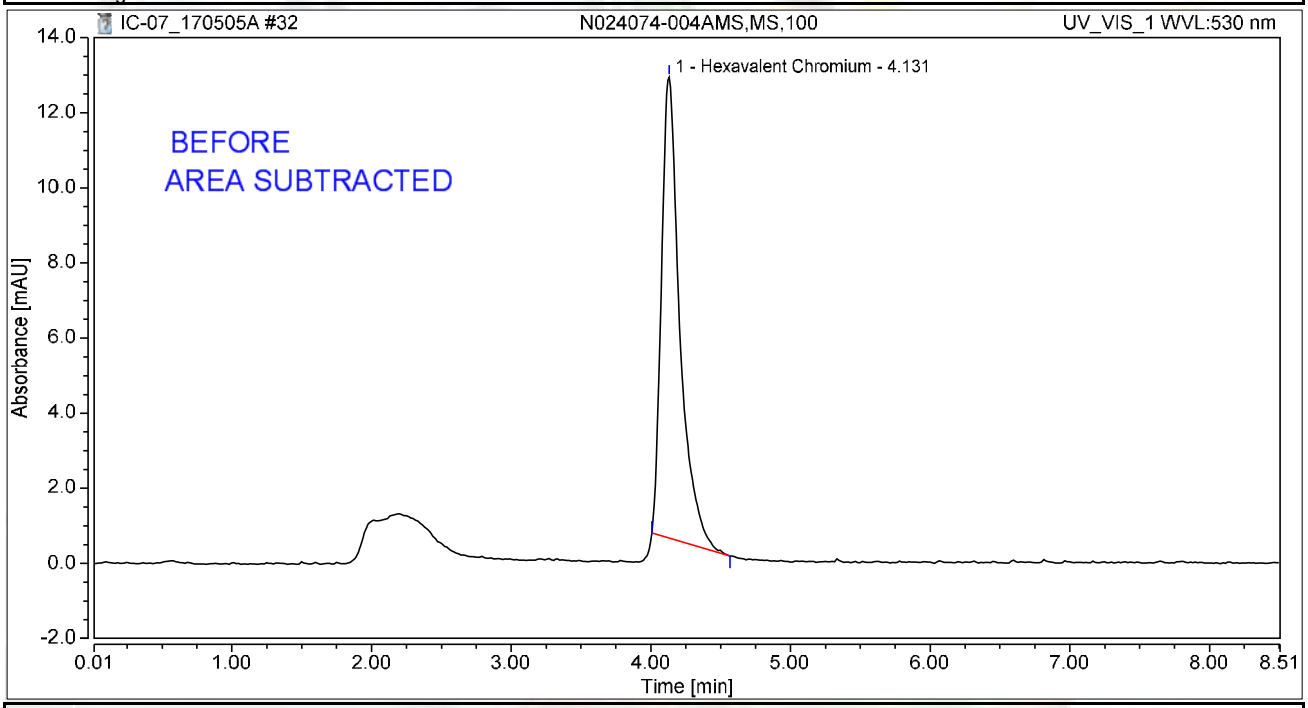
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024074-004AMS,MS,100**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.874	12.273	100.00	100.00	7.6819
Total:			**1.874**	**12.273**	**100.00**	**100.00**	

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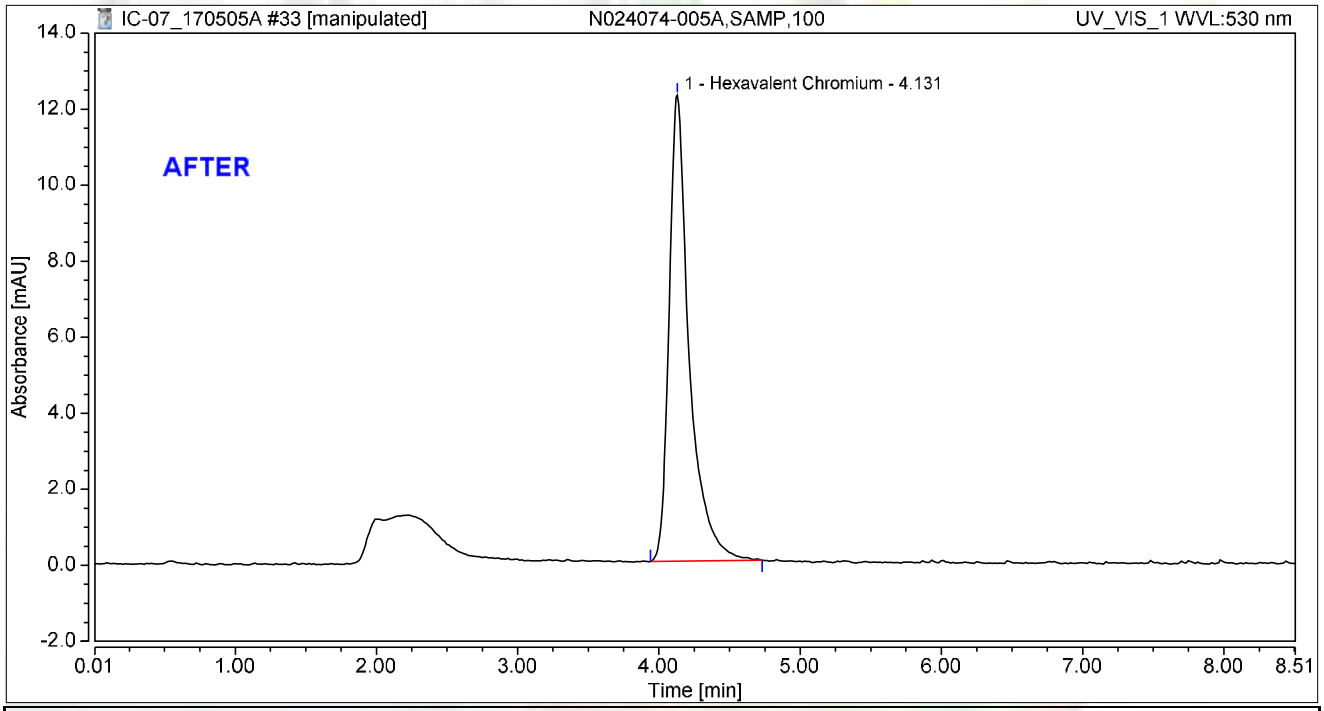
Chromatogram and Results

Injection Details

Injection Name:	**N024074-005A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.023	12.256	100.00	100.00	8.2943
Total:			**2.023**	**12.256**	**100.00**	**100.00**	

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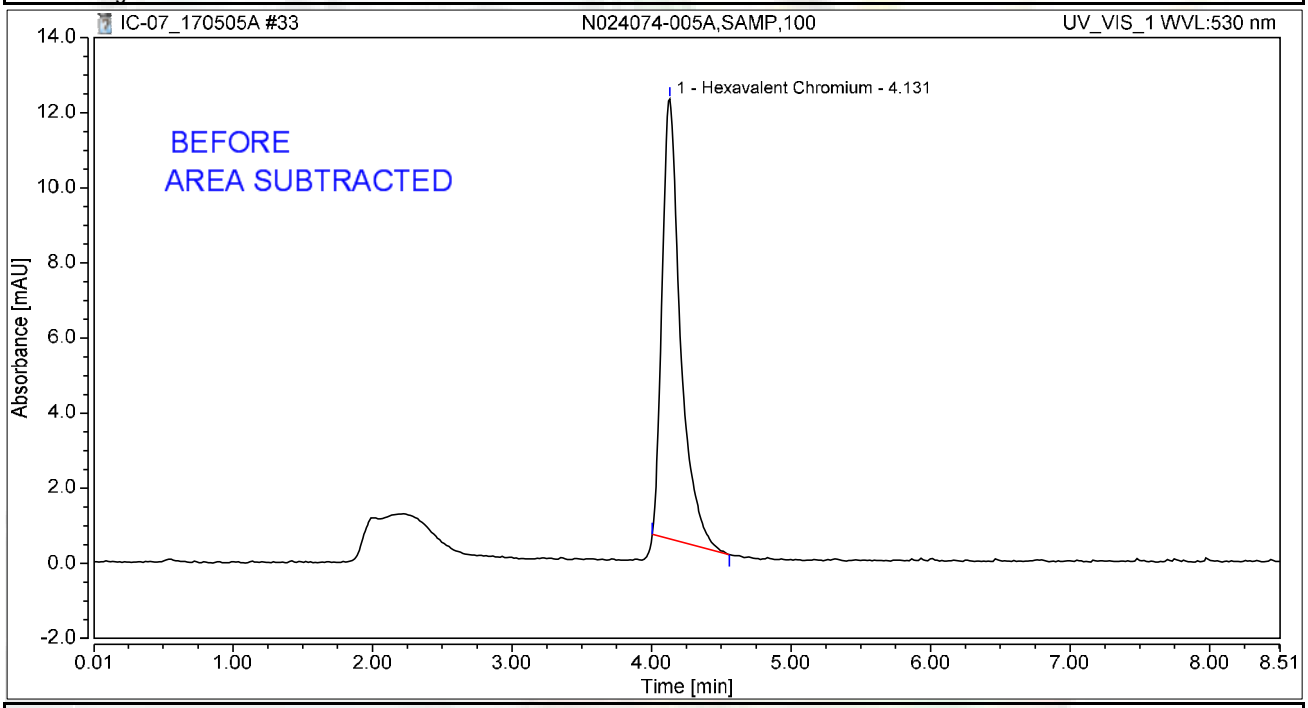
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-005A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.792	11.719	100.00	100.00	7.3480
Total:			**1.792**	**11.719**	**100.00**	**100.00**	

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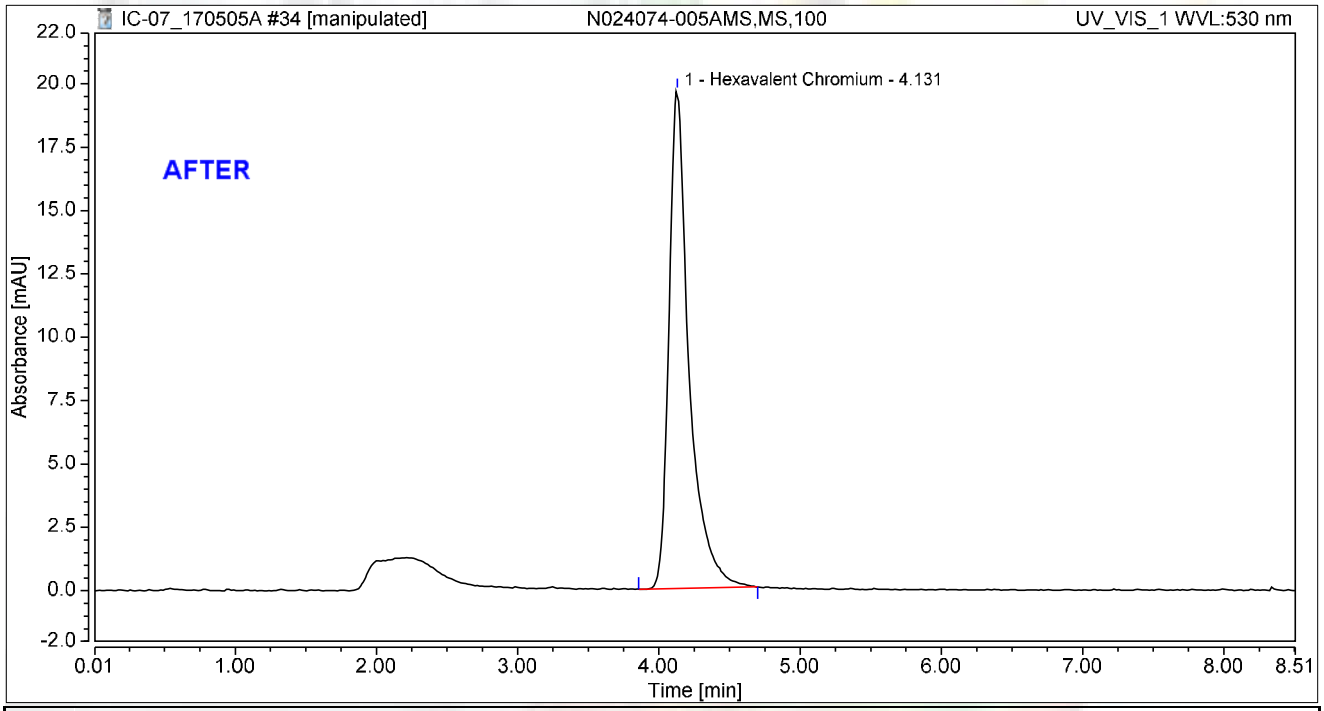
Chromatogram and Results

Injection Details

Injection Name:	**N024074-005AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.251	19.641	100.00	100.00	13.3279
Total:			**3.251**	**19.641**	**100.00**	**100.00**	

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Reviewed by: Nancy 5/15/2017

My first report/Integration

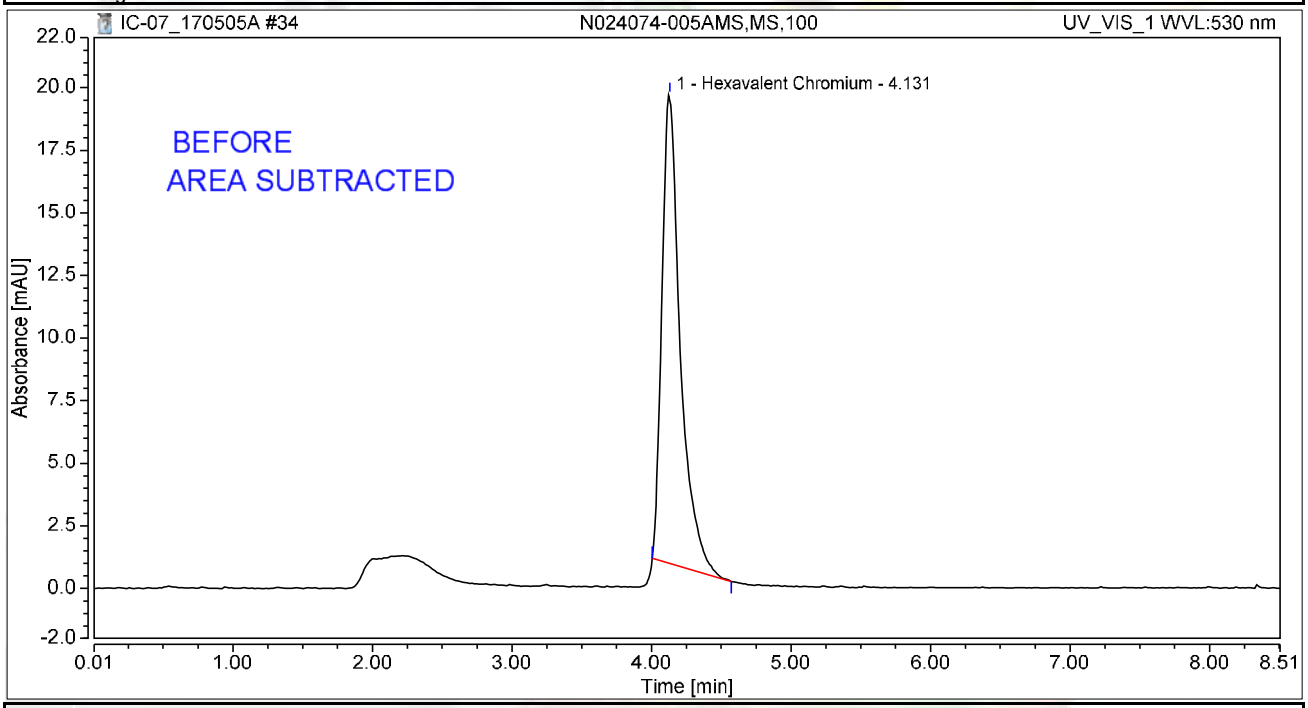
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024074-005AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.857	18.723	100.00	100.00	11.7149
Total:			**2.857**	**18.723**	**100.00**	**100.00**	

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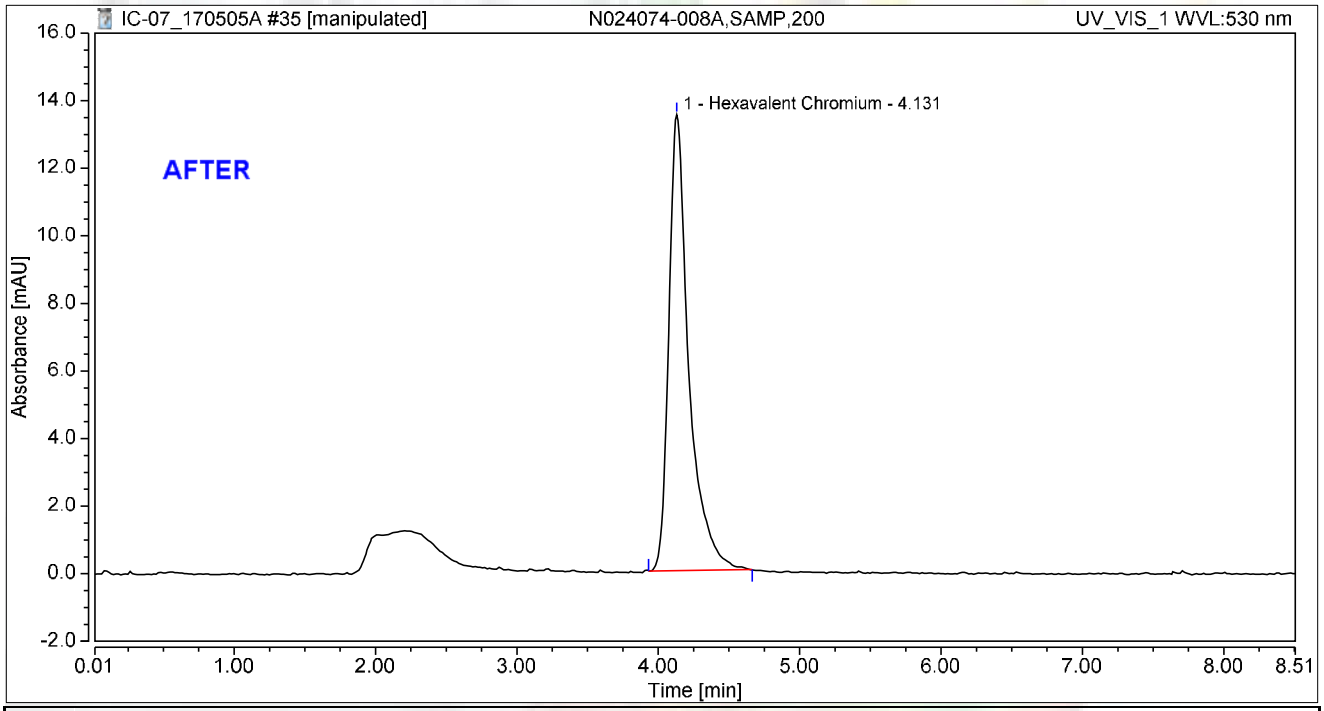
Chromatogram and Results

Injection Details

Injection Name:	**N024074-008A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.211	13.497	100.00	100.00	9.0668
Total:			**2.211**	**13.497**	**100.00**	**100.00**	

rba 5/9/2017

Reviewed by: Nancy 5/15/2017

My first report/Integration

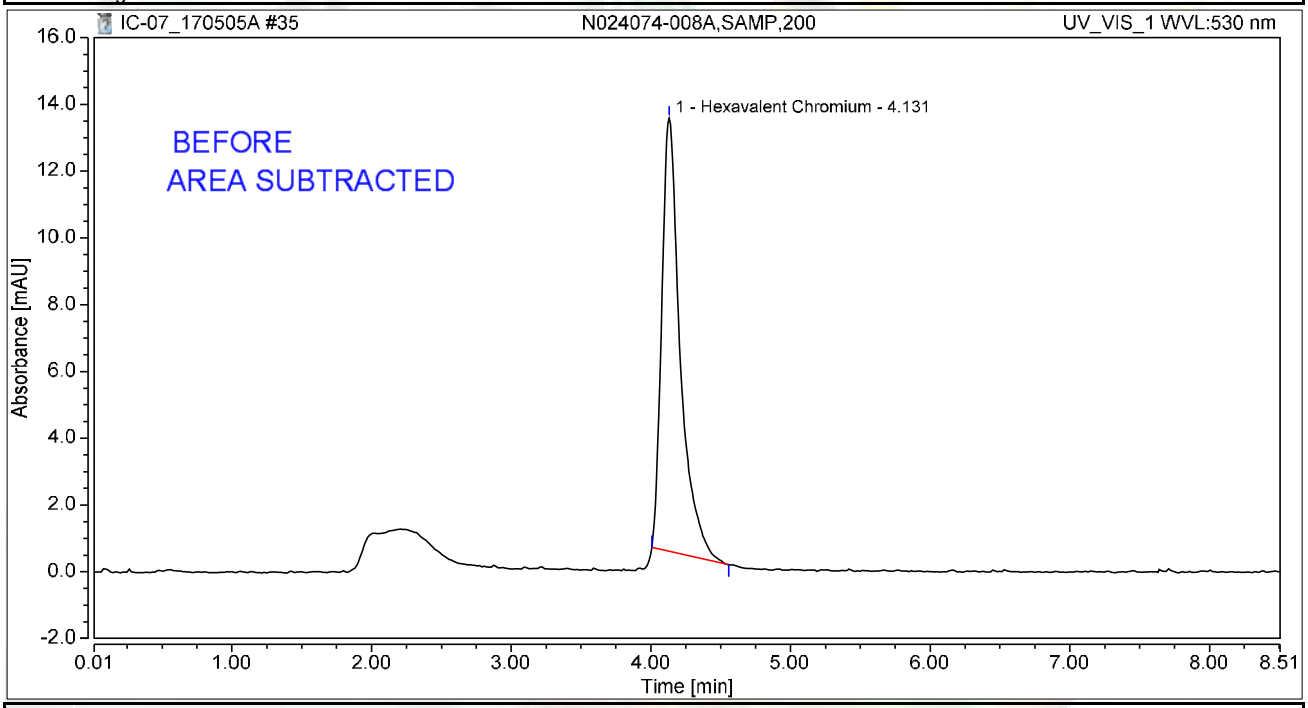
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024074-008A,SAMP,200**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 11:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.992	12.980	100.00	100.00	8.1682
Total:			**1.992**	**12.980**	**100.00**	**100.00**	

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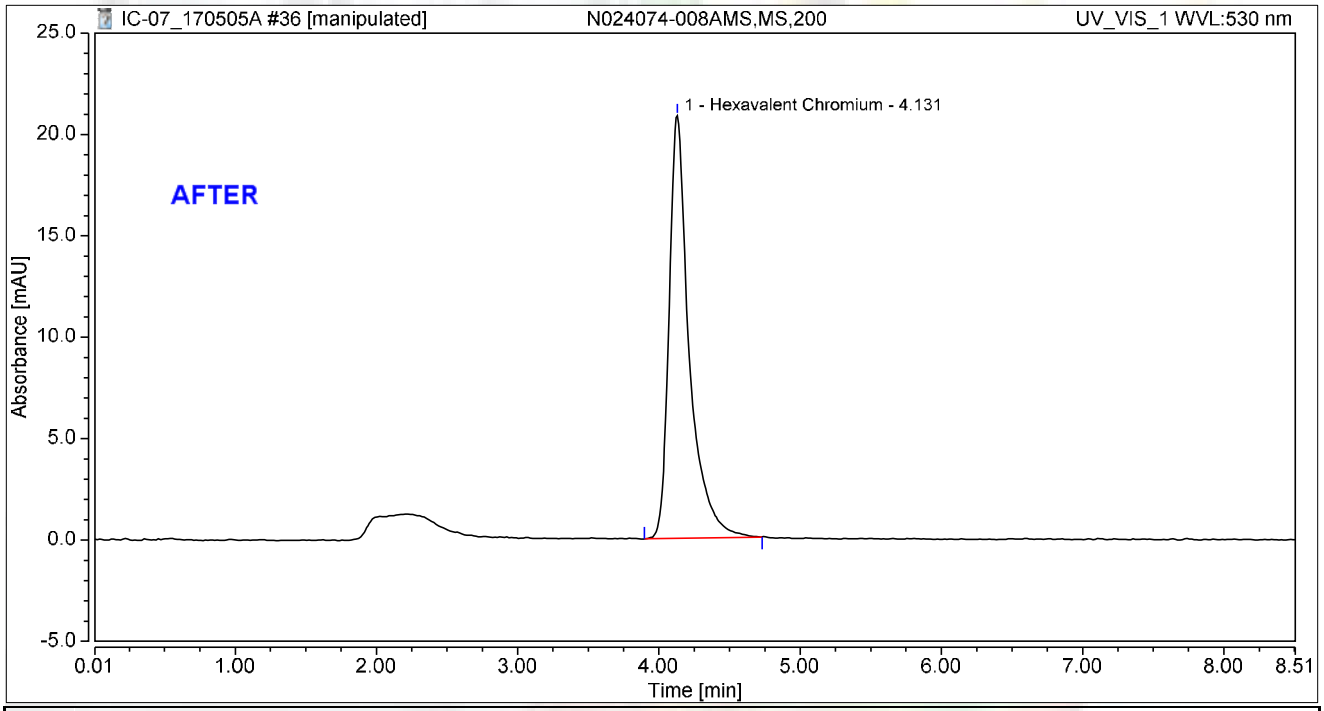
Chromatogram and Results

Injection Details

Injection Name:	**N024074-008AMS,MS,200**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.454	20.838	100.00	100.00	14.1613
Total:			**3.454**	**20.838**	**100.00**	**100.00**	

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Reviewed by: 5/15/2017

My first report/integration

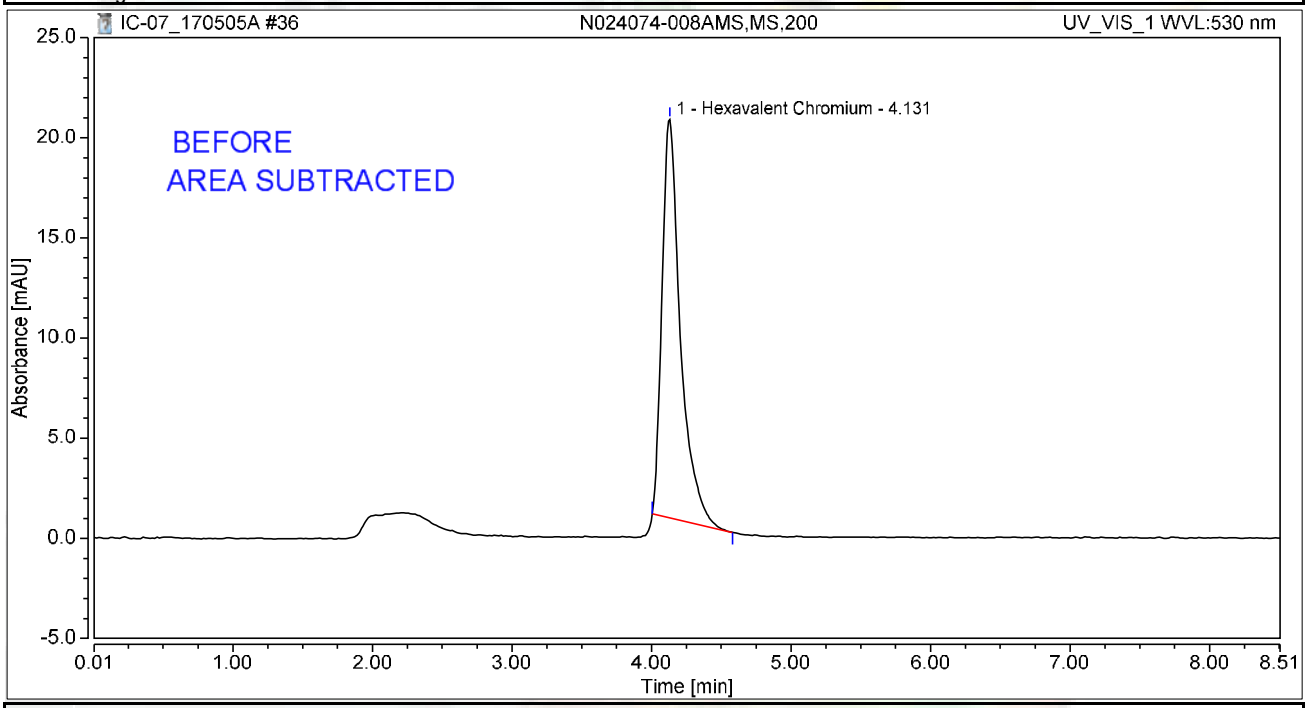
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024074-008AMS,MS,200**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.037	19.889	100.00	100.00	12.4526
Total:			**3.037**	**19.889**	**100.00**	**100.00**	

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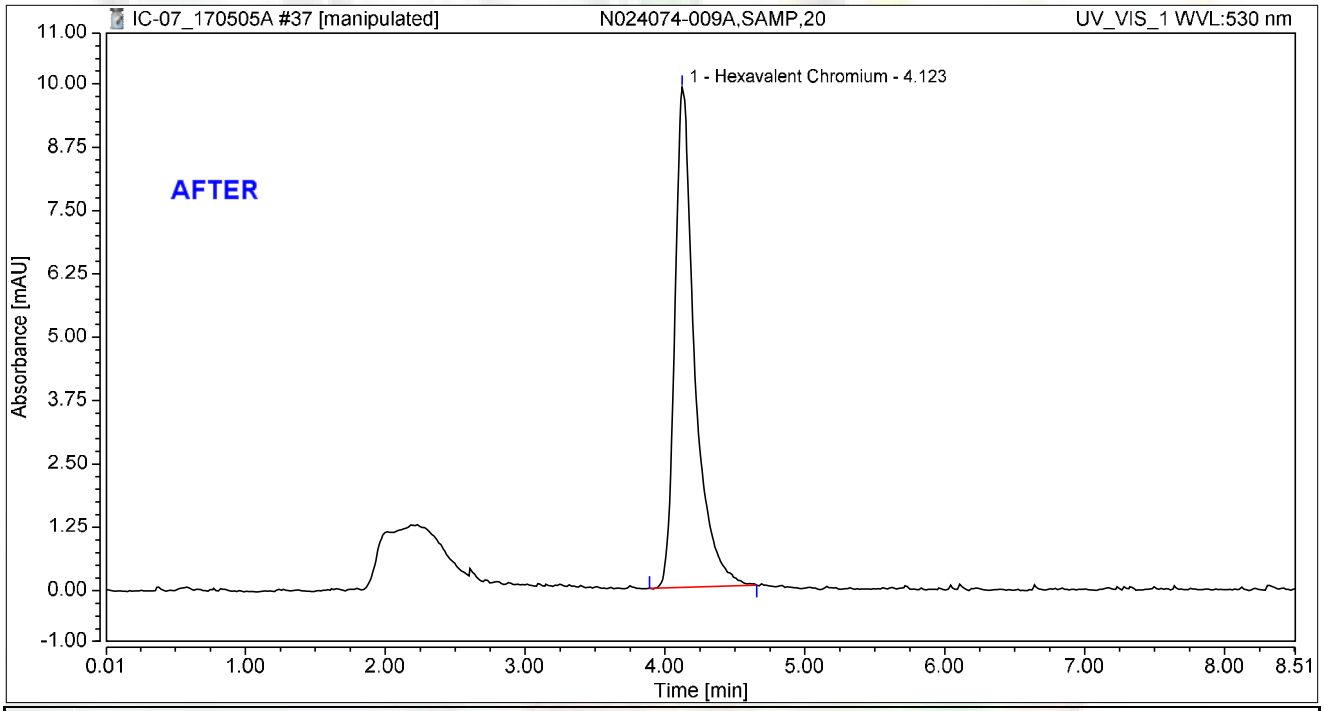
Chromatogram and Results

Injection Details

Injection Name:	**N024074-009A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.623	9.861	100.00	100.00	6.6553
Total:			**1.623**	**9.861**	**100.00**	**100.00**	

rba 5/9/2017

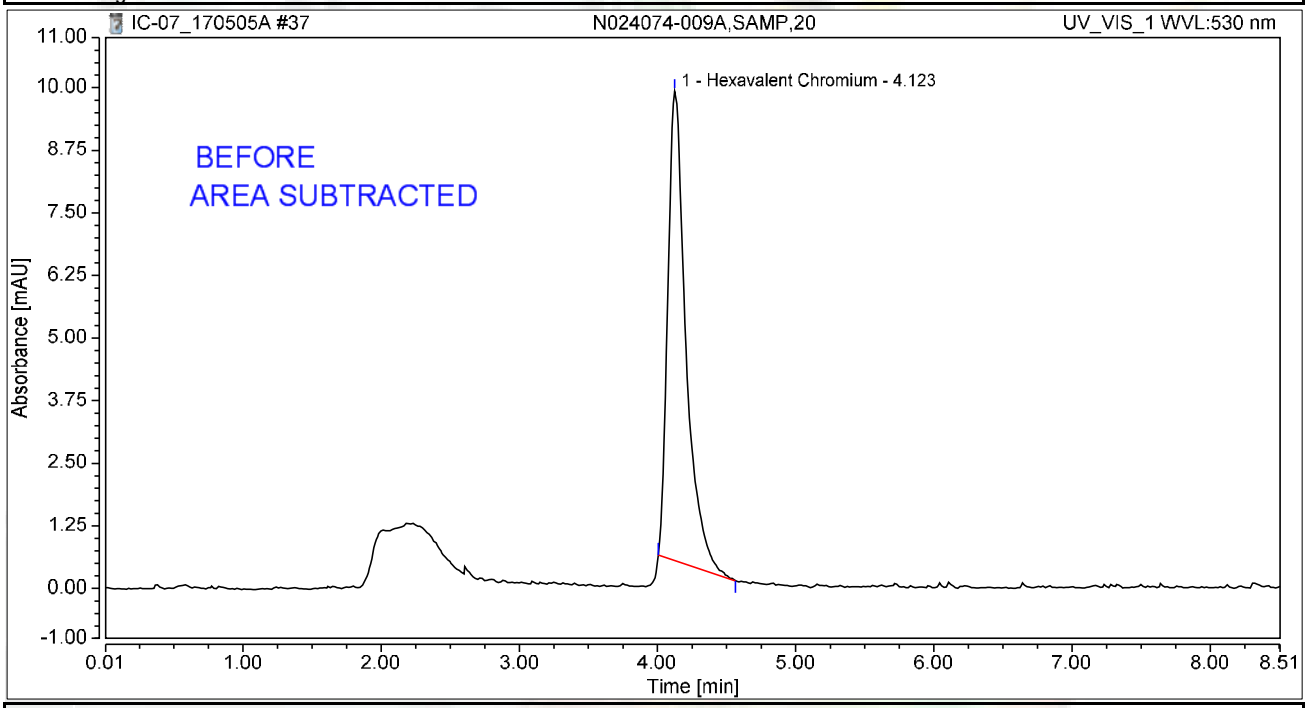
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-009A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	1.424	9.367	100.00	100.00	5.8389
Total:			**1.424**	**9.367**	**100.00**	**100.00**	

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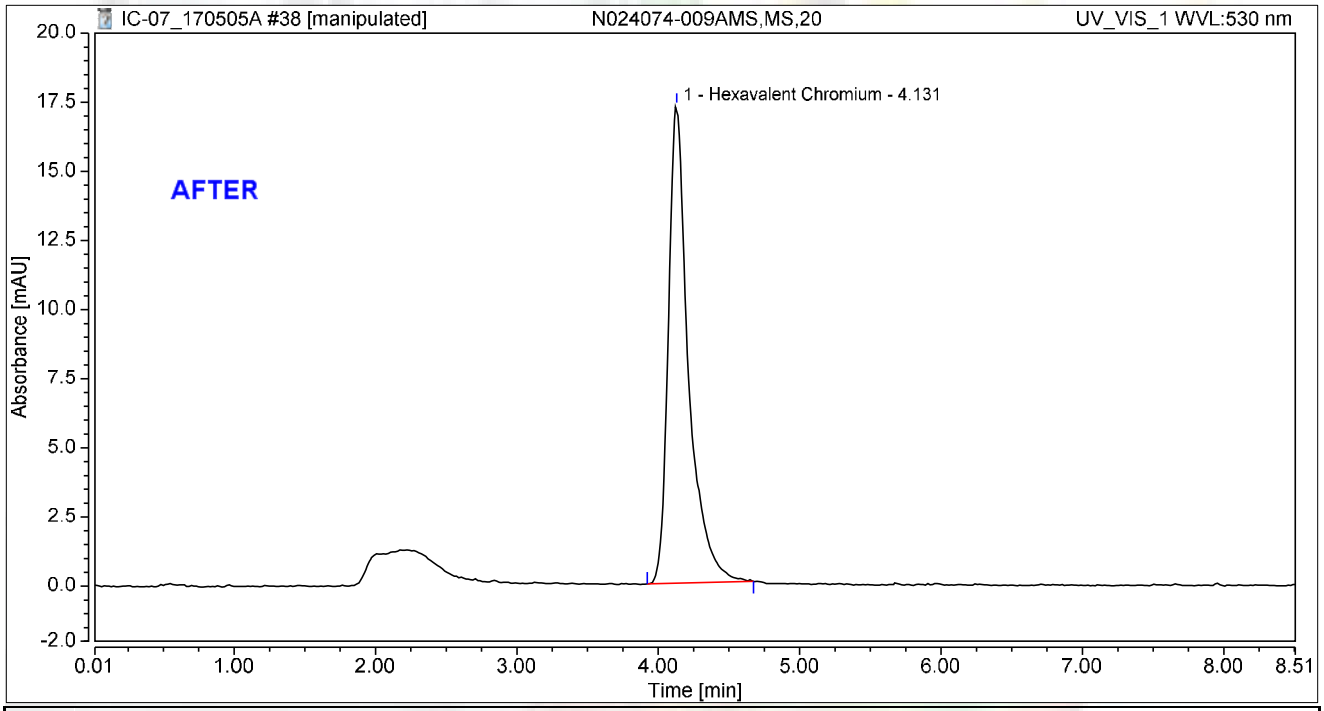
Chromatogram and Results

Injection Details

Injection Name:	**N024074-009AMS,MS,20**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.854	17.273	100.00	100.00	11.7002
Total:			**2.854**	**17.273**	**100.00**	**100.00**	

rba 5/9/2017

Reviewed by: 5/15/2017
My first report/Integration

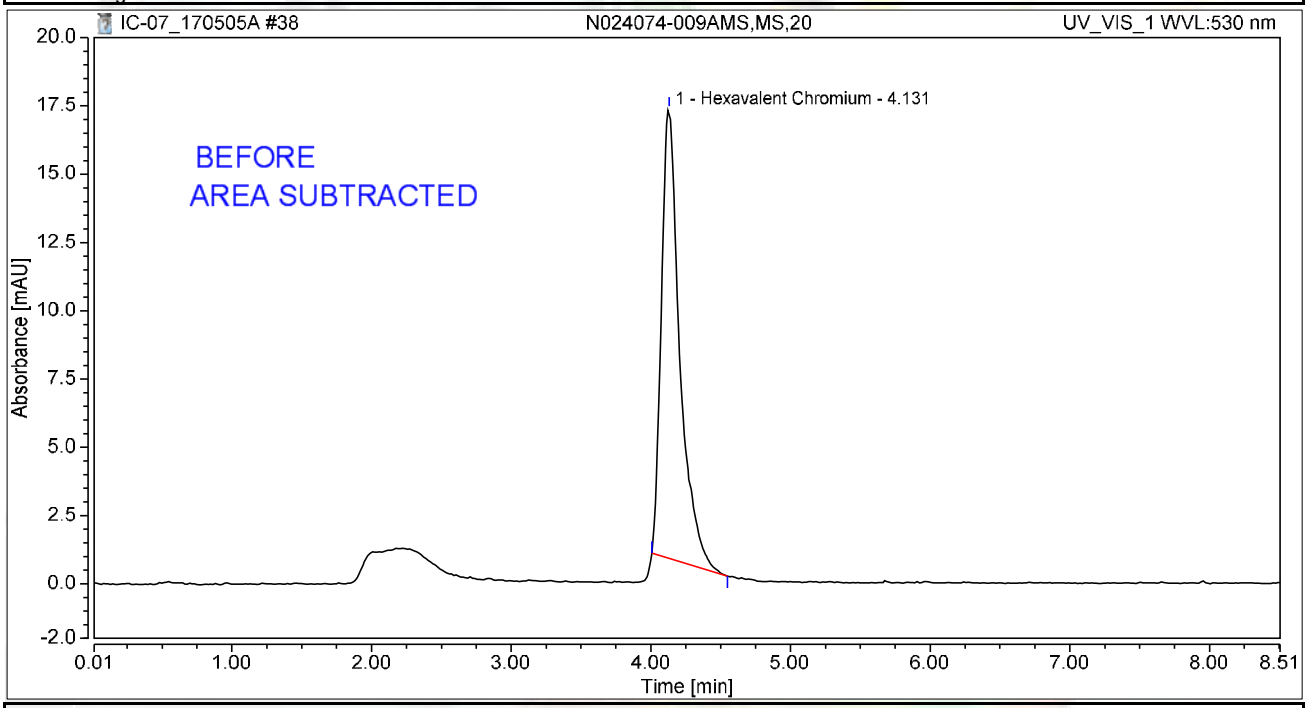
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024074-009AMS,MS,20**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.510	16.444	100.00	100.00	10.2912
Total:			**2.510**	**16.444**	**100.00**	**100.00**	

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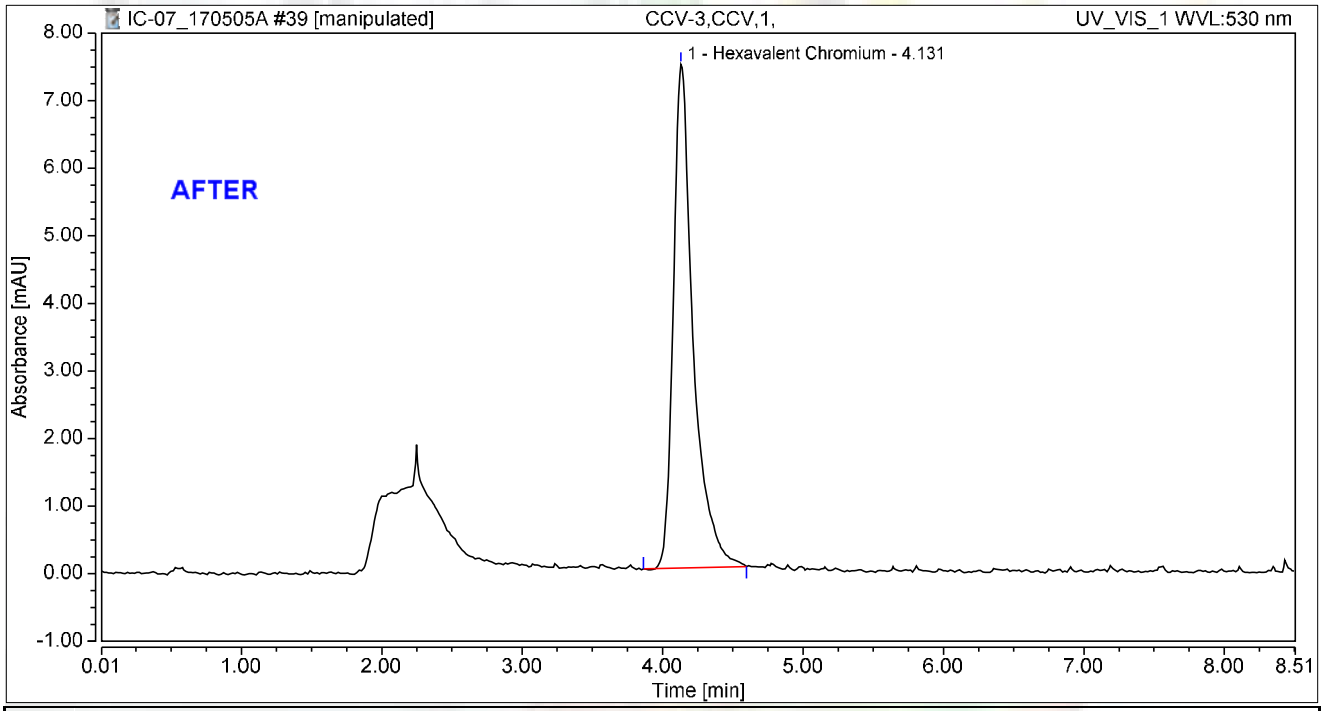
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.220	7.453	100.00	100.00	5.0022
Total:			**1.220**	**7.453**	**100.00**	**100.00**	

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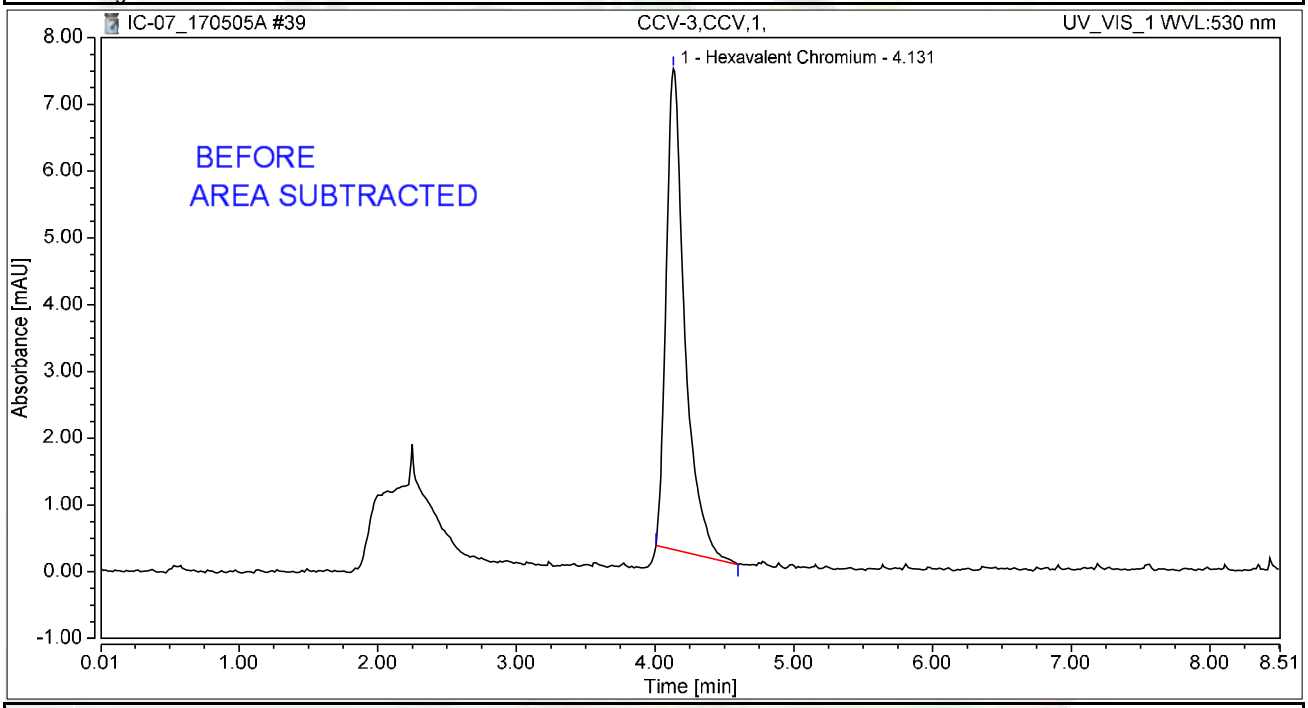
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.121	7.204	100.00	100.00	4.5953
Total:			**1.121**	**7.204**	**100.00**	**100.00**	

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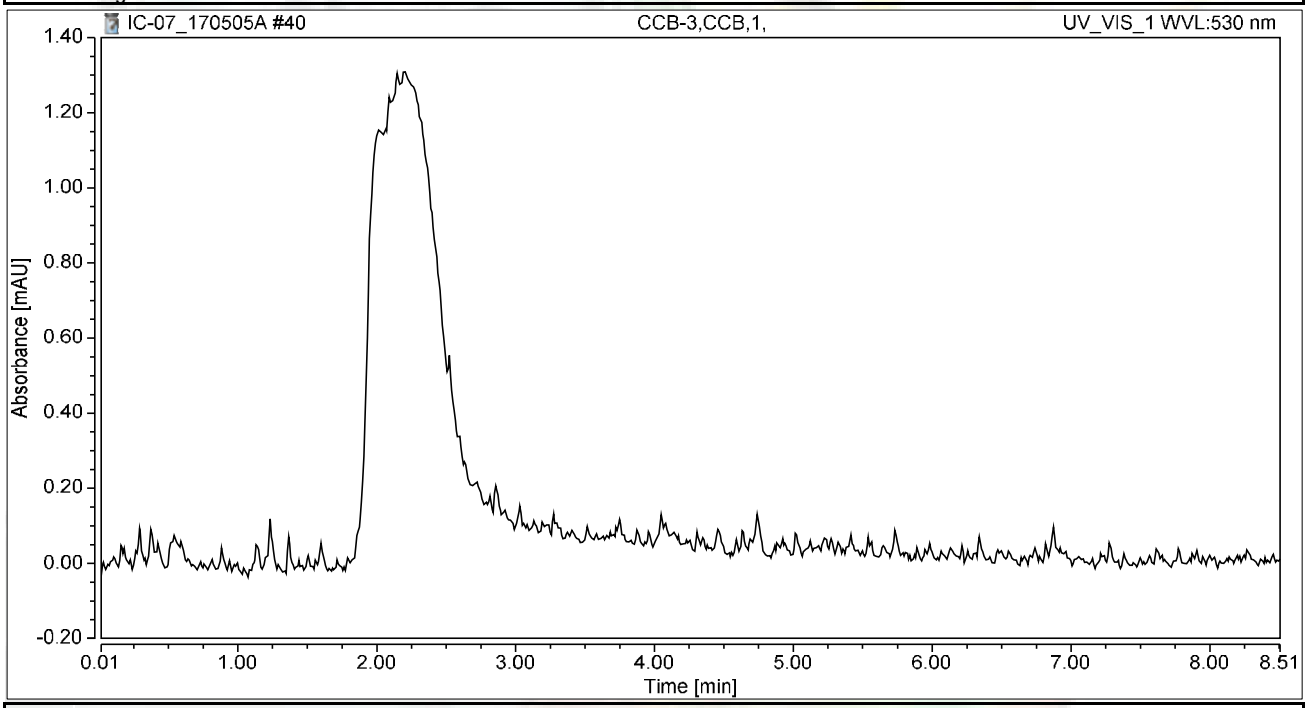
Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

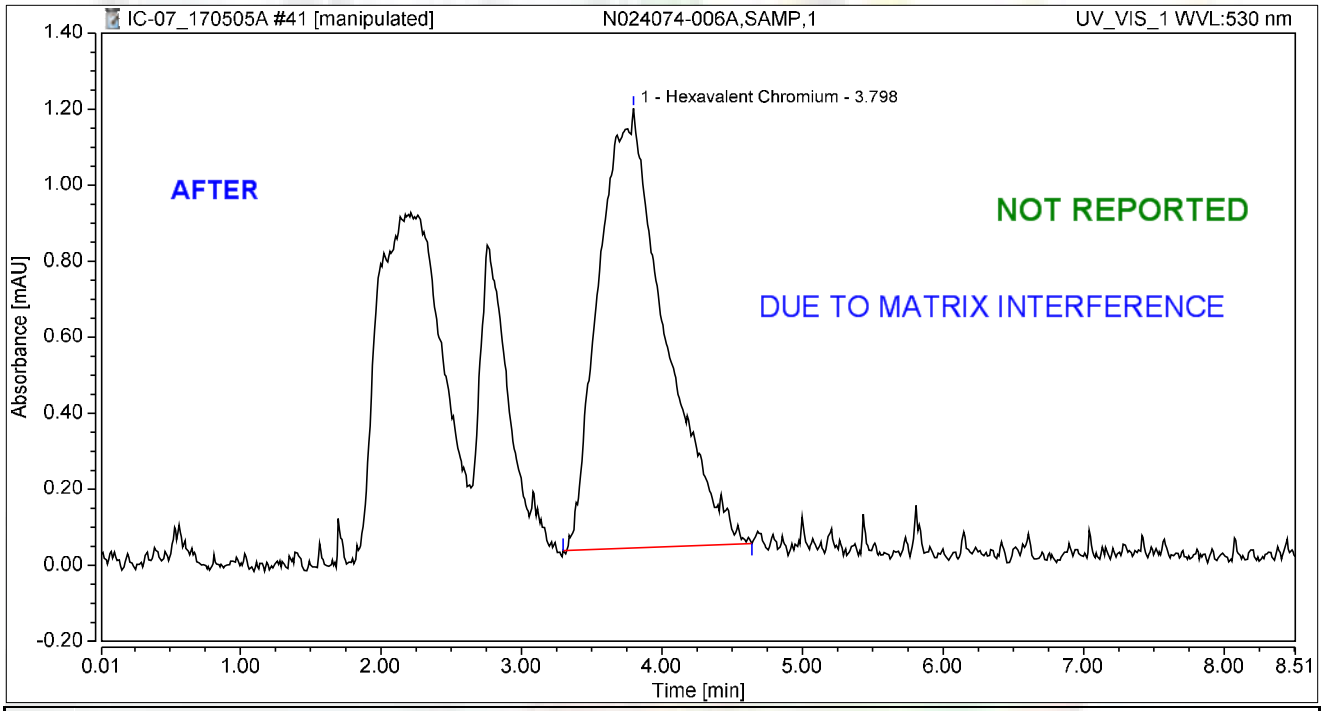
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.798	0.628	1.157	100.00	100.00	2.5762
Total:			**0.628**	**1.157**	**100.00**	**100.00**	

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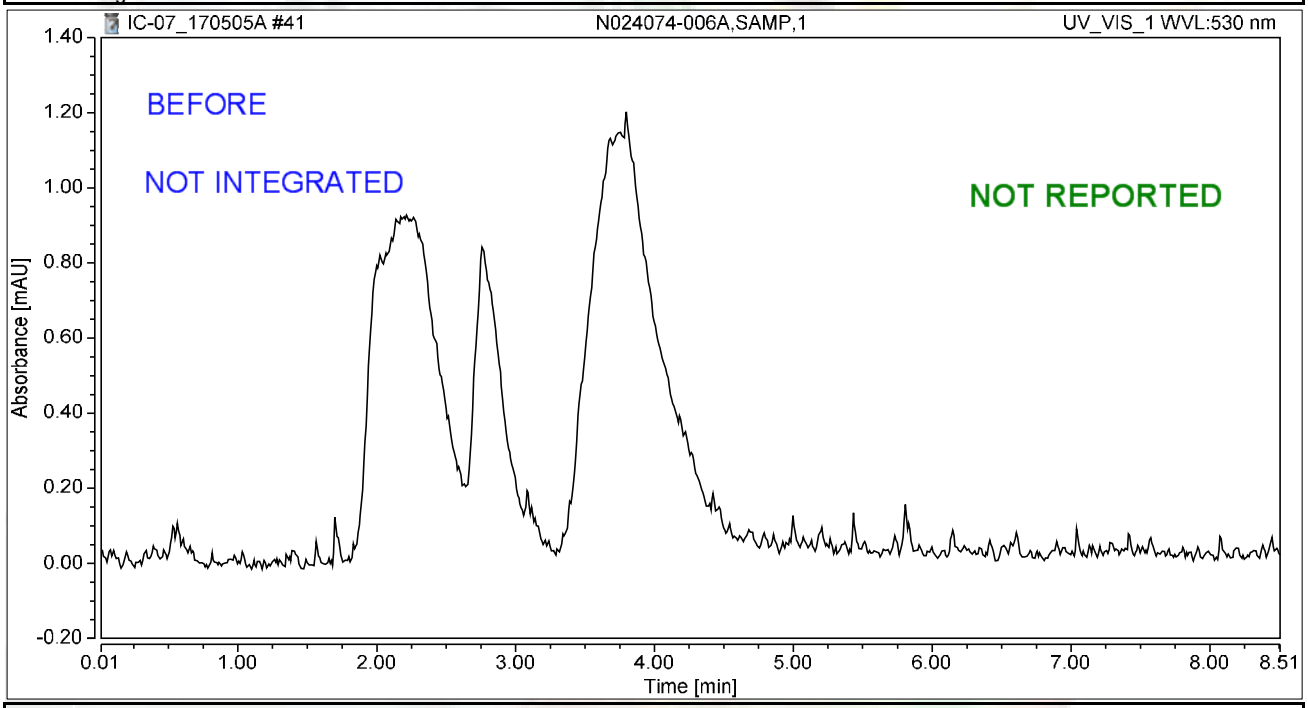
Chromatogram and Results

Injection Details

Injection Name:	**N024074-006A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 12:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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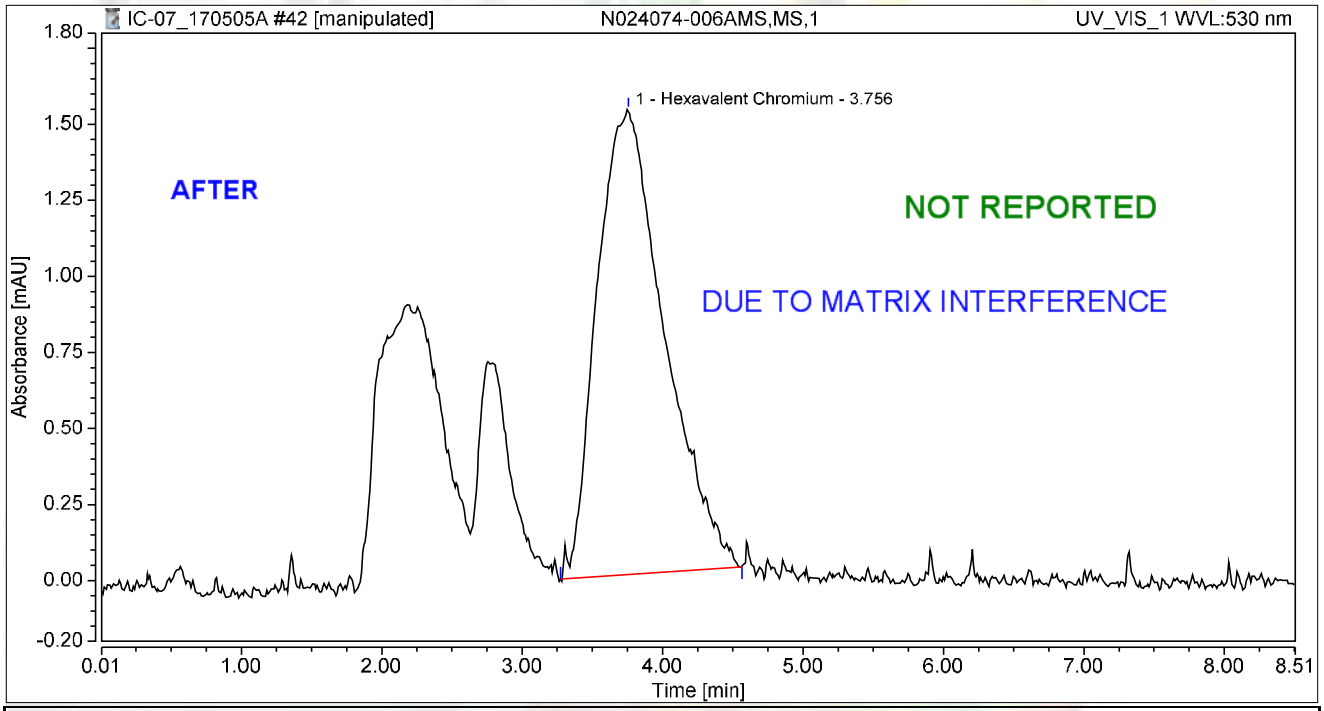
Chromatogram and Results

Injection Details

Injection Name:	**N024074-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.756	0.850	1.528	100.00	100.00	3.4858
Total:			**0.850**	**1.528**	**100.00**	**100.00**	

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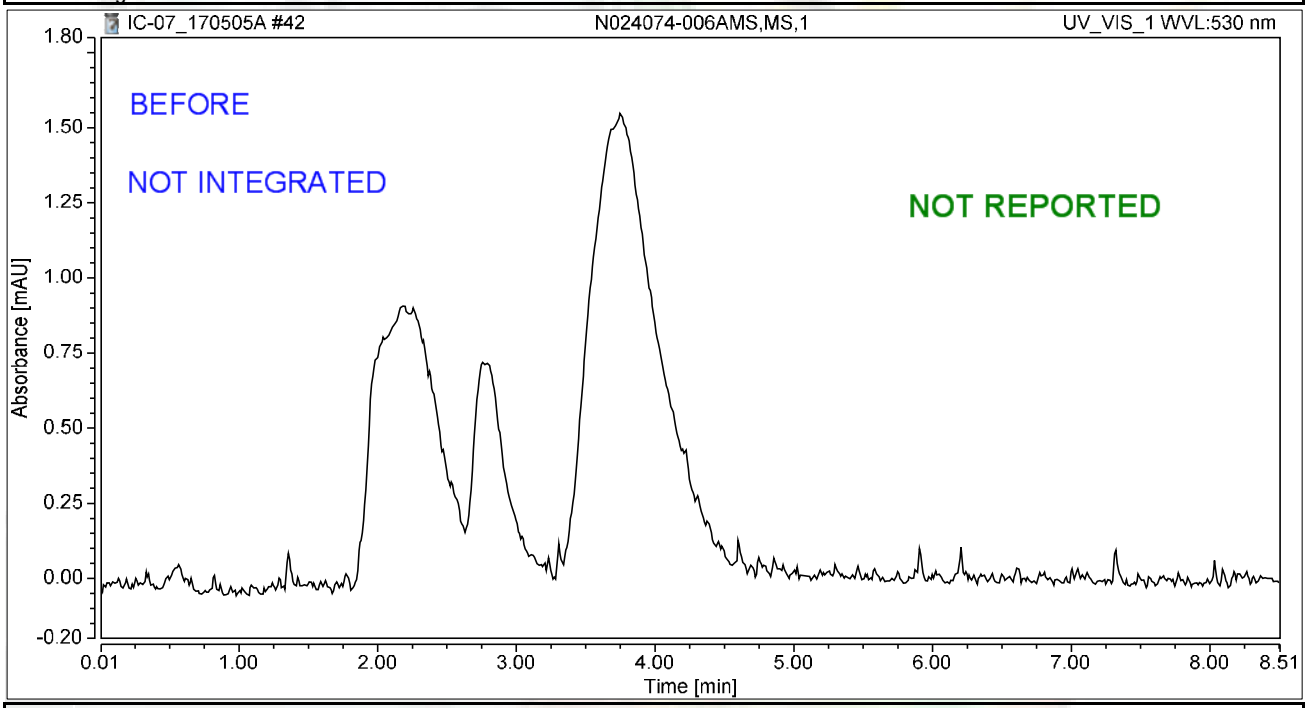
Chromatogram and Results

Injection Details

Injection Name:	**N024074-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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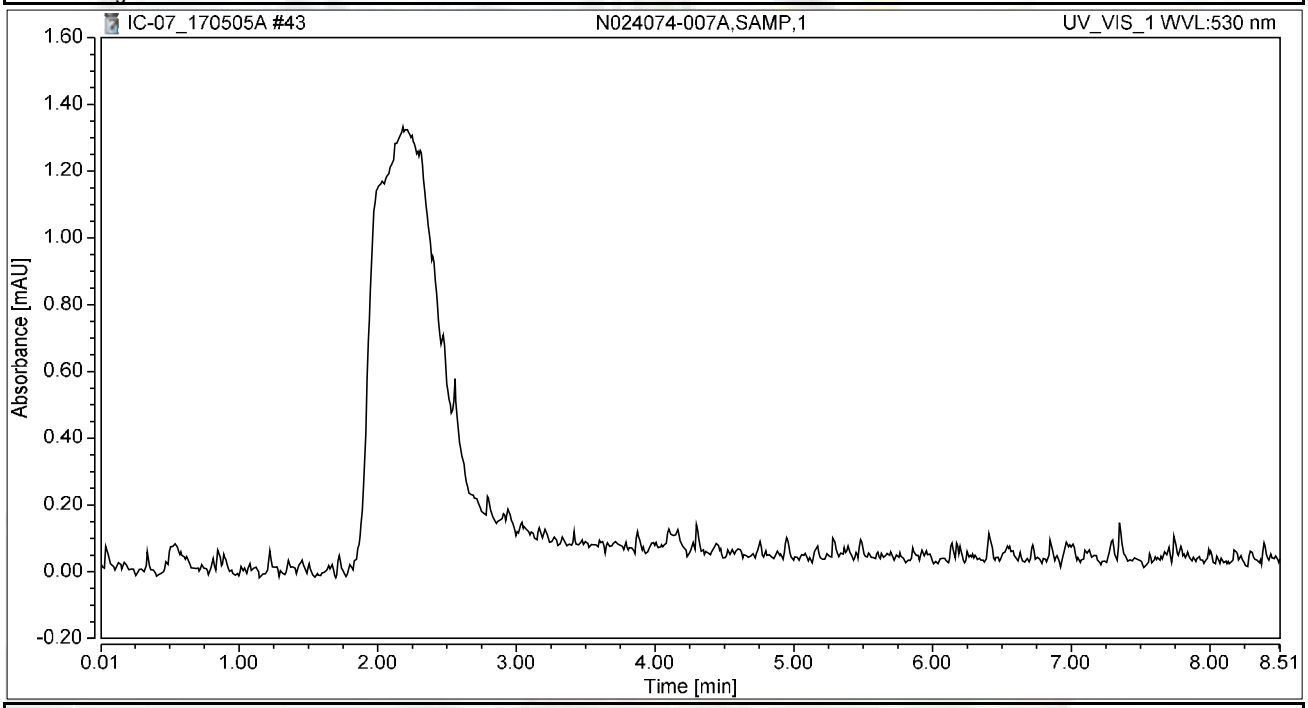
Chromatogram and Results

Injection Details

Injection Name:	**N024074-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

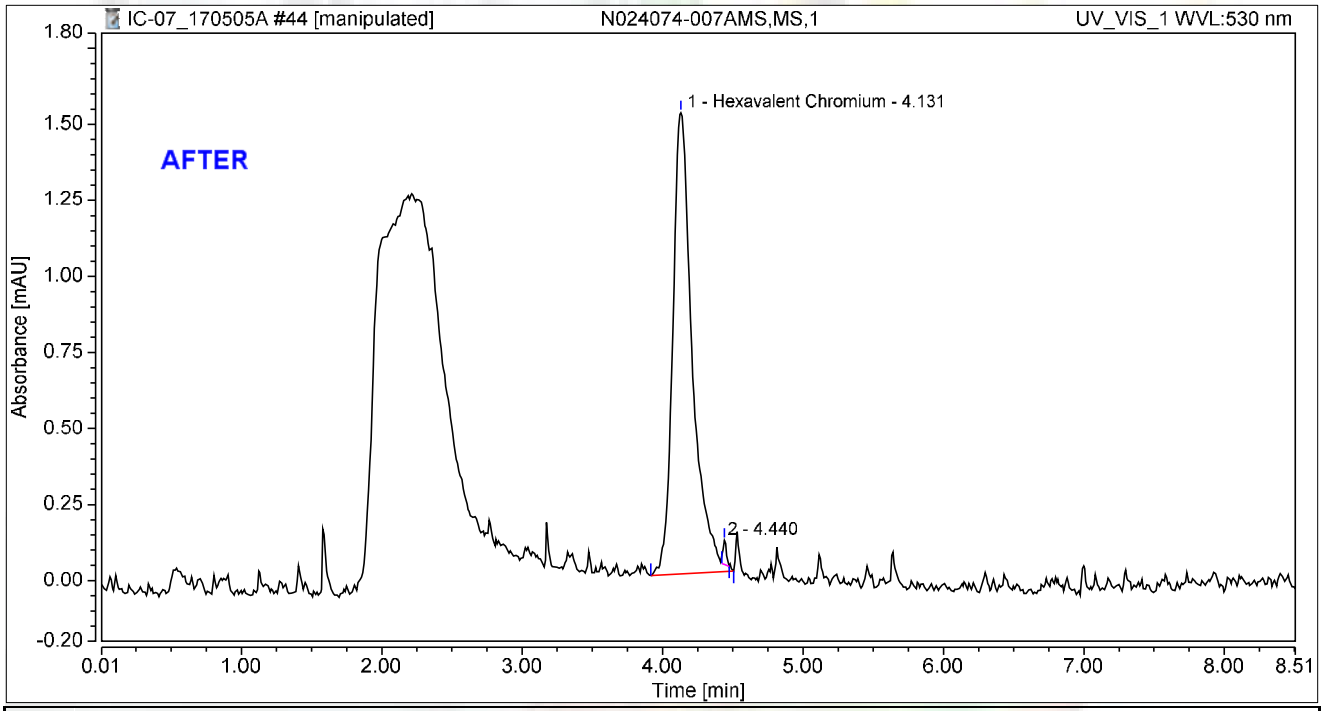
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.245	1.516	99.18	95.04	1.0042
2		4.440	0.002	0.079	0.82	4.96	n.a.
Total:			**0.247**	**1.595**	**100.00**	**100.00**	

rba 5/9/2017

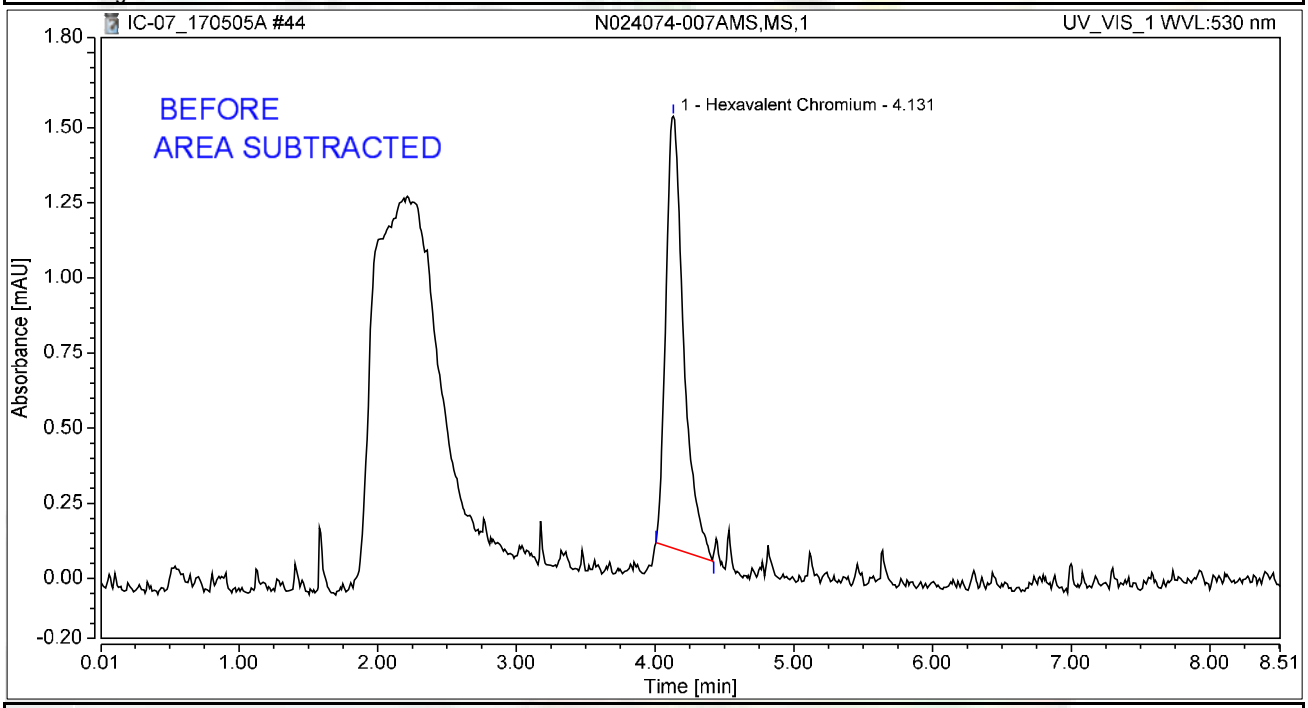
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.214	1.438	100.00	100.00	0.8788
Total:			**0.214**	**1.438**	**100.00**	**100.00**	

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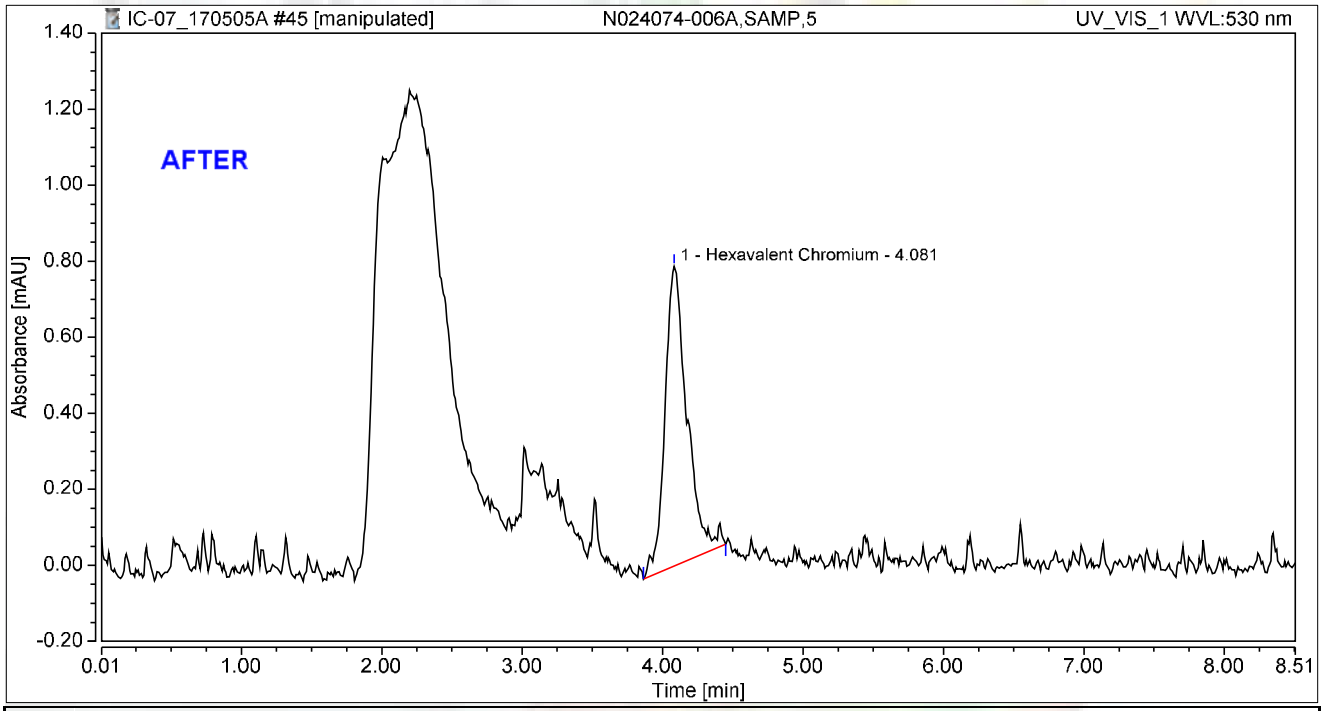
Chromatogram and Results

Injection Details

Injection Name:	**N024074-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.144	0.789	100.00	100.00	0.5892
Total:			**0.144**	**0.789**	**100.00**	**100.00**	

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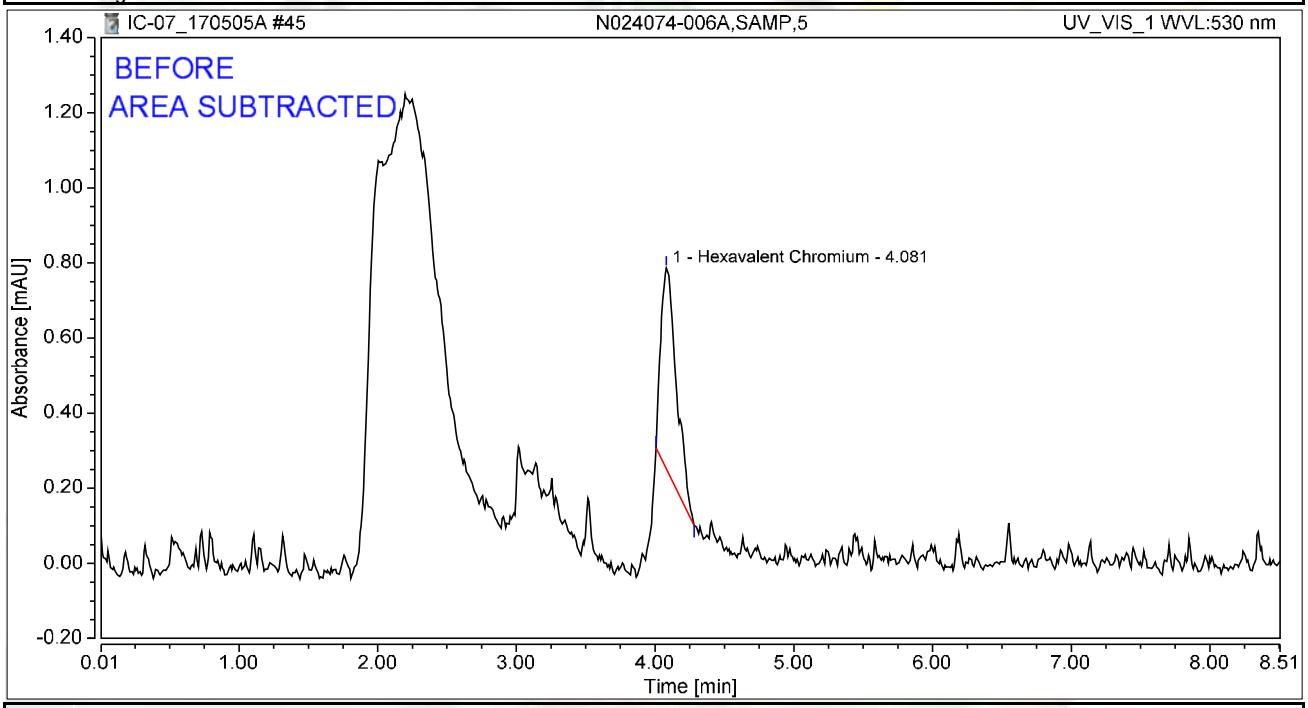
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-006A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.081	0.070	0.535	100.00	100.00	0.2882
Total:			**0.070**	**0.535**	**100.00**	**100.00**	

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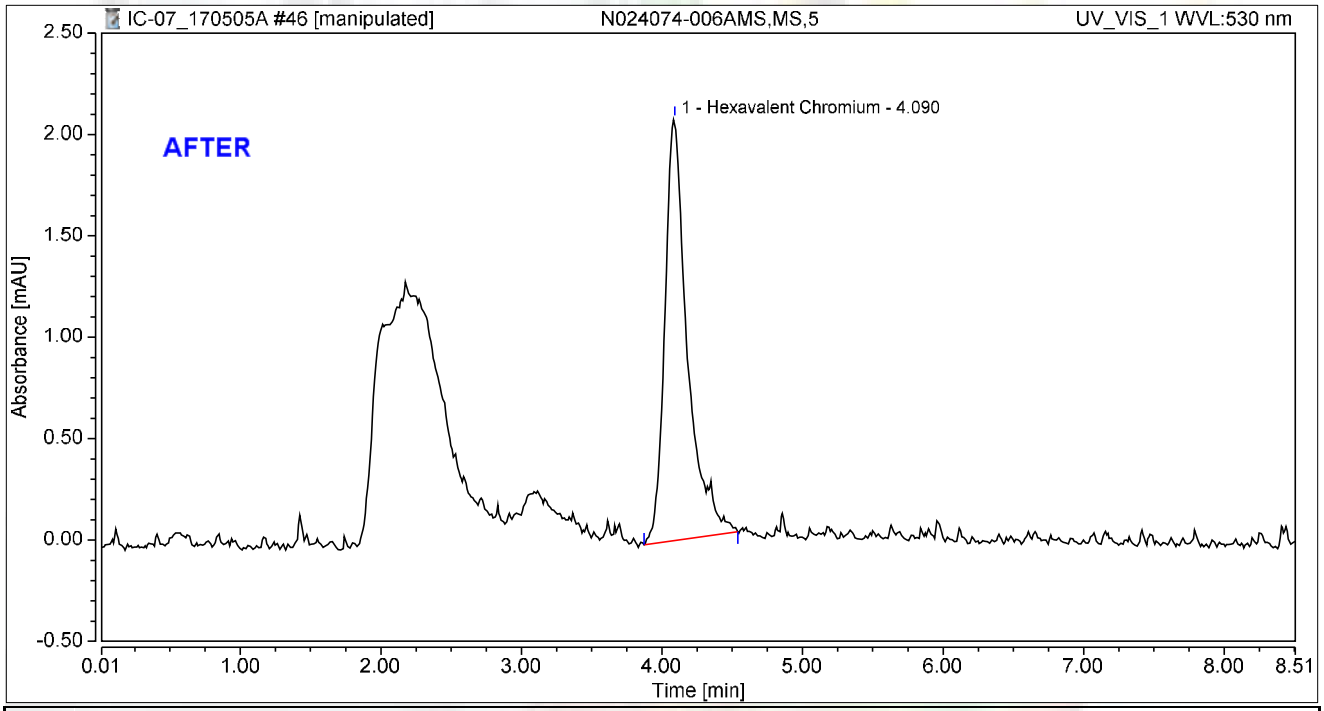
Chromatogram and Results

Injection Details

Injection Name:	**N024074-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.387	2.081	100.00	100.00	1.5850
Total:			**0.387**	**2.081**	**100.00**	**100.00**	

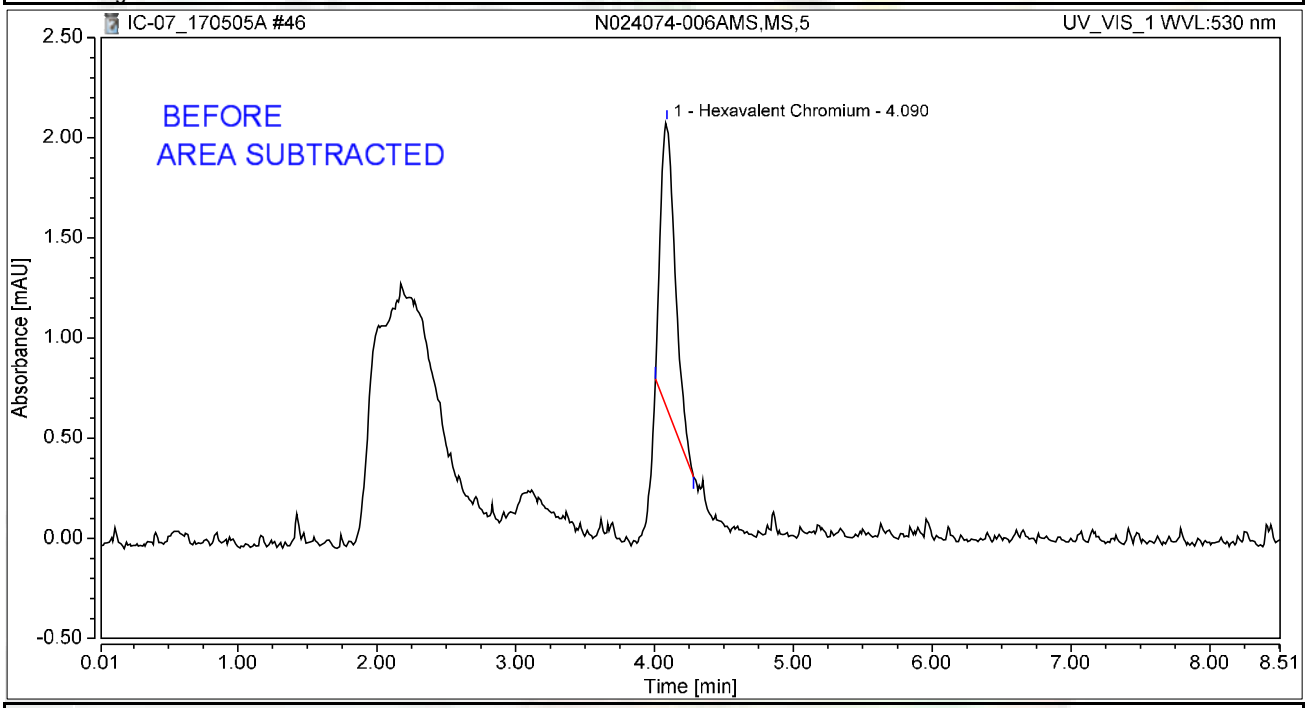
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-006AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.176	1.430	100.00	100.00	0.7215
Total:			**0.176**	**1.430**	**100.00**	**100.00**	

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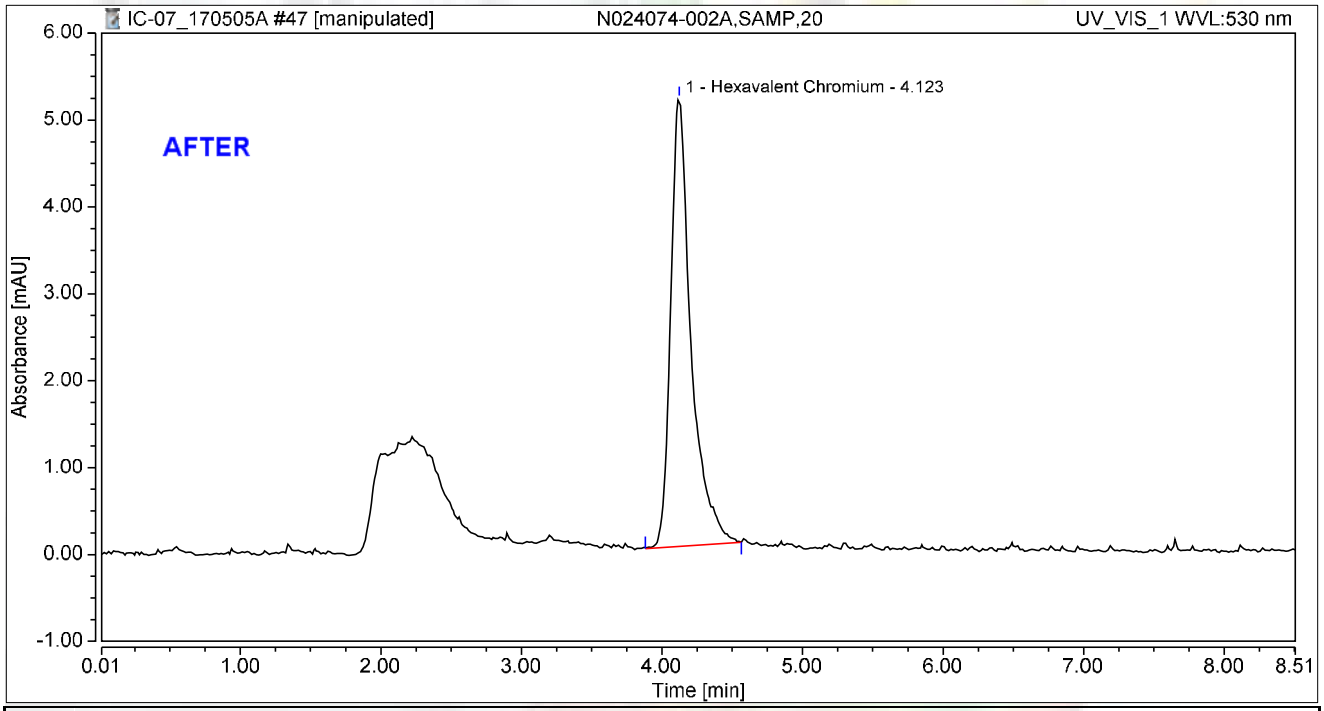
Chromatogram and Results

Injection Details

Injection Name:	**N024074-002A,SAMP,20**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.865	5.154	100.00	100.00	3.5469
Total:			**0.865**	**5.154**	**100.00**	**100.00**	

rba 5/9/2017

Reviewed by: 5/15/2017

My first report/Integration

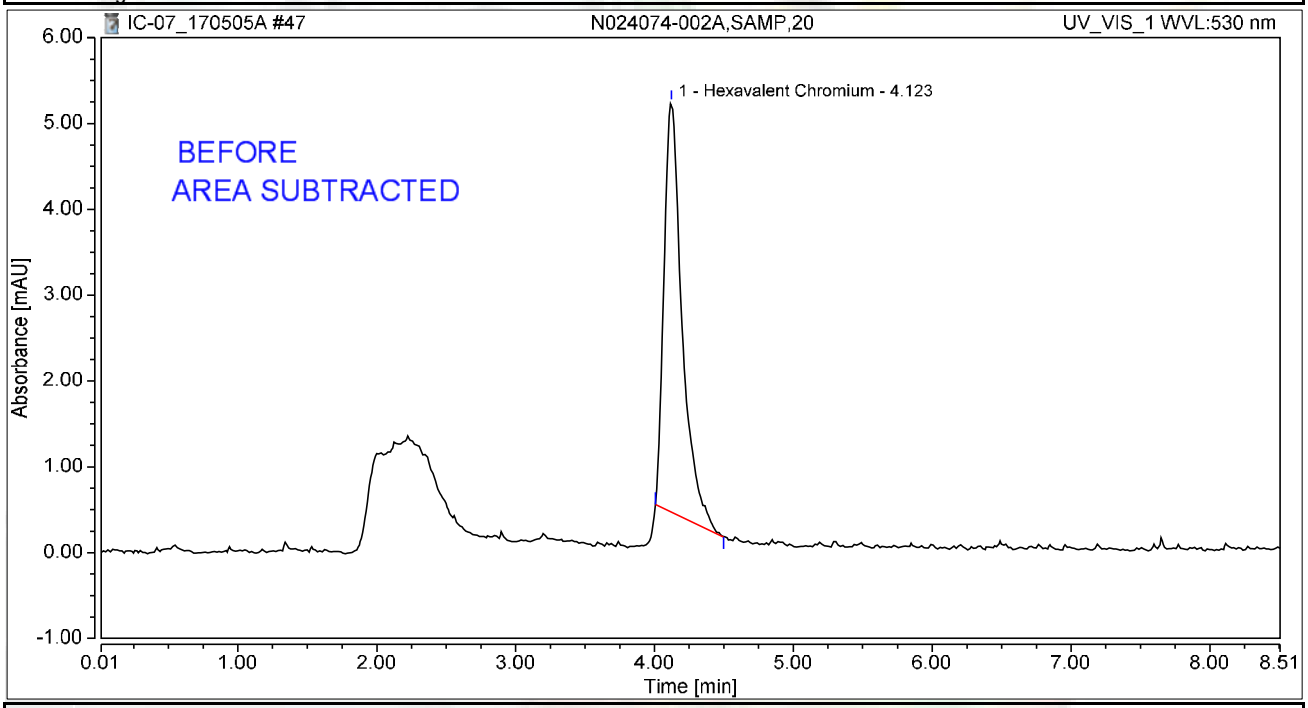
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024074-002A,SAMP,20**	*Run Time (min):*	**8.49**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 13:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.722	4.776	100.00	100.00	2.9597
Total:			**0.722**	**4.776**	**100.00**	**100.00**	

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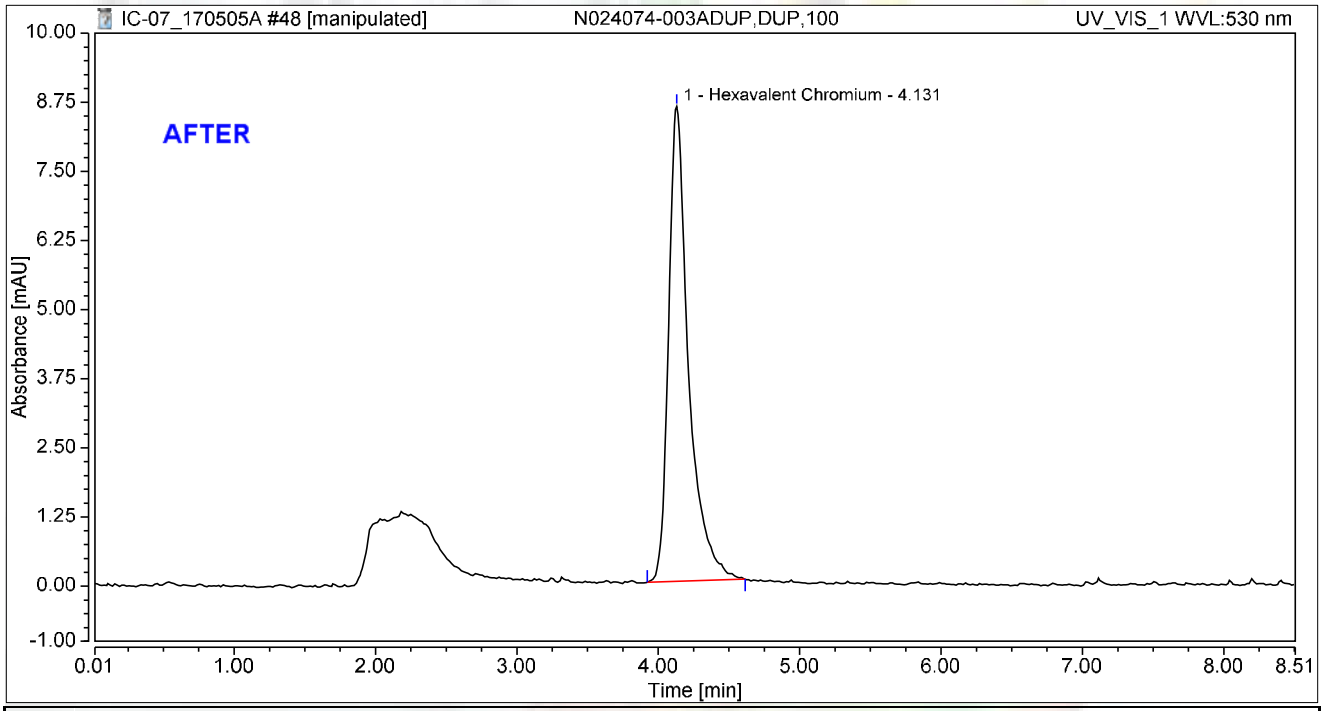
Chromatogram and Results

Injection Details

Injection Name:	**N024074-003ADUP,DUP,100**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.406	8.586	100.00	100.00	5.7635
Total:			**1.406**	**8.586**	**100.00**	**100.00**	

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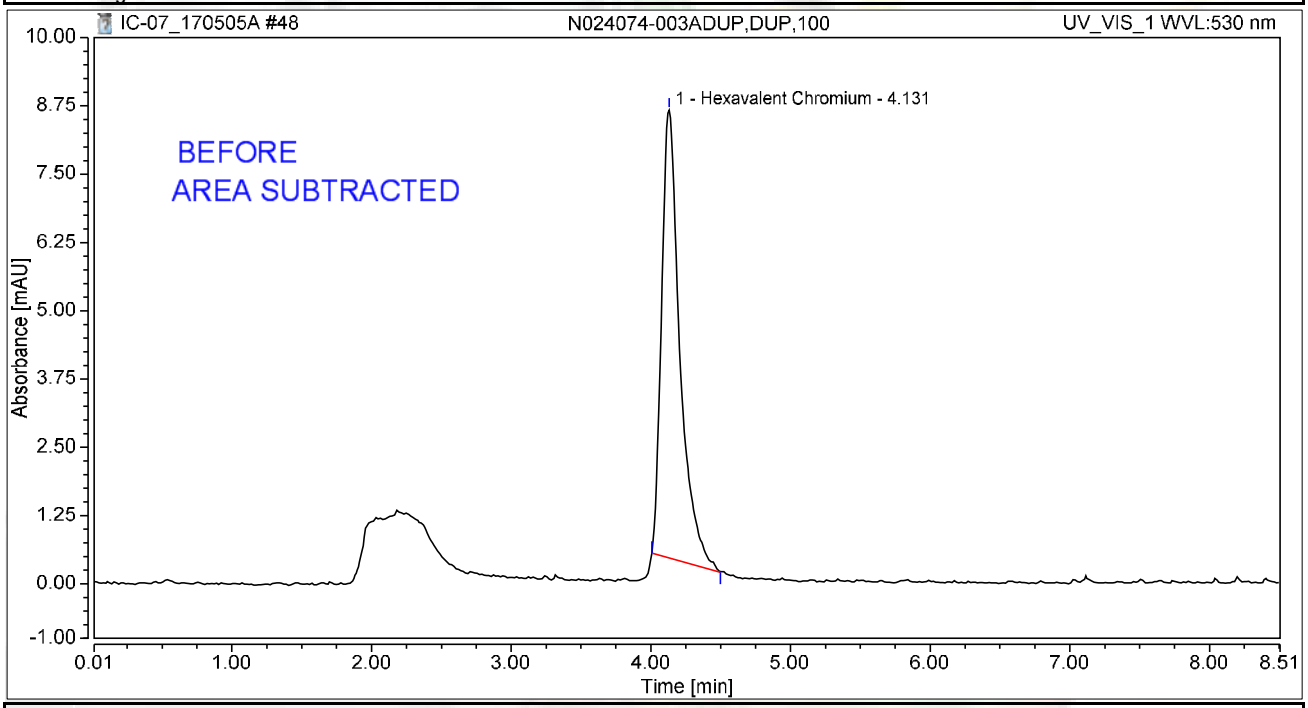
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-003ADUP,DUP,100**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.246	8.200	100.00	100.00	5.1101
Total:			**1.246**	**8.200**	**100.00**	**100.00**	

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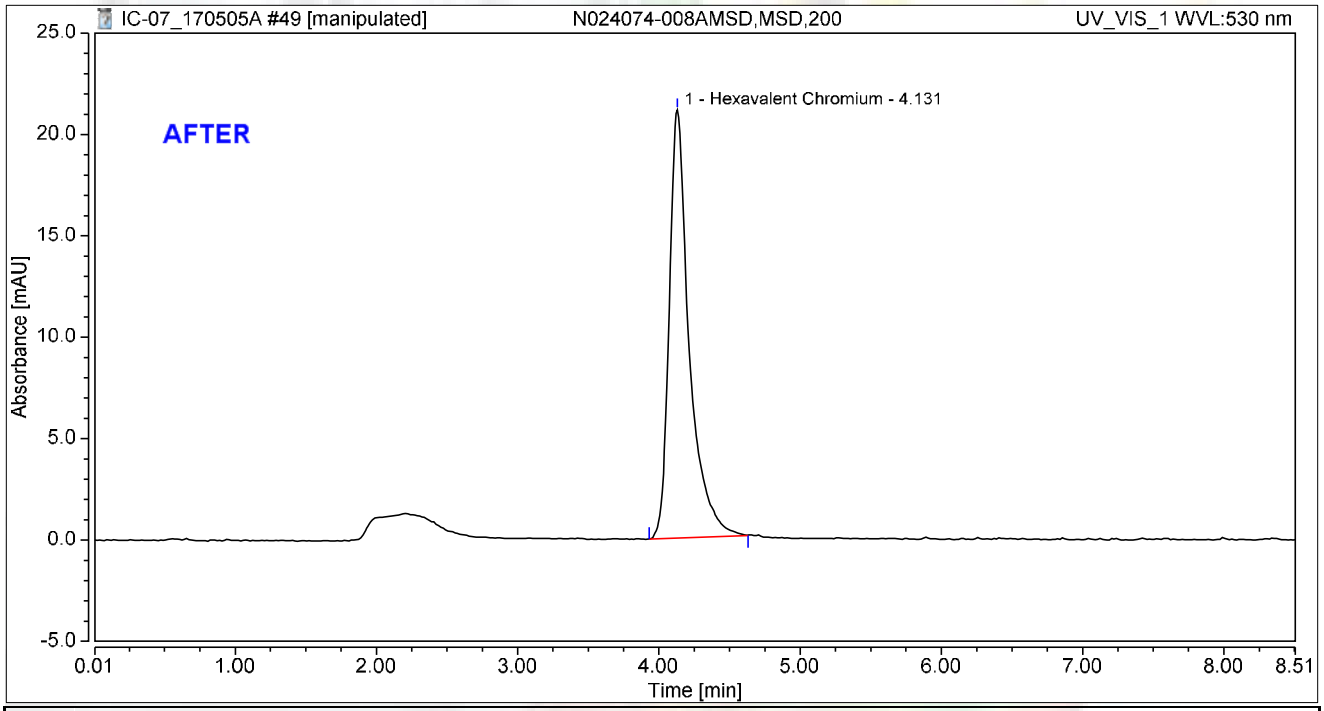
Chromatogram and Results

Injection Details

Injection Name:	**N024074-008AMSD,MSD,200**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.472	21.108	100.00	100.00	14.2372
Total:			**3.472**	**21.108**	**100.00**	**100.00**	

rba 5/9/2017

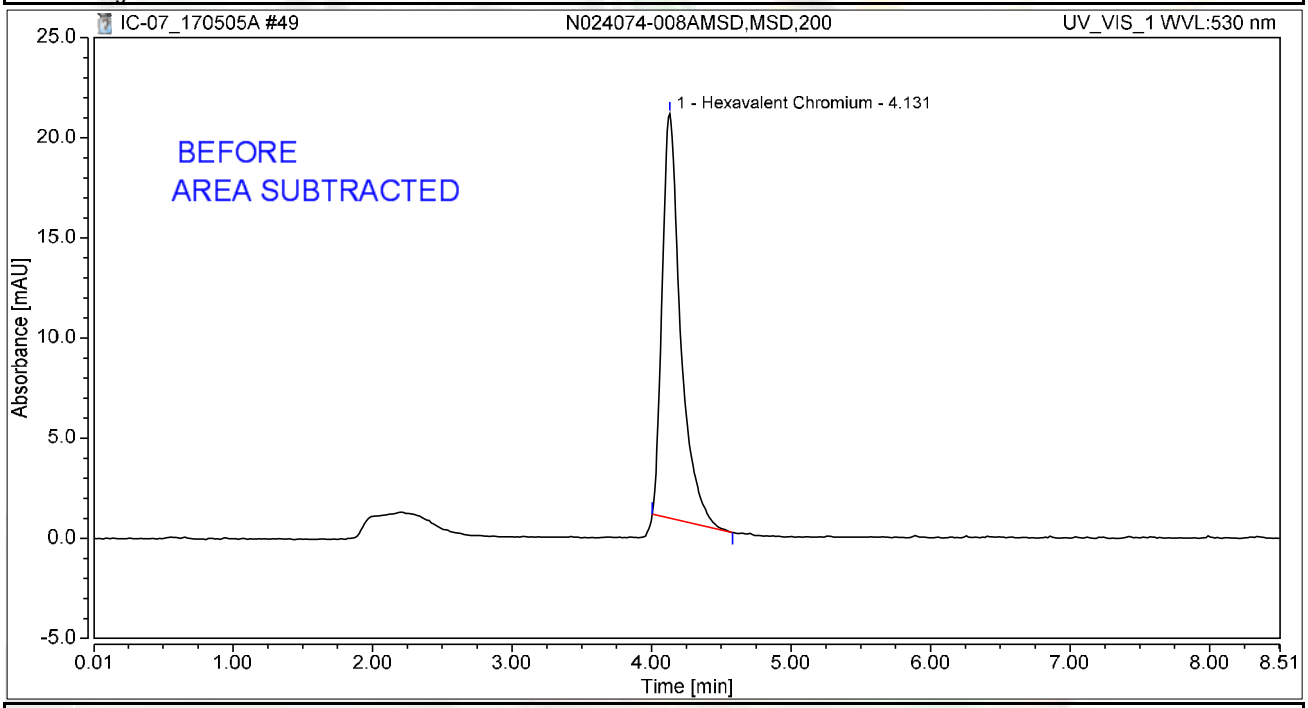
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-008AMSD,MSD,200**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.089	20.187	100.00	100.00	12.6652
Total:			**3.089**	**20.187**	**100.00**	**100.00**	

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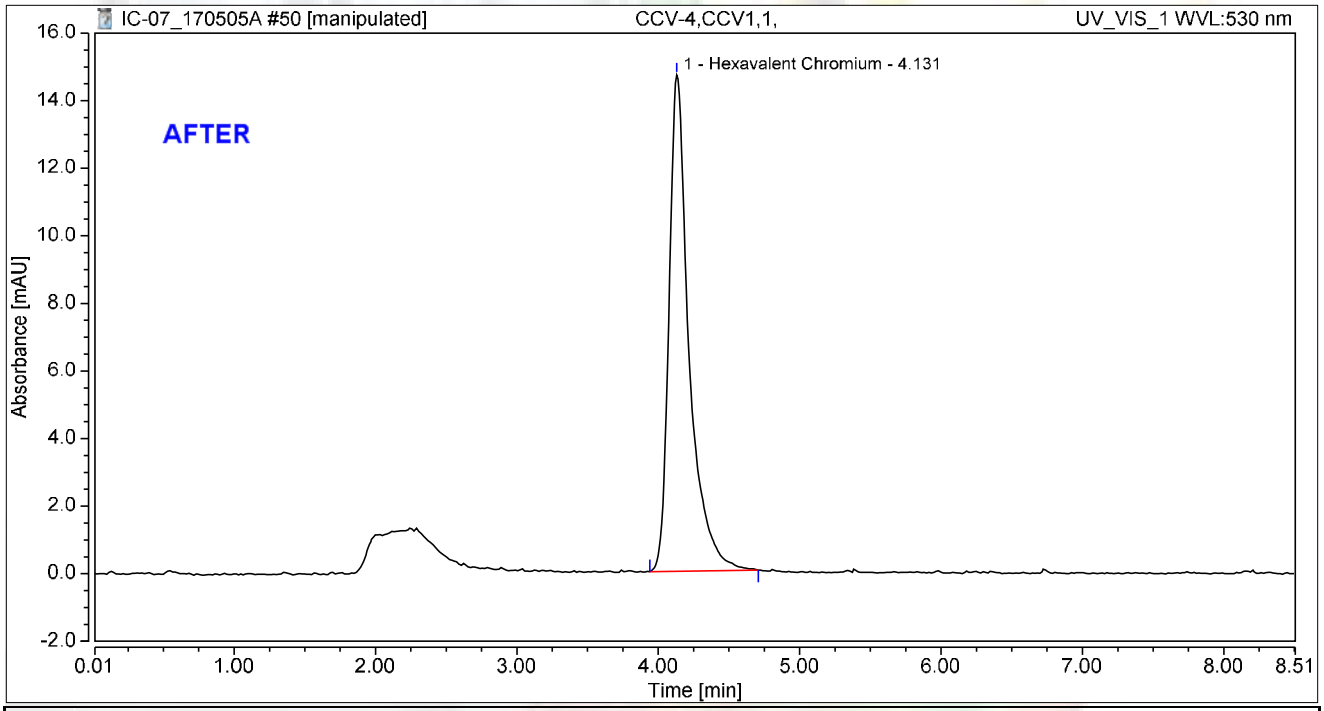
Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.407	14.680	100.00	100.00	9.8681
Total:			**2.407**	**14.680**	**100.00**	**100.00**	

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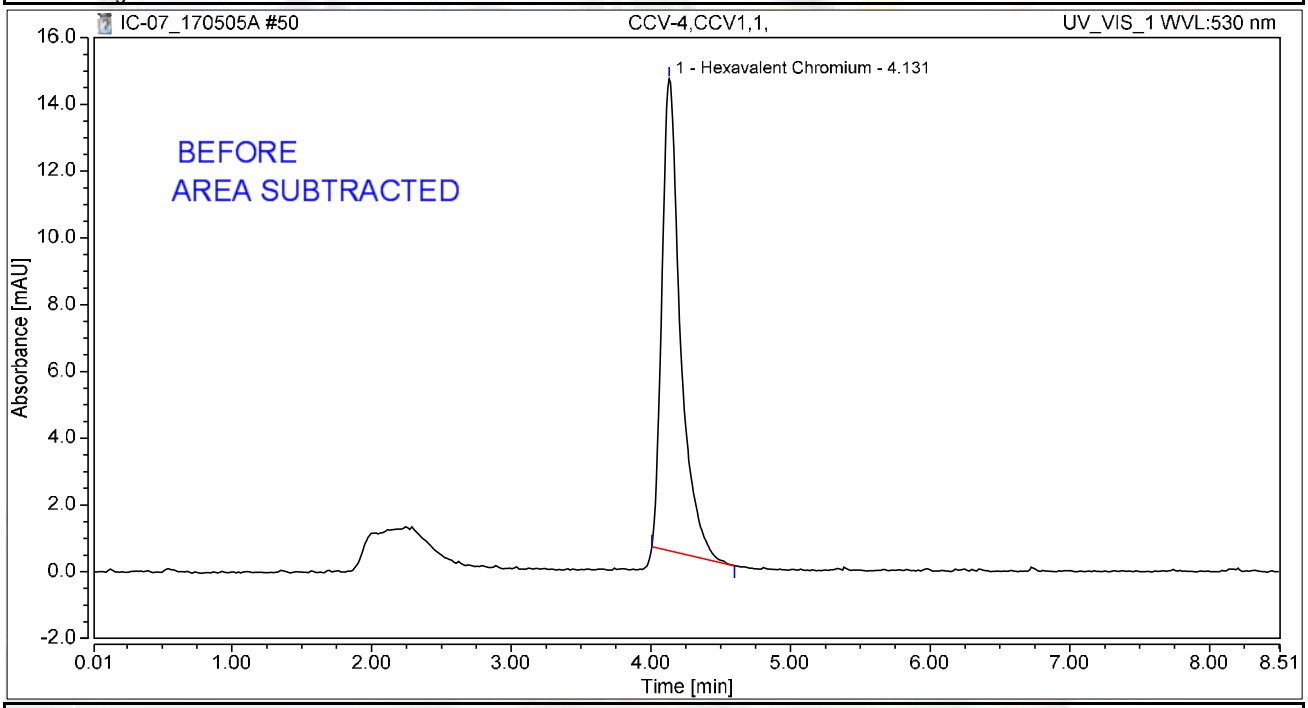
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.169	14.133	100.00	100.00	8.8955
Total:			**2.169**	**14.133**	**100.00**	**100.00**	

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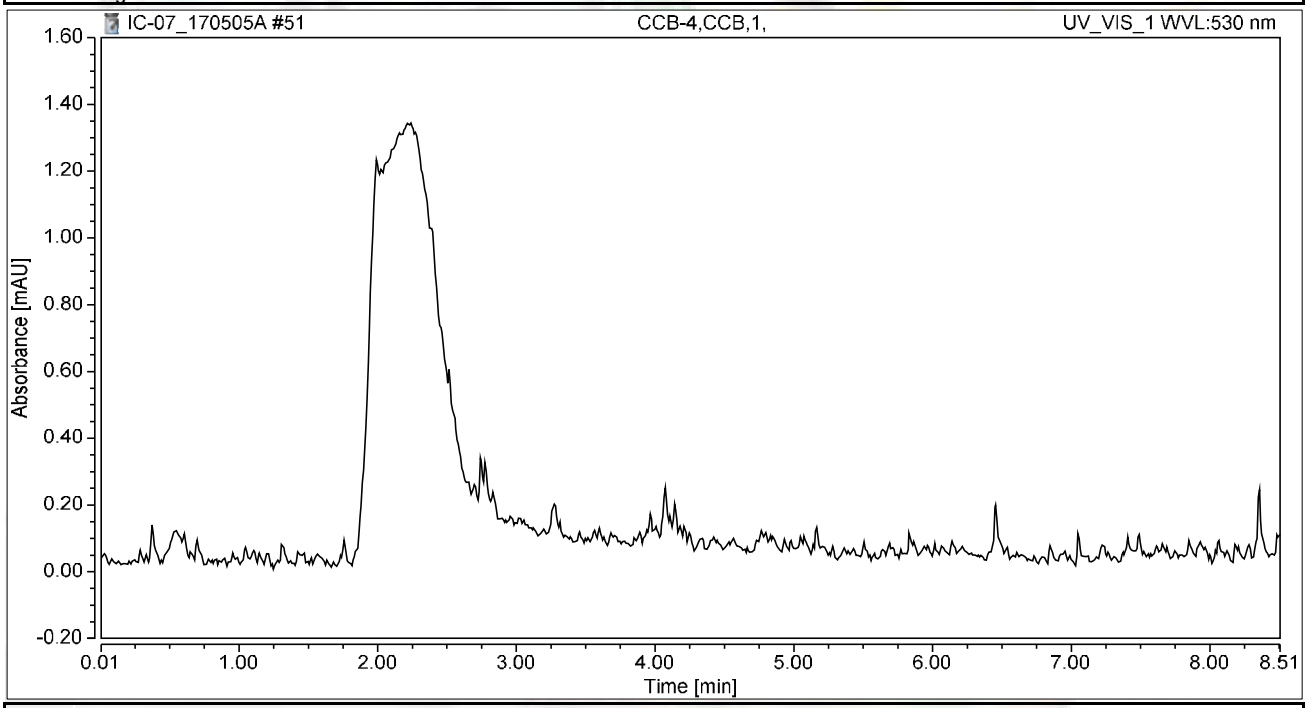
Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

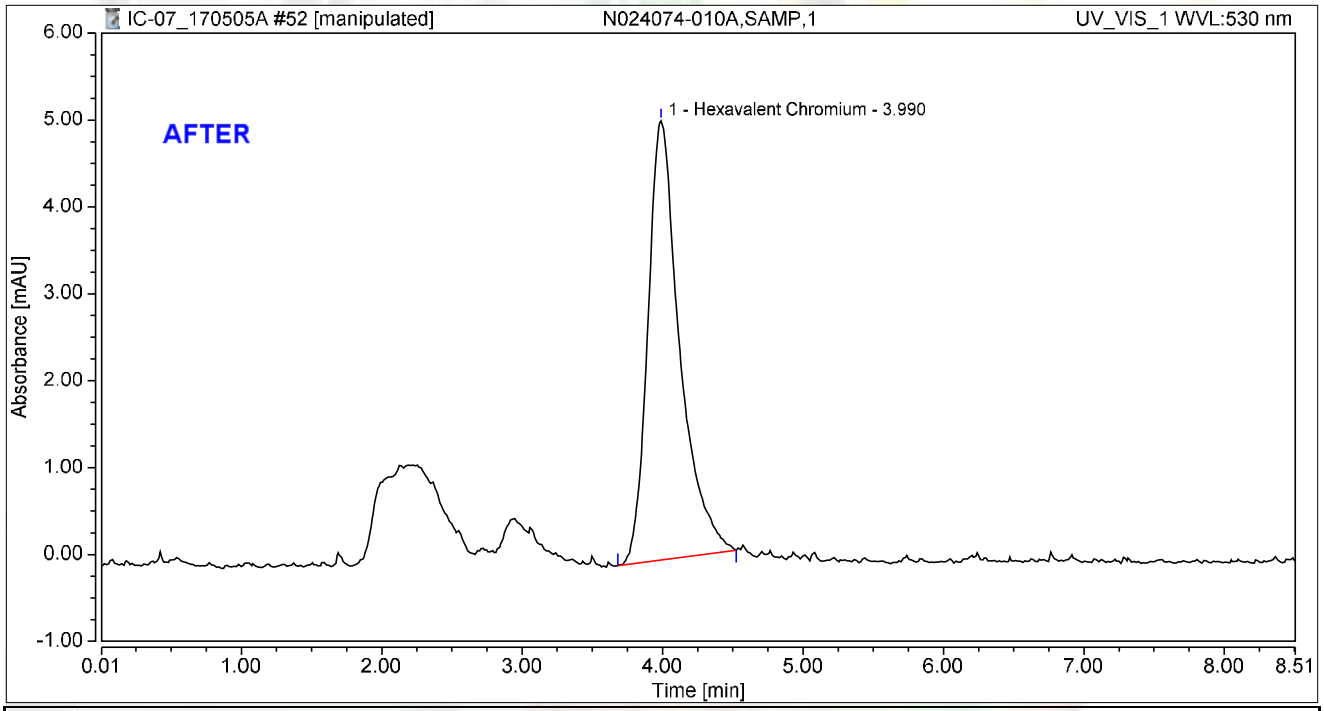
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	1.327	5.055	100.00	100.00	5.4416
Total:			**1.327**	**5.055**	**100.00**	**100.00**	

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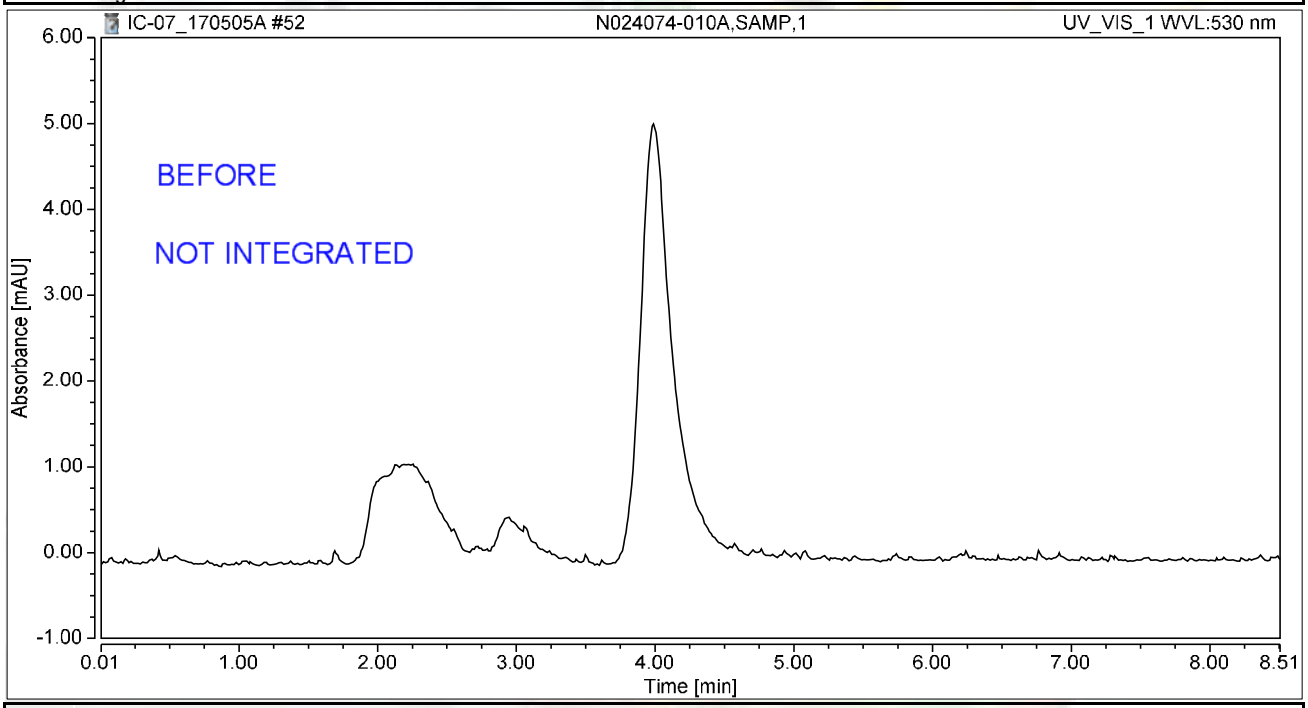
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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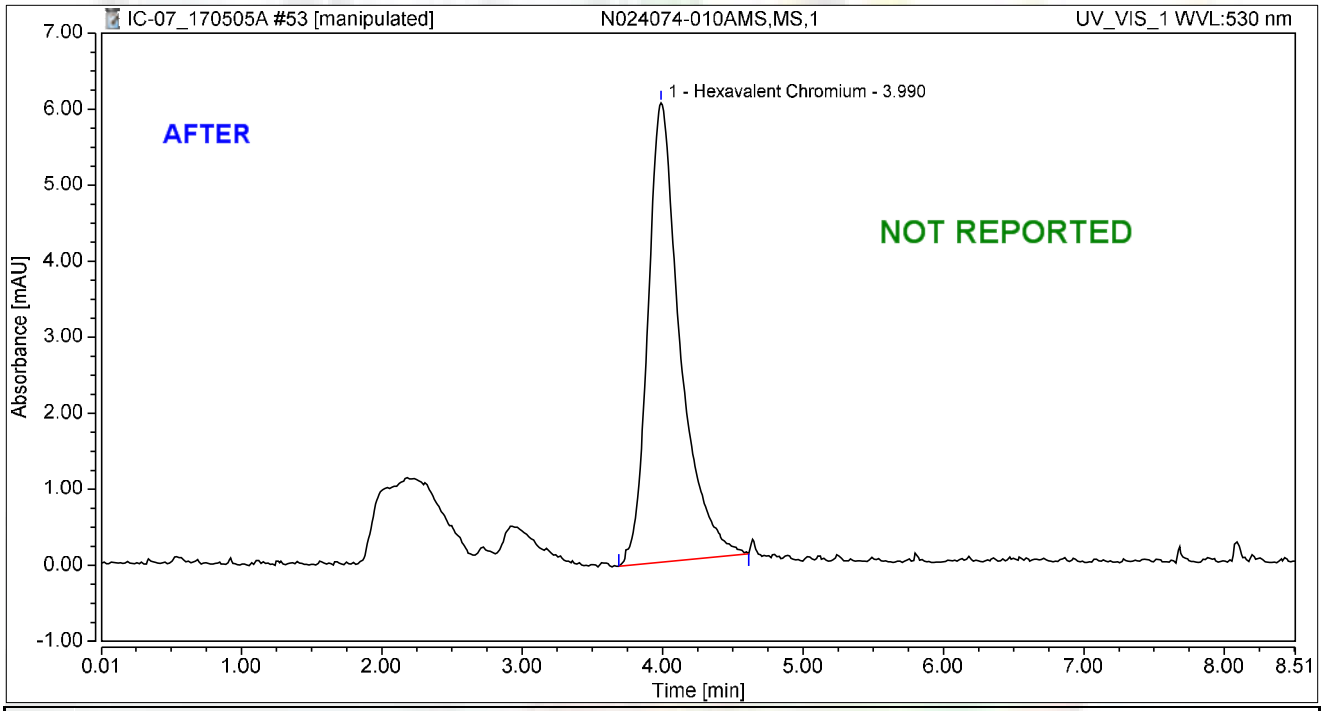
Chromatogram and Results

Injection Details

Injection Name:	**N024074-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	1.609	6.040	100.00	100.00	6.5983
Total:			**1.609**	**6.040**	**100.00**	**100.00**	

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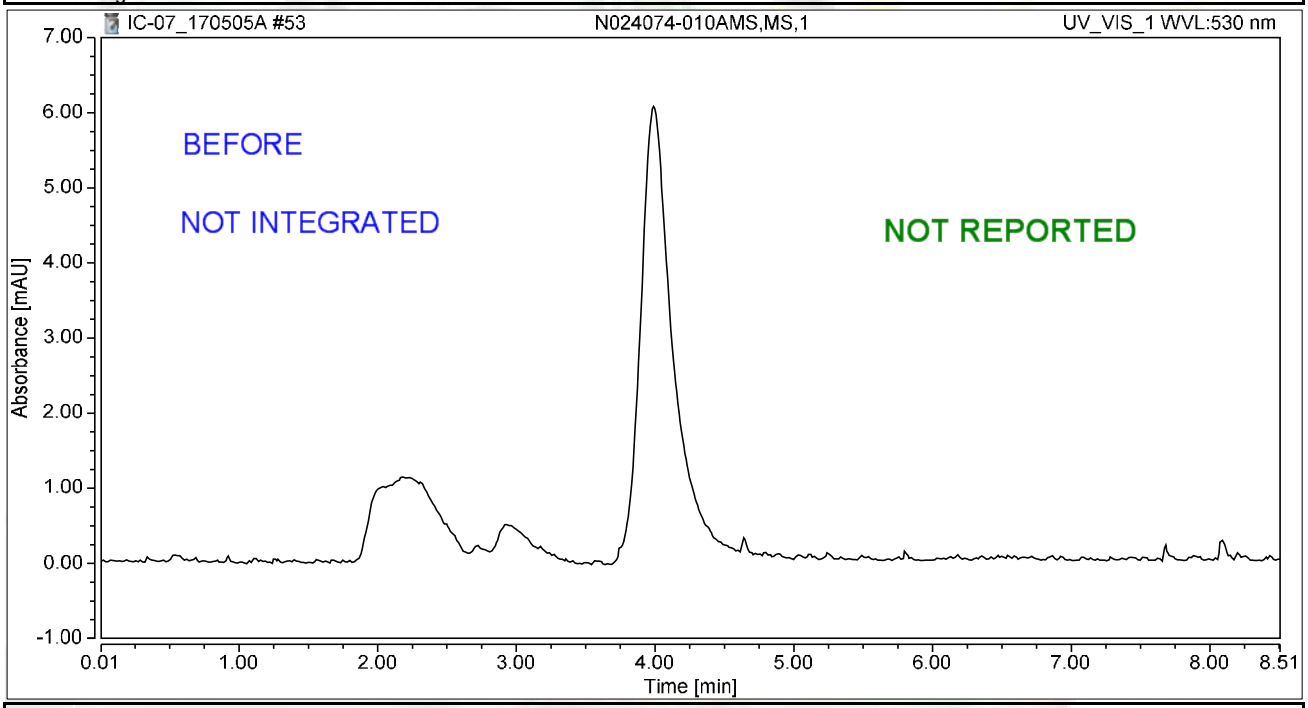
Chromatogram and Results

Injection Details

Injection Name:	**N024074-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 14:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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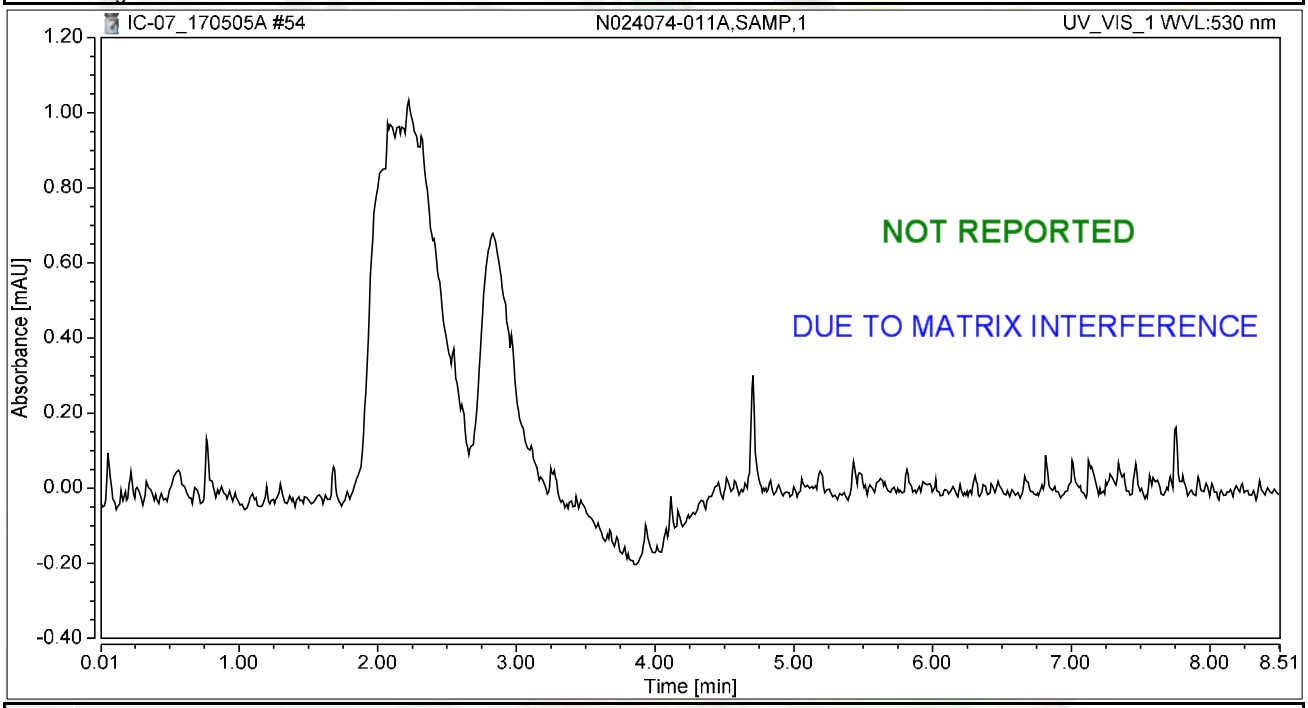
Chromatogram and Results

Injection Details

Injection Name:	**N024074-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 15:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

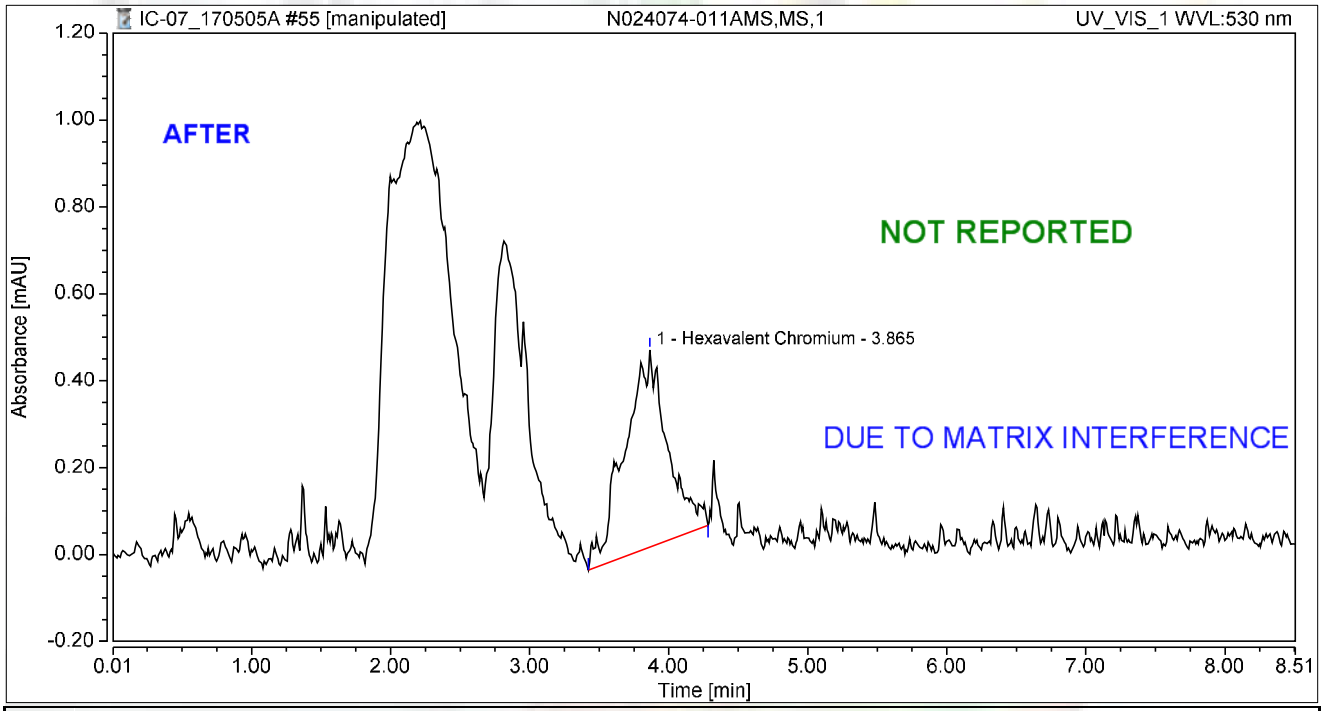
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 15:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.865	0.162	0.454	100.00	100.00	0.6626
Total:			**0.162**	**0.454**	**100.00**	**100.00**	

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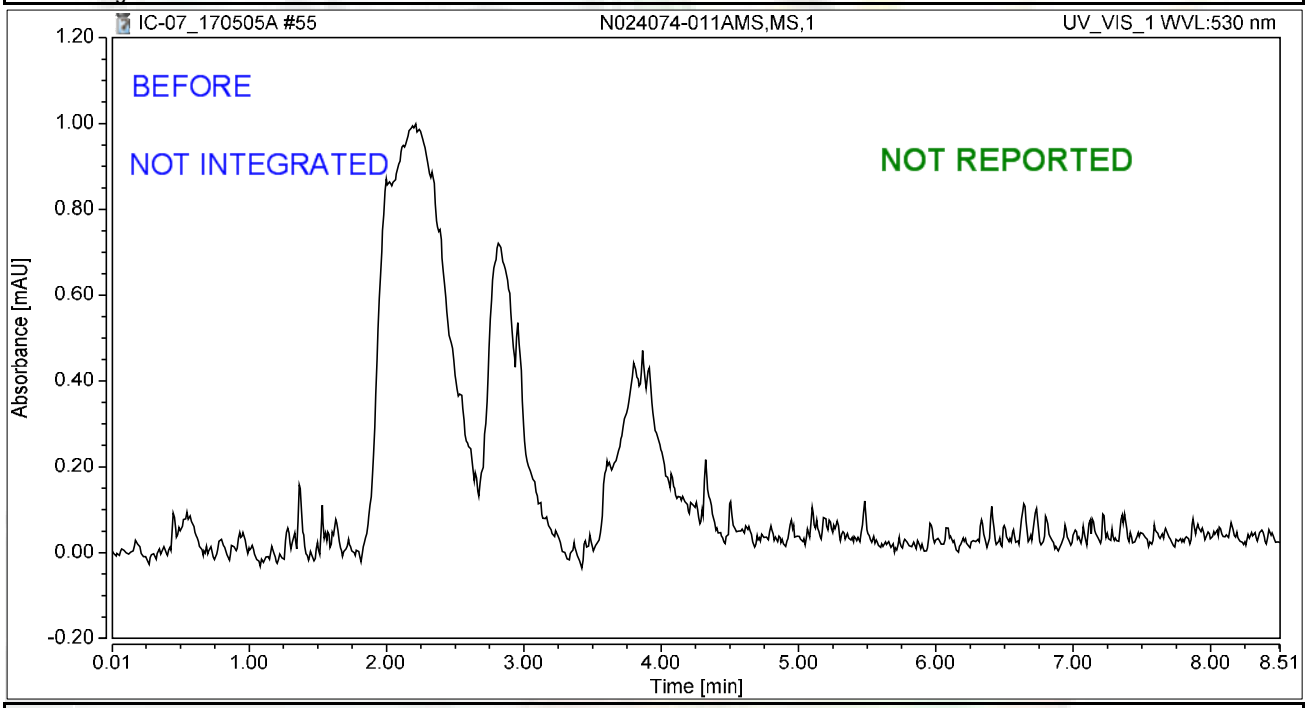
Chromatogram and Results

Injection Details

Injection Name:	**N024074-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 15:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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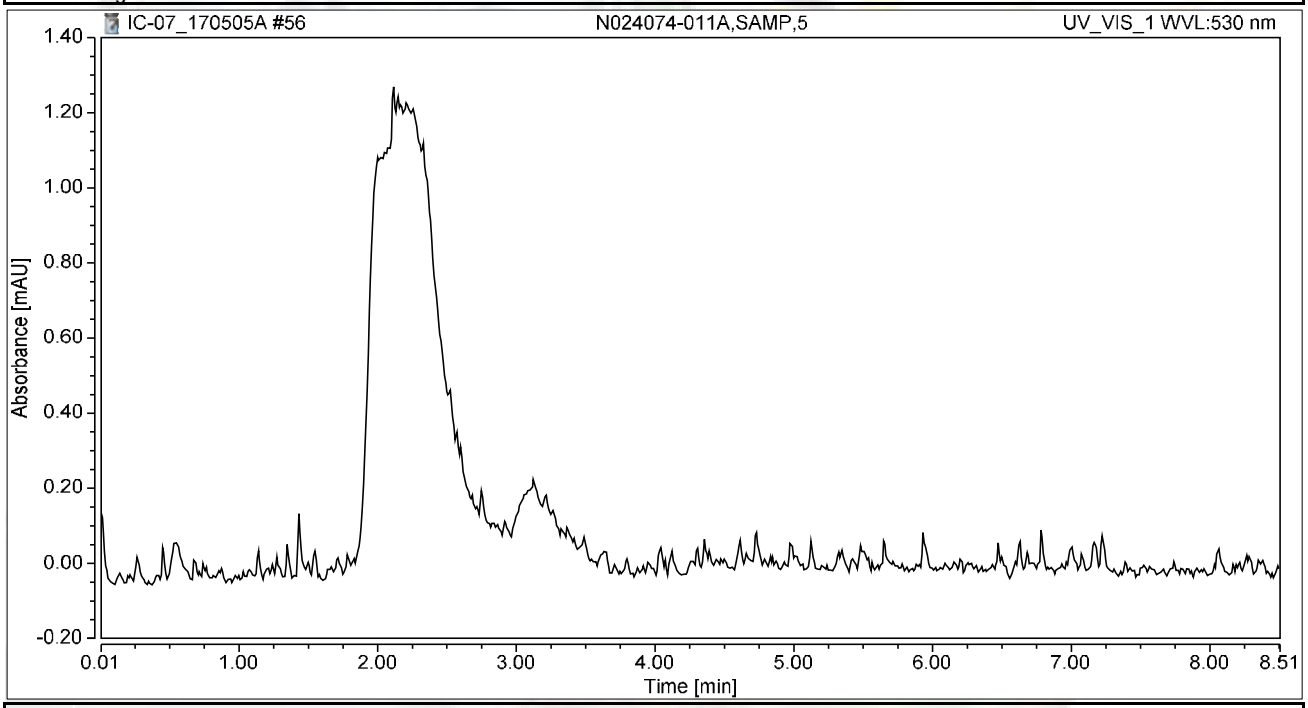
Chromatogram and Results

Injection Details

Injection Name:	**N024074-011A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 15:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

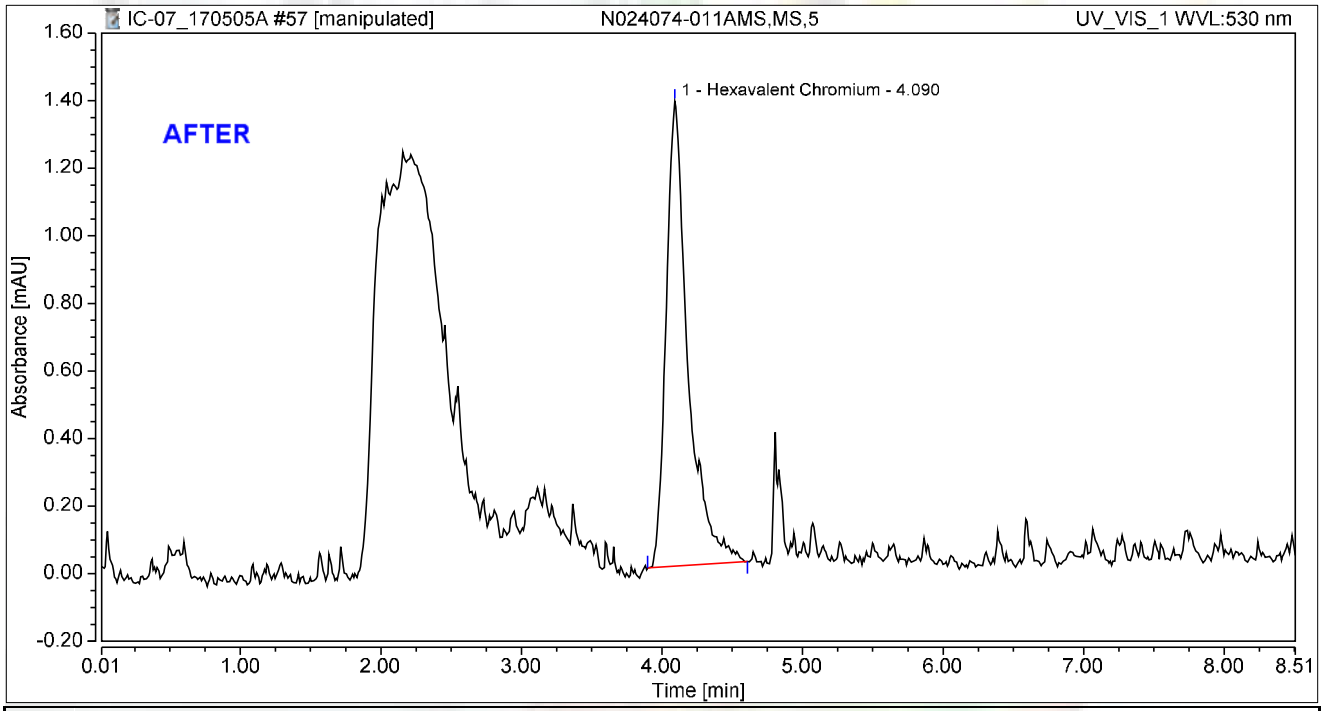
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-011AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.247	1.376	100.00	100.00	1.0147
Total:			**0.247**	**1.376**	**100.00**	**100.00**	

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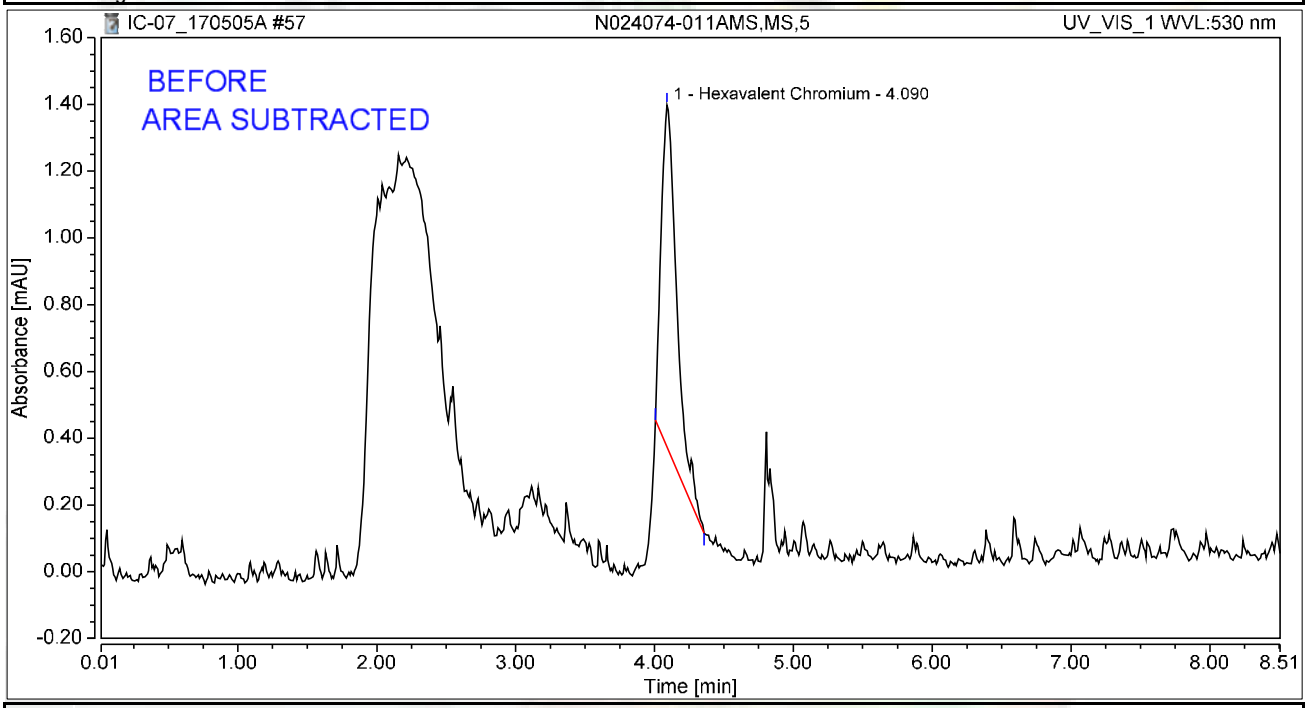
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-011AMS,MS,5**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 15:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.090	0.134	1.025	100.00	100.00	0.5499
Total:			**0.134**	**1.025**	**100.00**	**100.00**	

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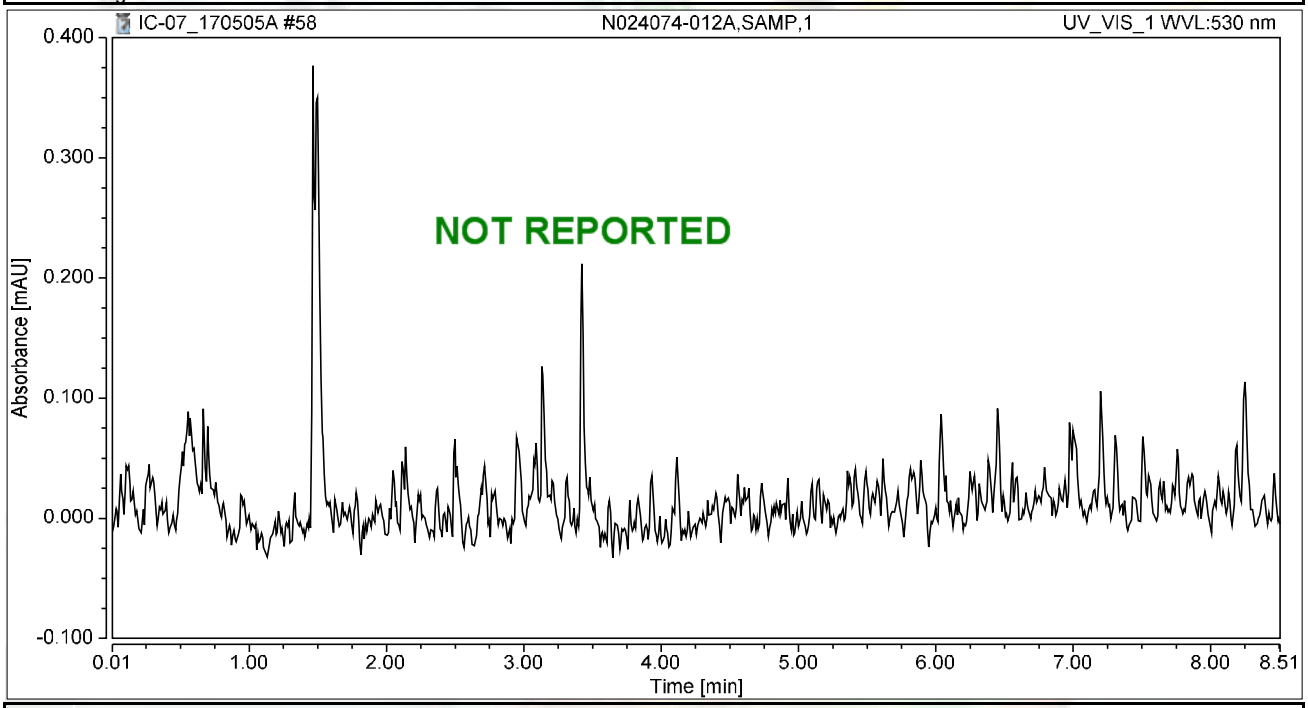
Chromatogram and Results

Injection Details

Injection Name:	**N024074-012A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 15:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

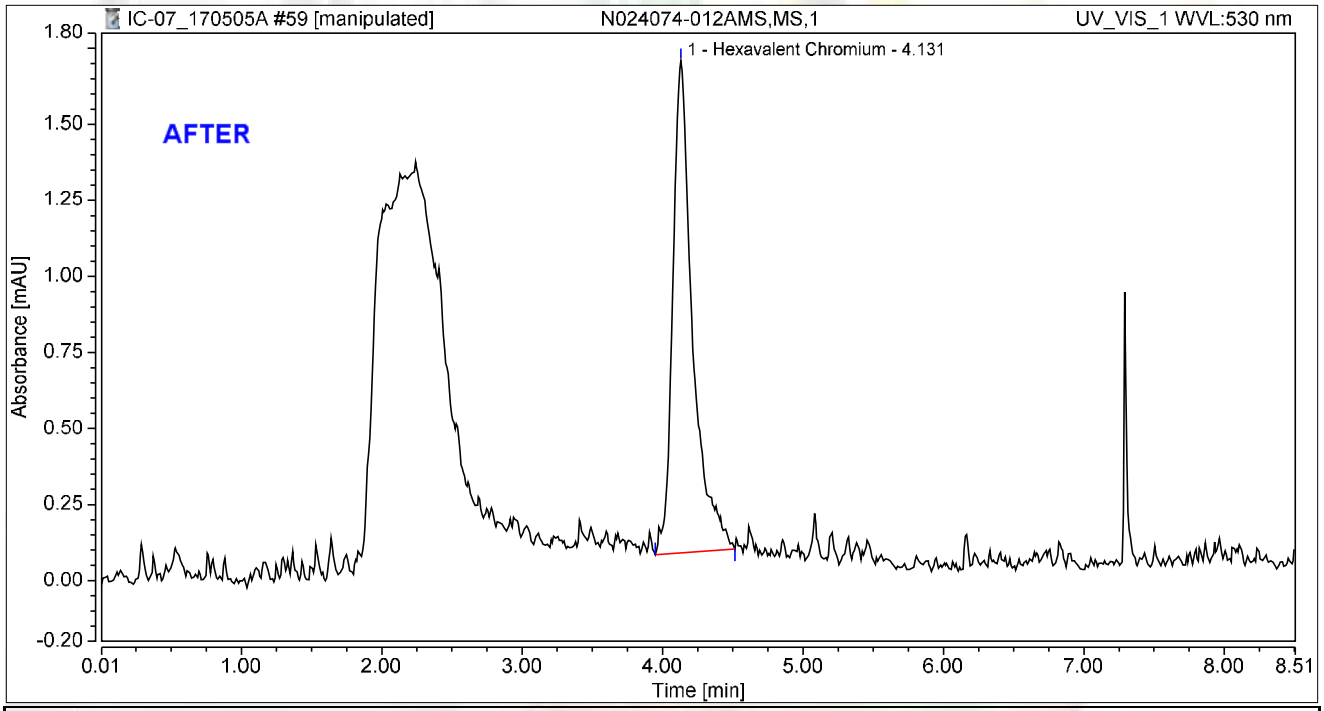
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.265	1.618	100.00	100.00	1.0849
Total:			**0.265**	**1.618**	**100.00**	**100.00**	

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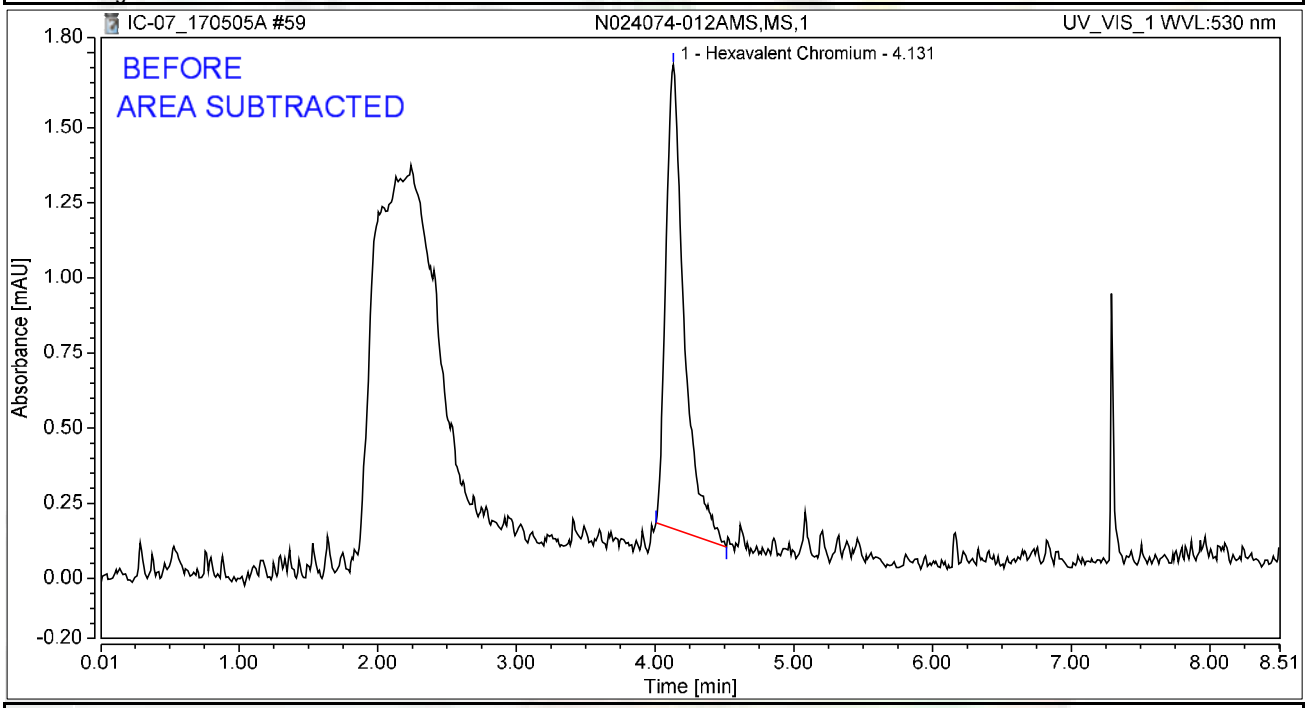
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.236	1.544	100.00	100.00	0.9685
Total:			**0.236**	**1.544**	**100.00**	**100.00**	

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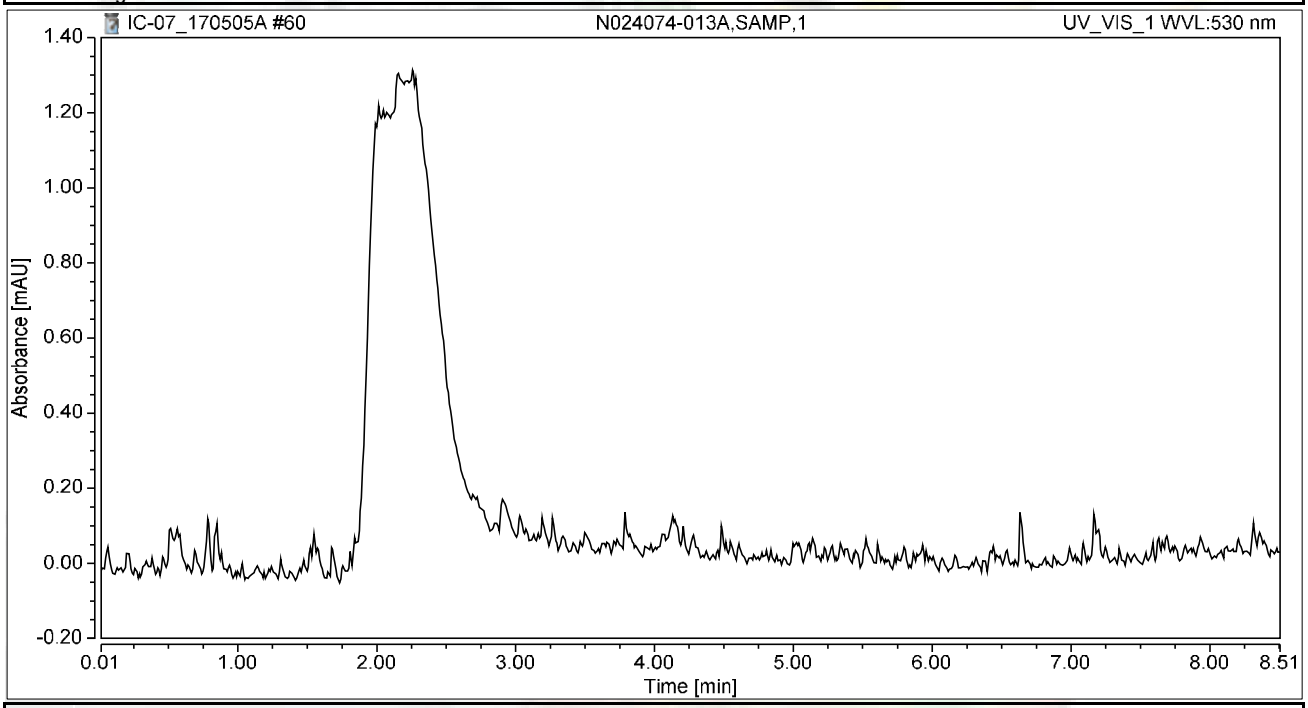
Chromatogram and Results

Injection Details

Injection Name:	**N024074-013A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

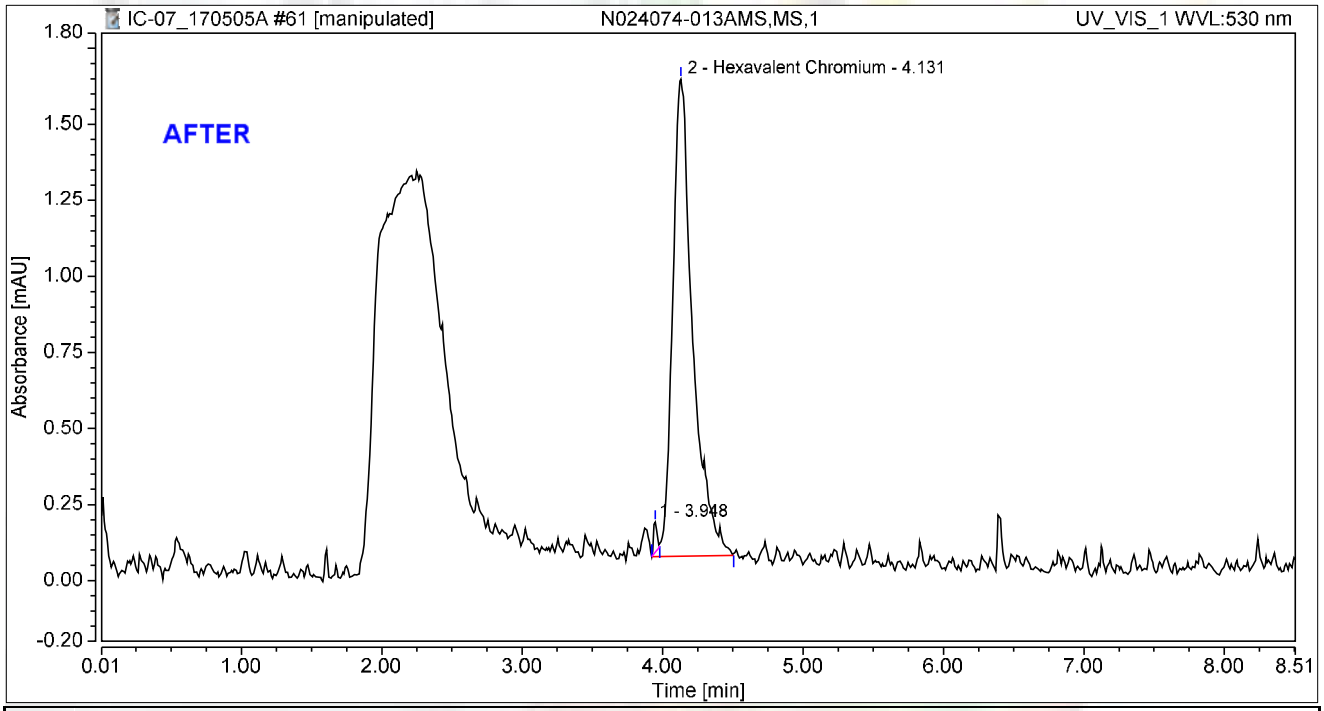
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.948	0.003	0.098	1.01	5.88	n.a.
2	Hexavalent Chromium	4.131	0.260	1.568	98.99	94.12	1.0659
Total:			**0.263**	**1.667**	**100.00**	**100.00**	

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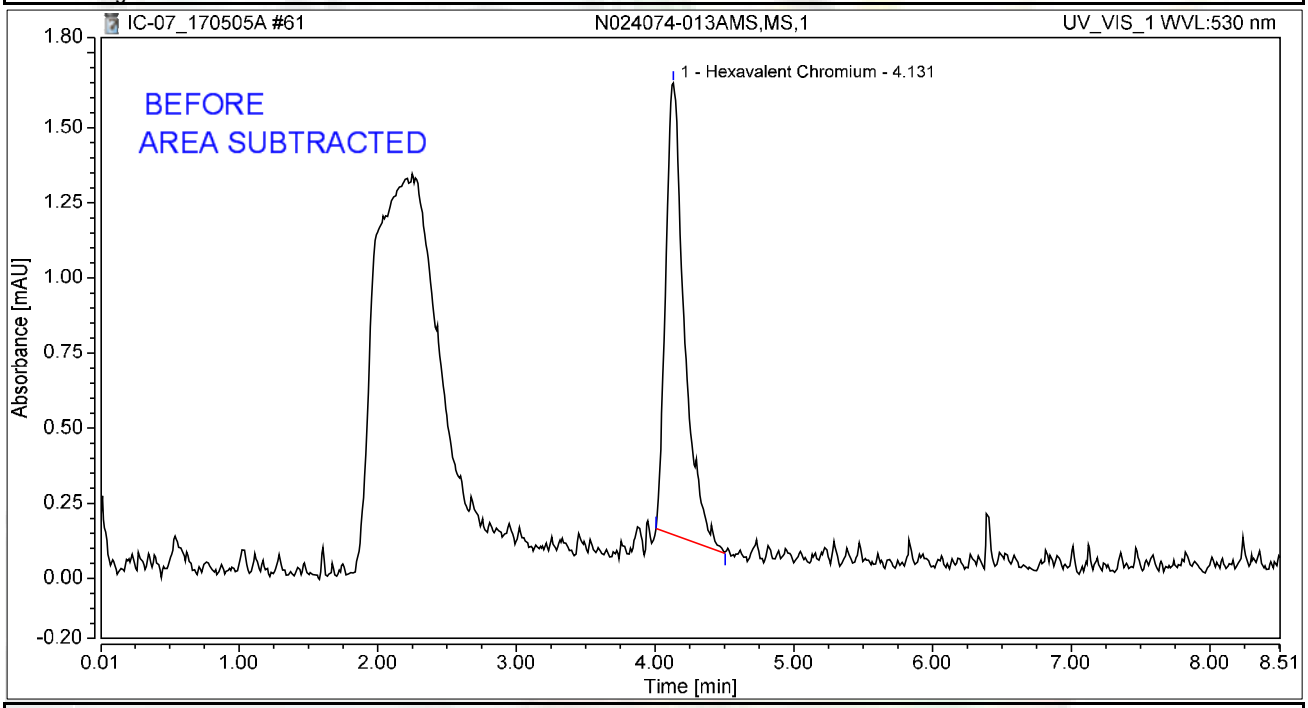
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.236	1.504	100.00	100.00	0.9671
Total:			**0.236**	**1.504**	**100.00**	**100.00**	

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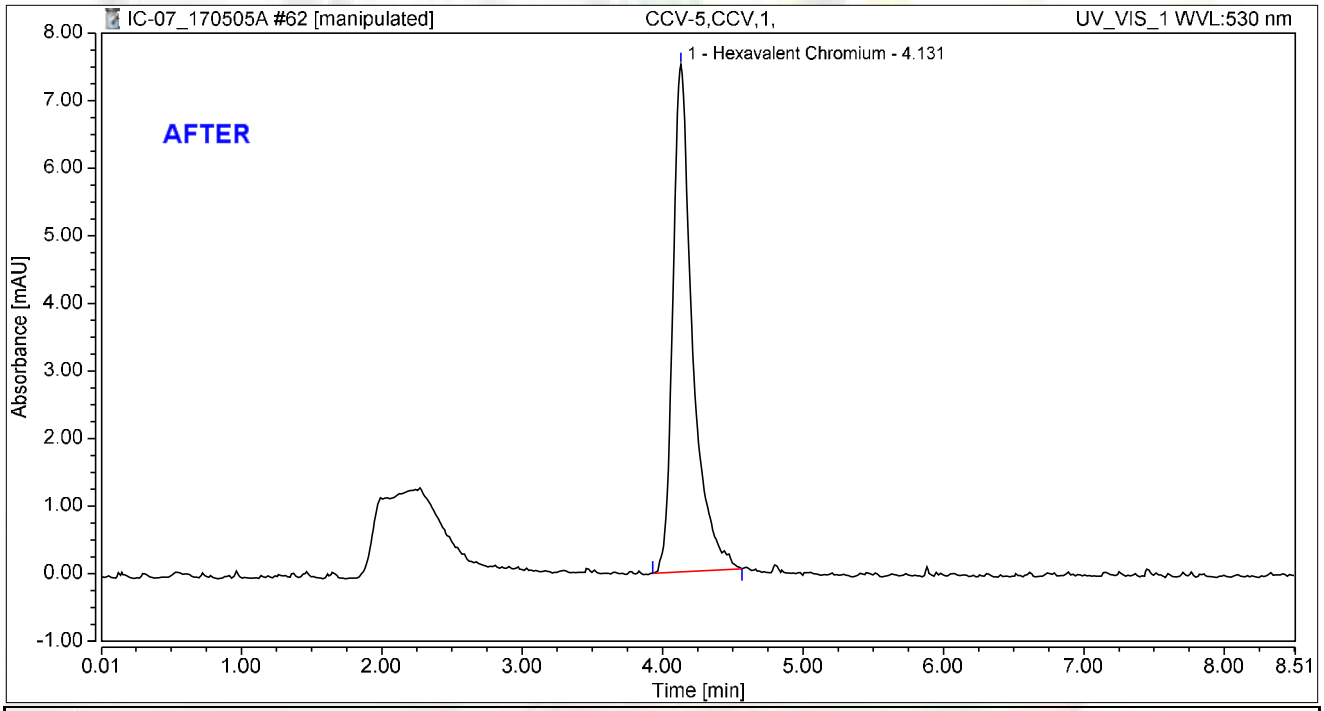
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.221	7.507	100.00	100.00	5.0046
Total:			**1.221**	**7.507**	**100.00**	**100.00**	

rba 5/9/2017

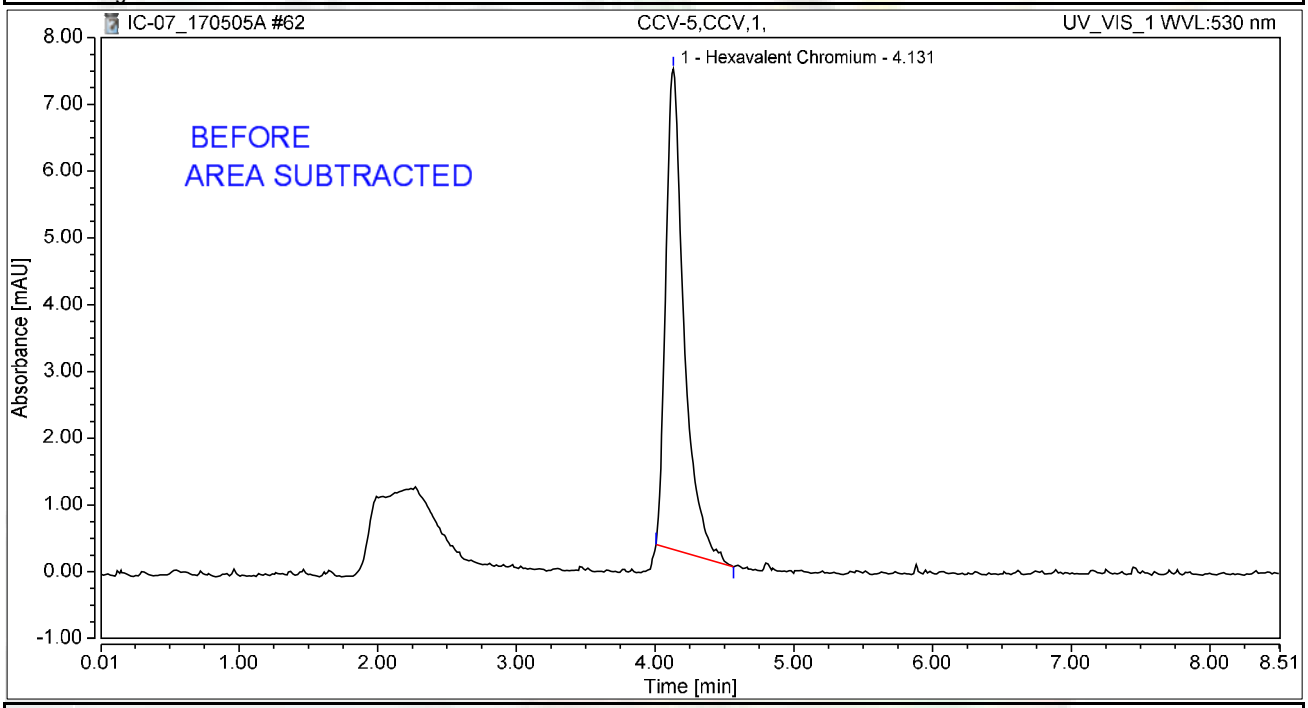
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:32**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.101	7.199	100.00	100.00	4.5133
Total:			**1.101**	**7.199**	**100.00**	**100.00**	

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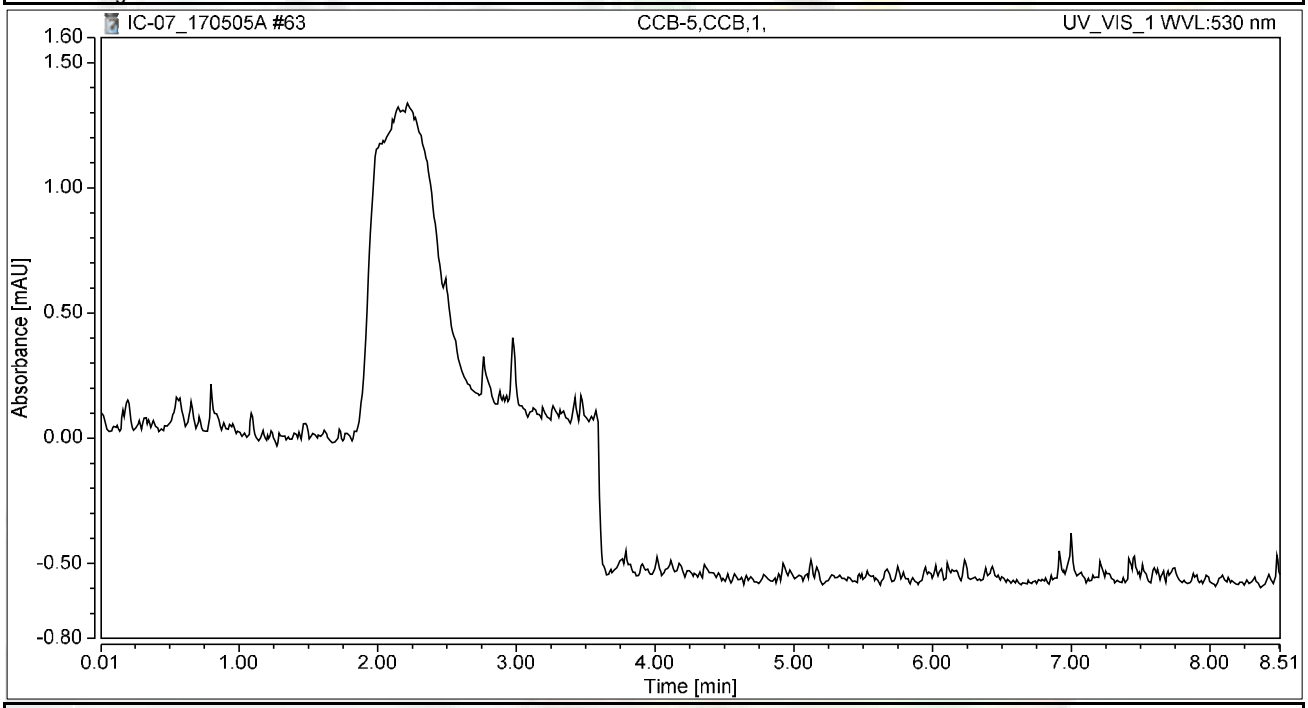
Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

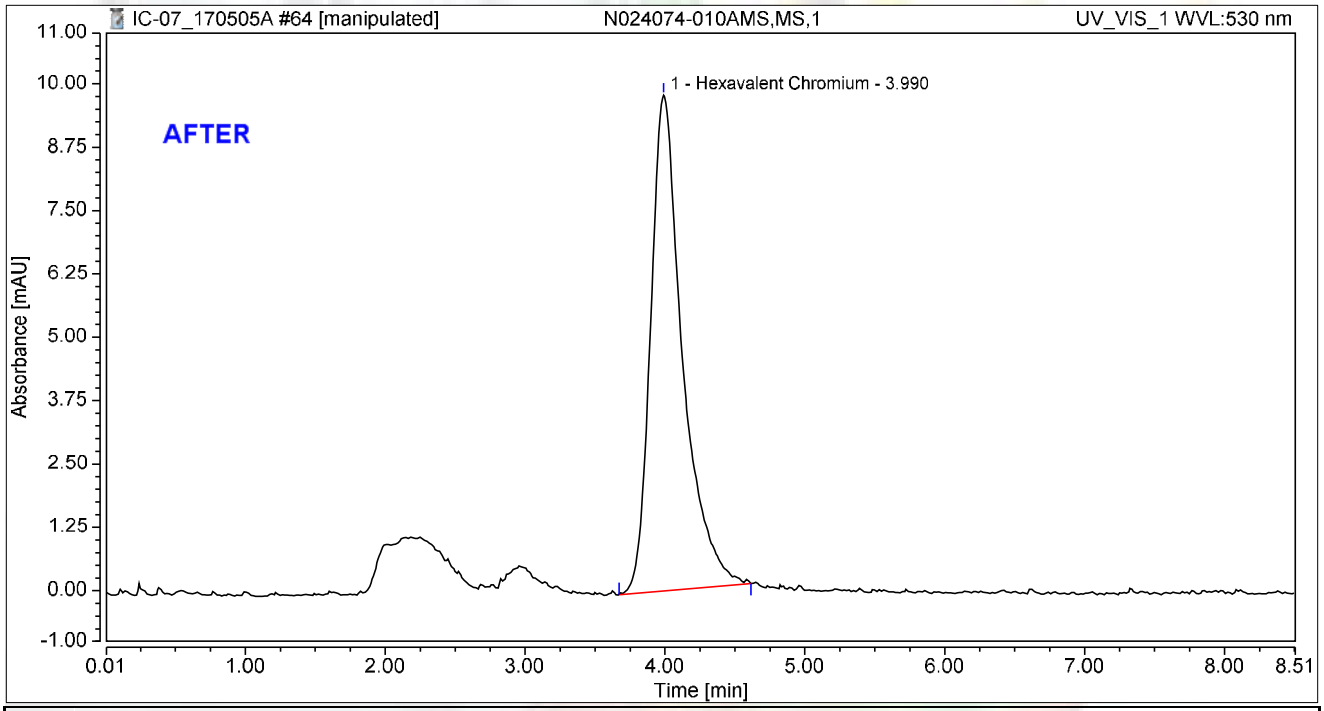
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.990	2.582	9.780	100.00	100.00	10.5883
Total:			**2.582**	**9.780**	**100.00**	**100.00**	

rba 5/9/2017

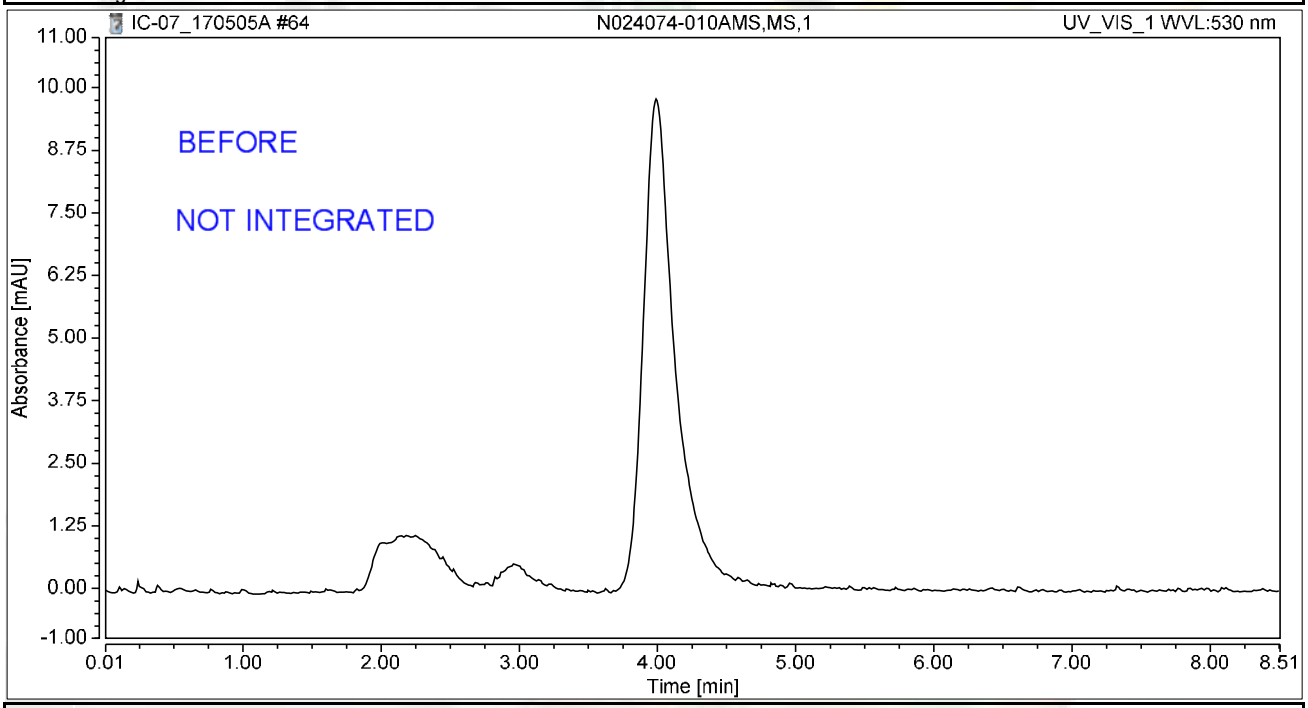
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024074-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 16:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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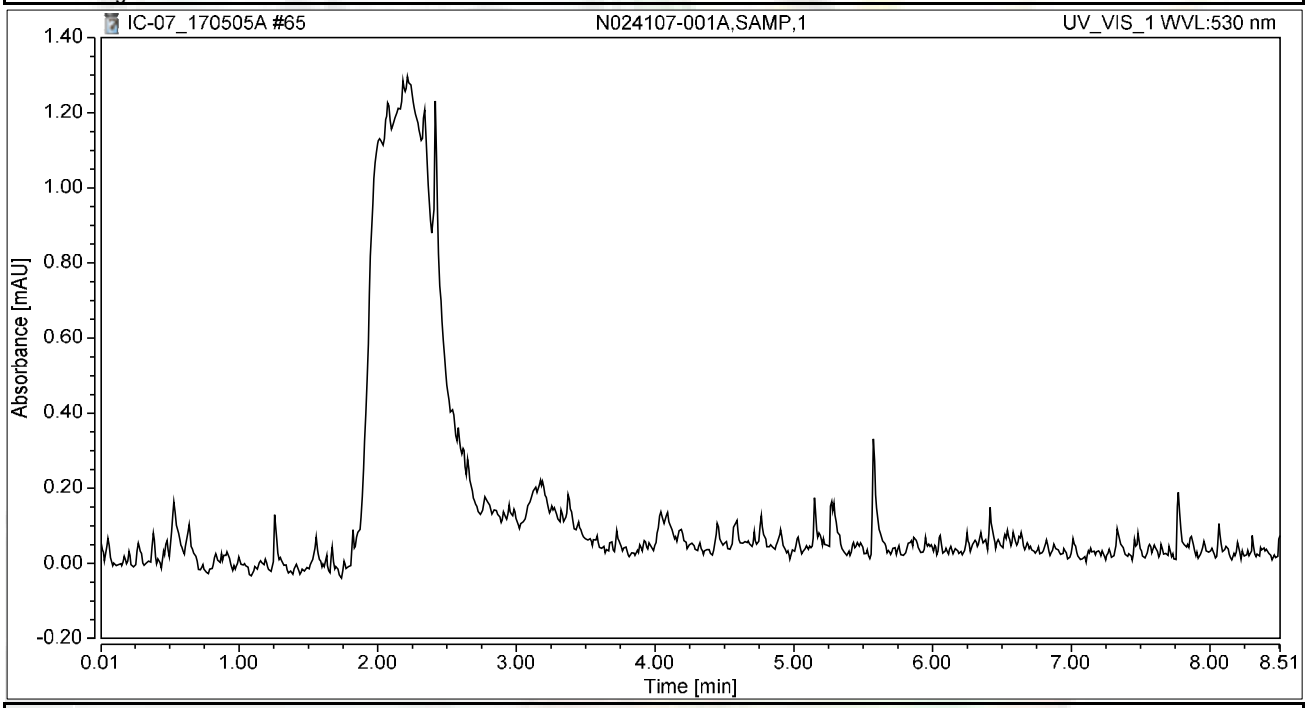
Chromatogram and Results

Injection Details

Injection Name:	**N024107-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

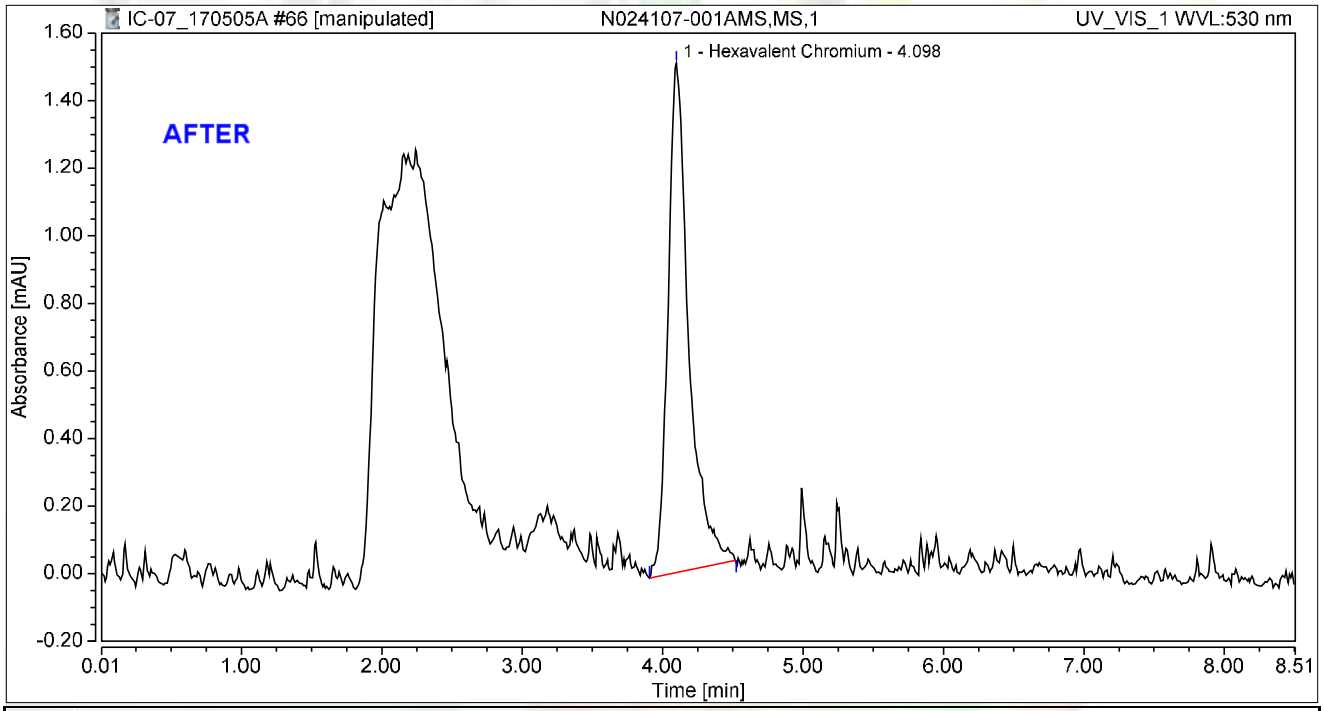
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024107-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.260	1.507	100.00	100.00	1.0645
Total:			**0.260**	**1.507**	**100.00**	**100.00**	

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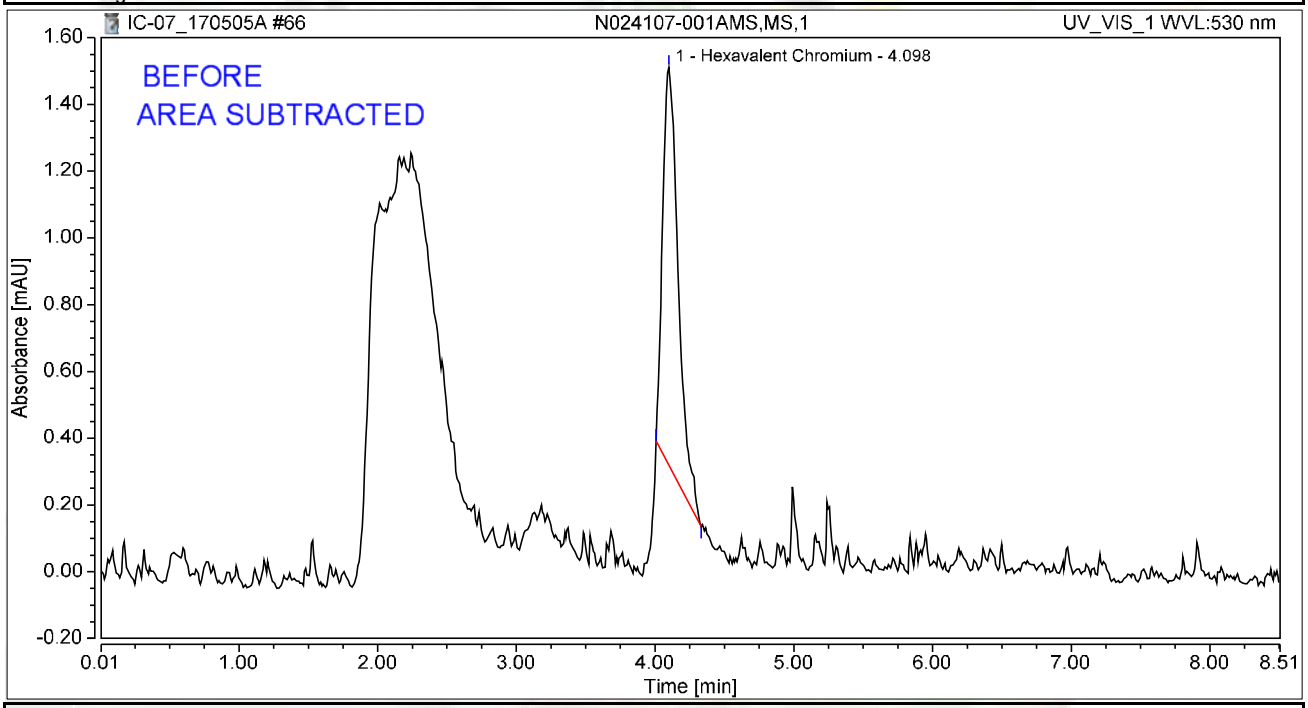
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024107-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.098	0.156	1.192	100.00	100.00	0.6411
Total:			**0.156**	**1.192**	**100.00**	**100.00**	

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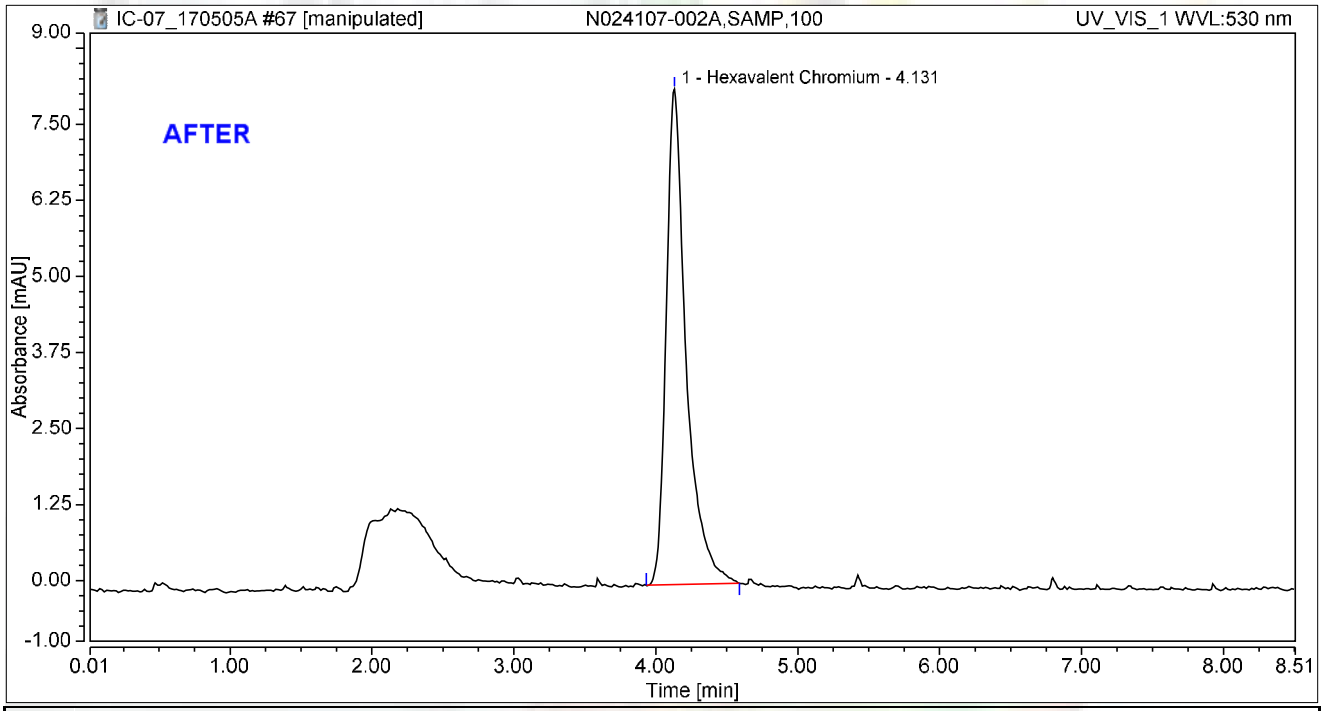
Chromatogram and Results

Injection Details

Injection Name:	**N024107-002A,SAMP,100**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.332	8.144	100.00	100.00	5.4633
Total:			**1.332**	**8.144**	**100.00**	**100.00**	

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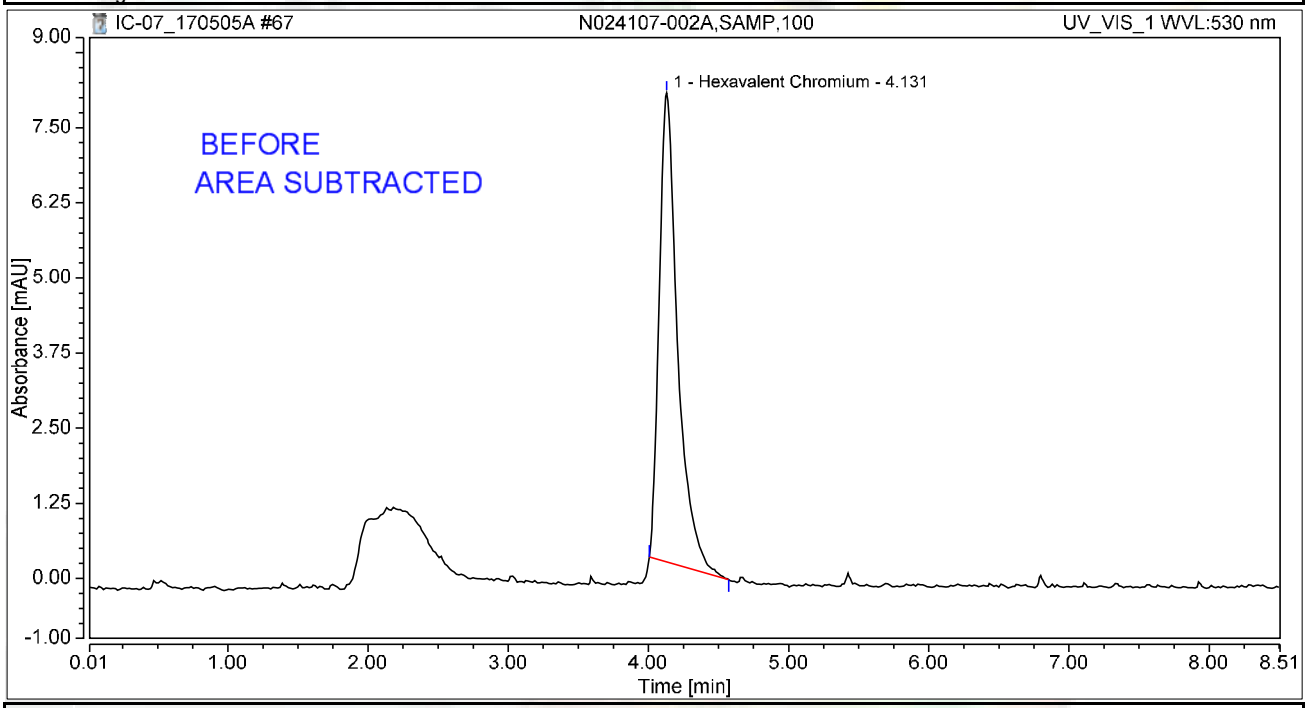
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024107-002A,SAMP,100**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.198	7.807	100.00	100.00	4.9126
Total:			**1.198**	**7.807**	**100.00**	**100.00**	

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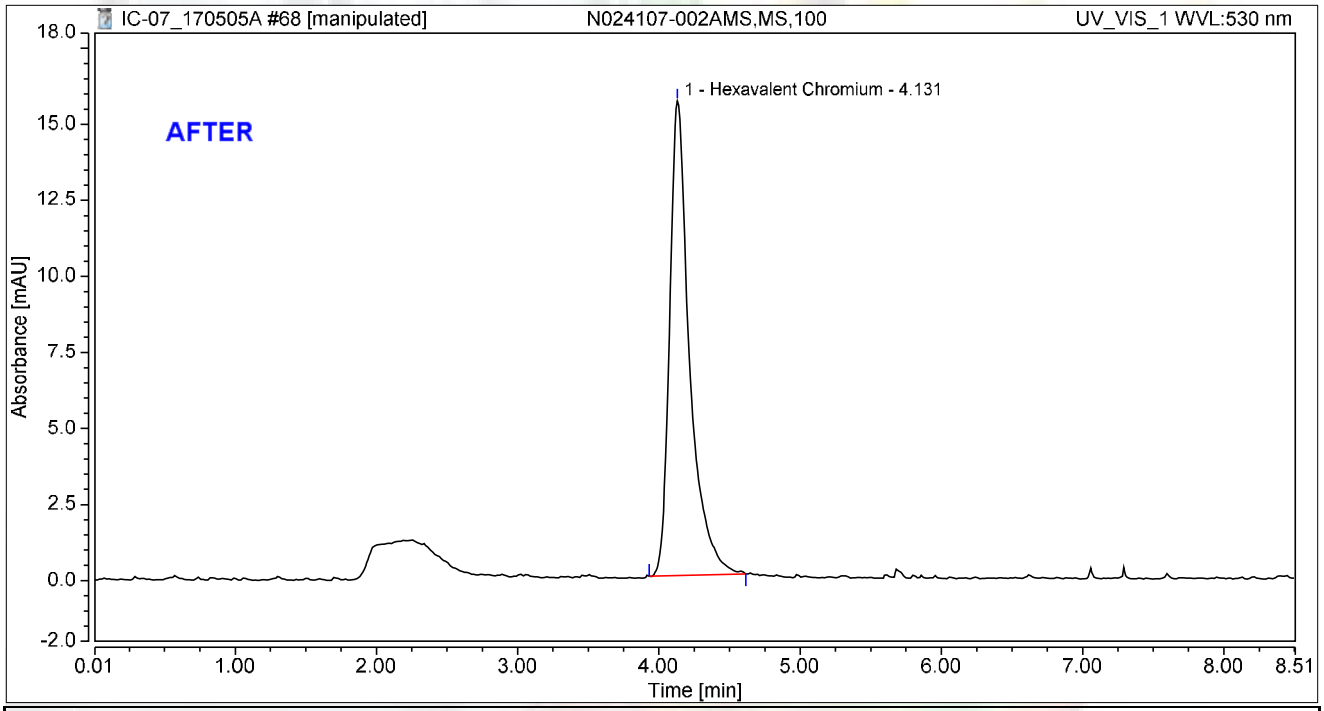
Chromatogram and Results

Injection Details

Injection Name:	**N024107-002AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.553	15.602	100.00	100.00	10.4690
Total:			**2.553**	**15.602**	**100.00**	**100.00**	

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Reviewed by: Nancy 5/15/2017

My first report/Integration

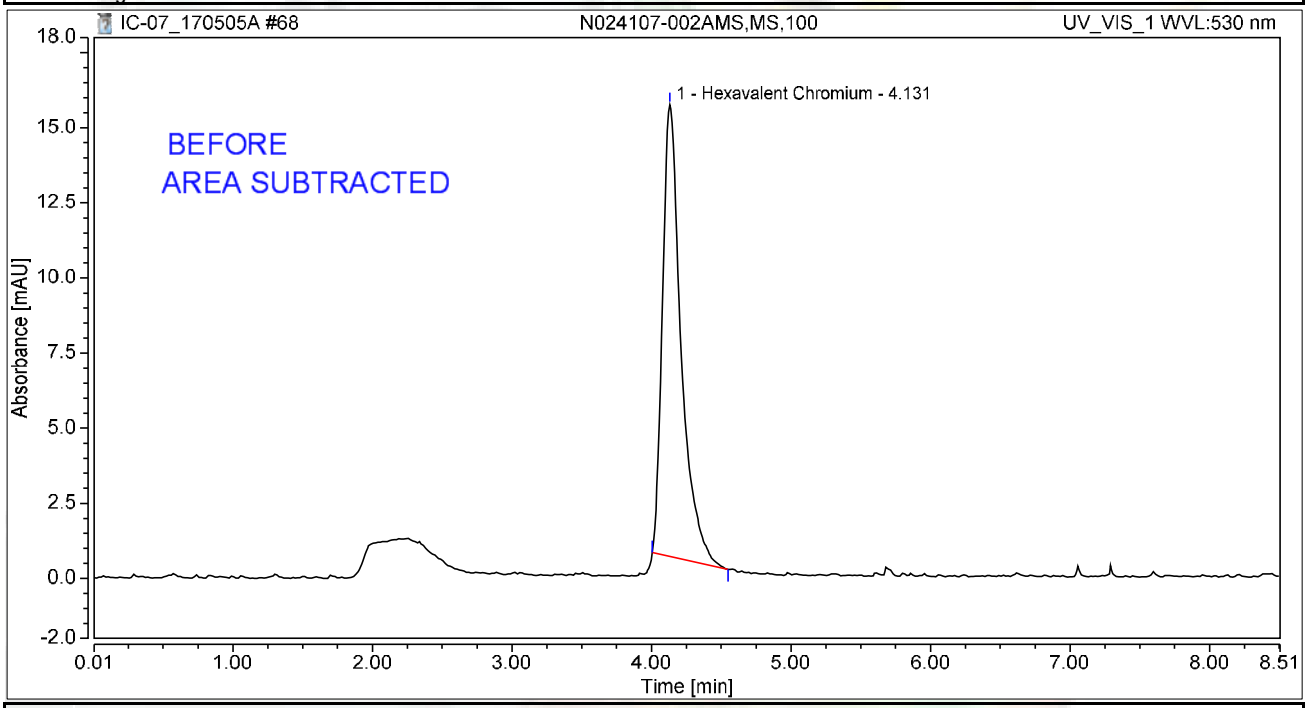
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024107-002AMS,MS,100**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.322	15.036	100.00	100.00	9.5188
Total:			**2.322**	**15.036**	**100.00**	**100.00**	

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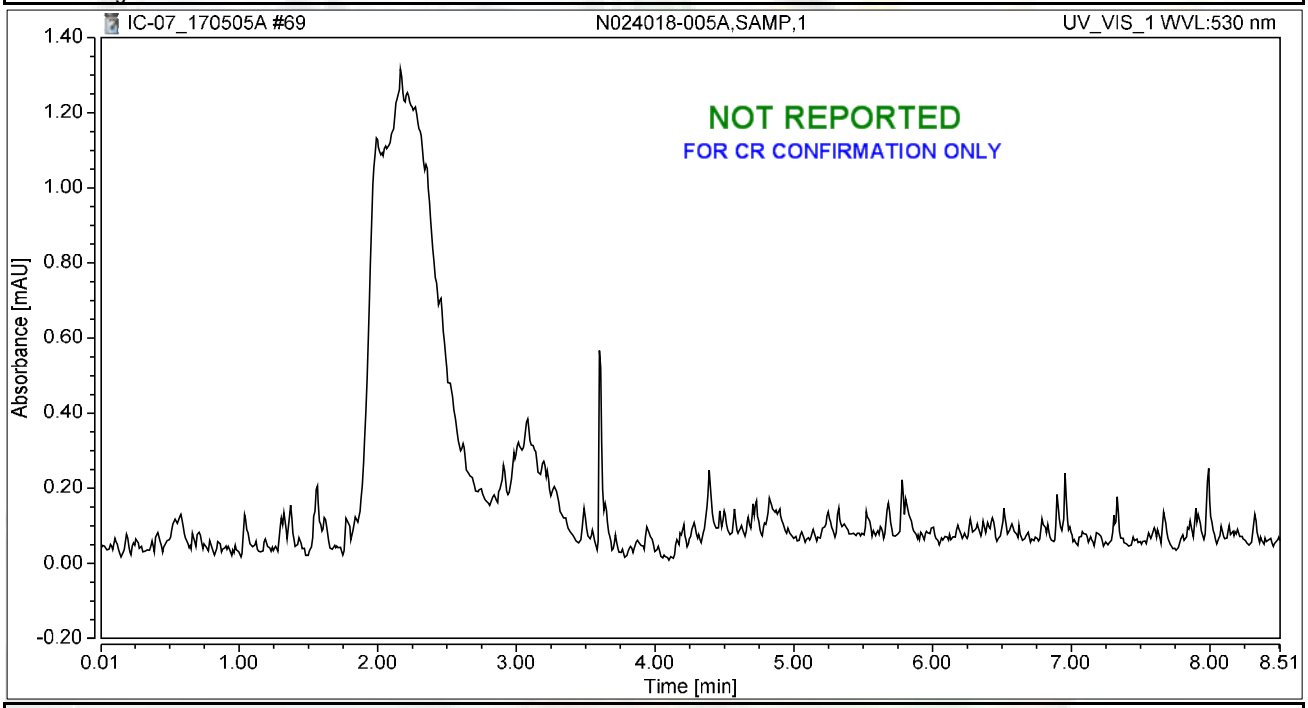
Chromatogram and Results

Injection Details

Injection Name:	**N024018-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

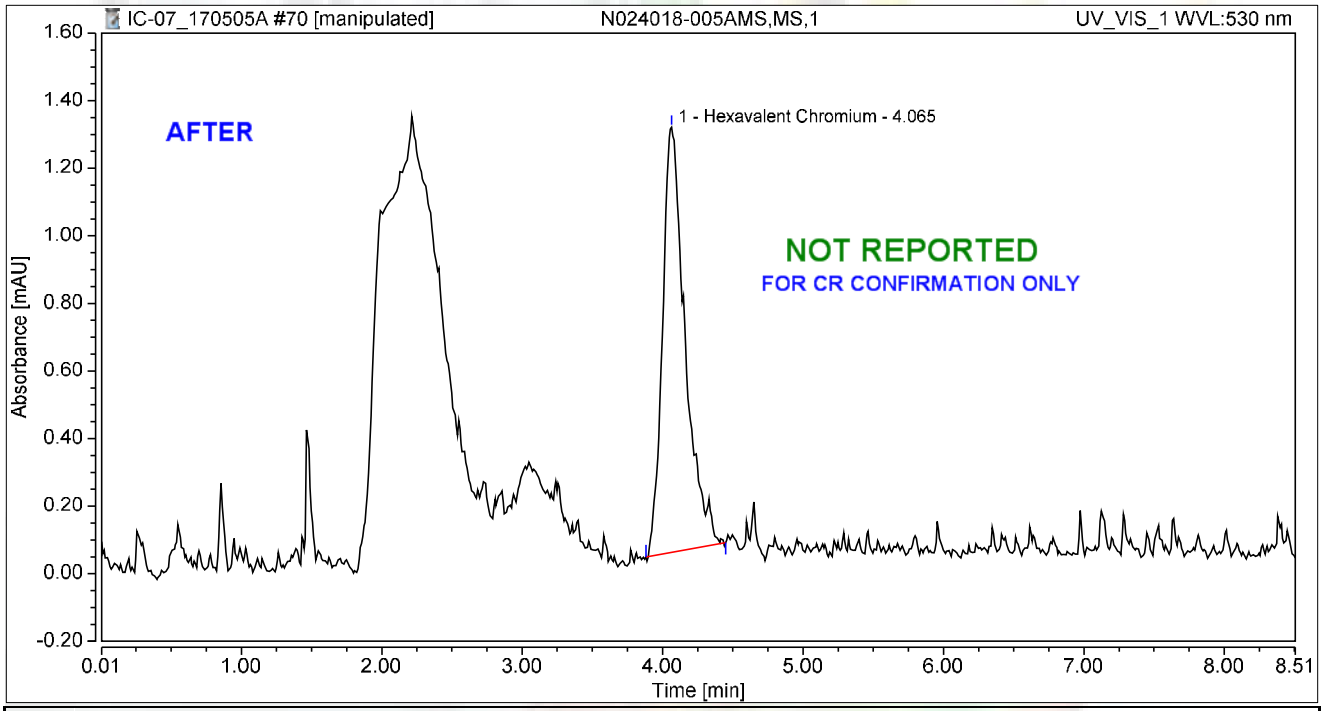
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024018-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.235	1.257	100.00	100.00	0.9630
Total:			**0.235**	**1.257**	**100.00**	**100.00**	

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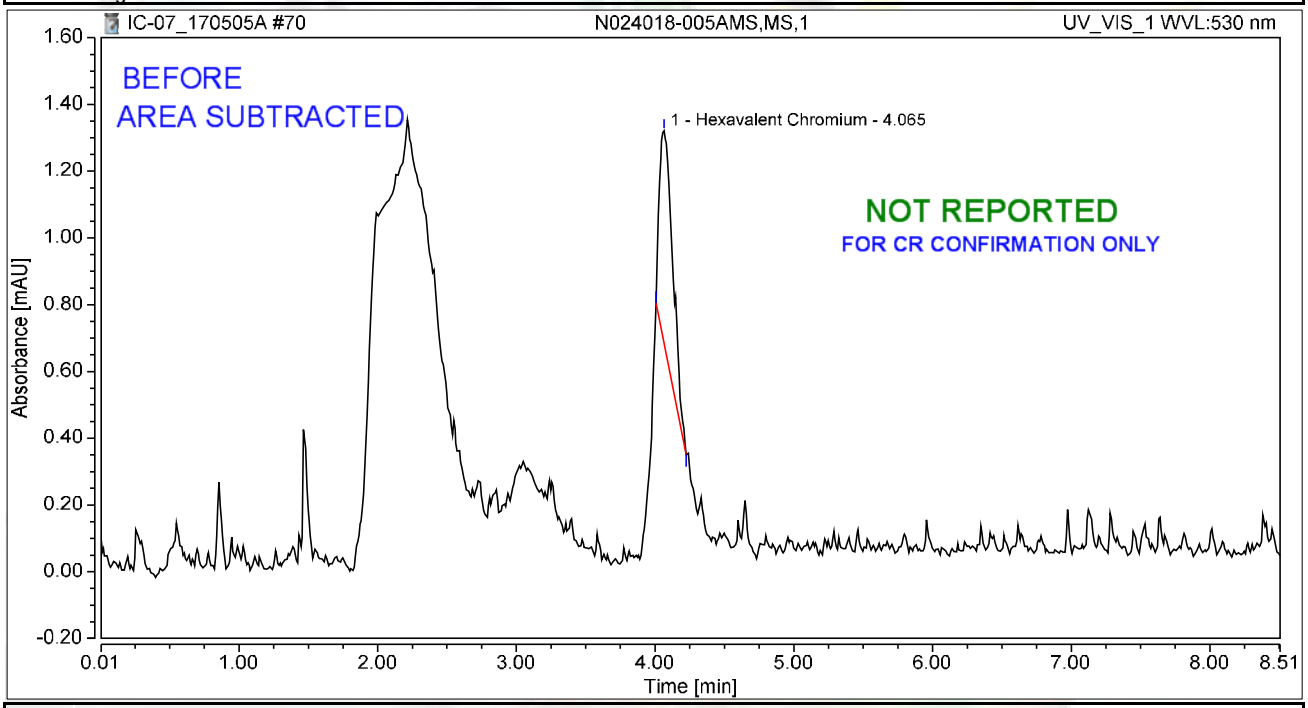
Chromatogram and Results

Injection Details

Injection Name:	**N024018-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.065	0.073	0.638	100.00	100.00	0.2983
Total:			**0.073**	**0.638**	**100.00**	**100.00**	

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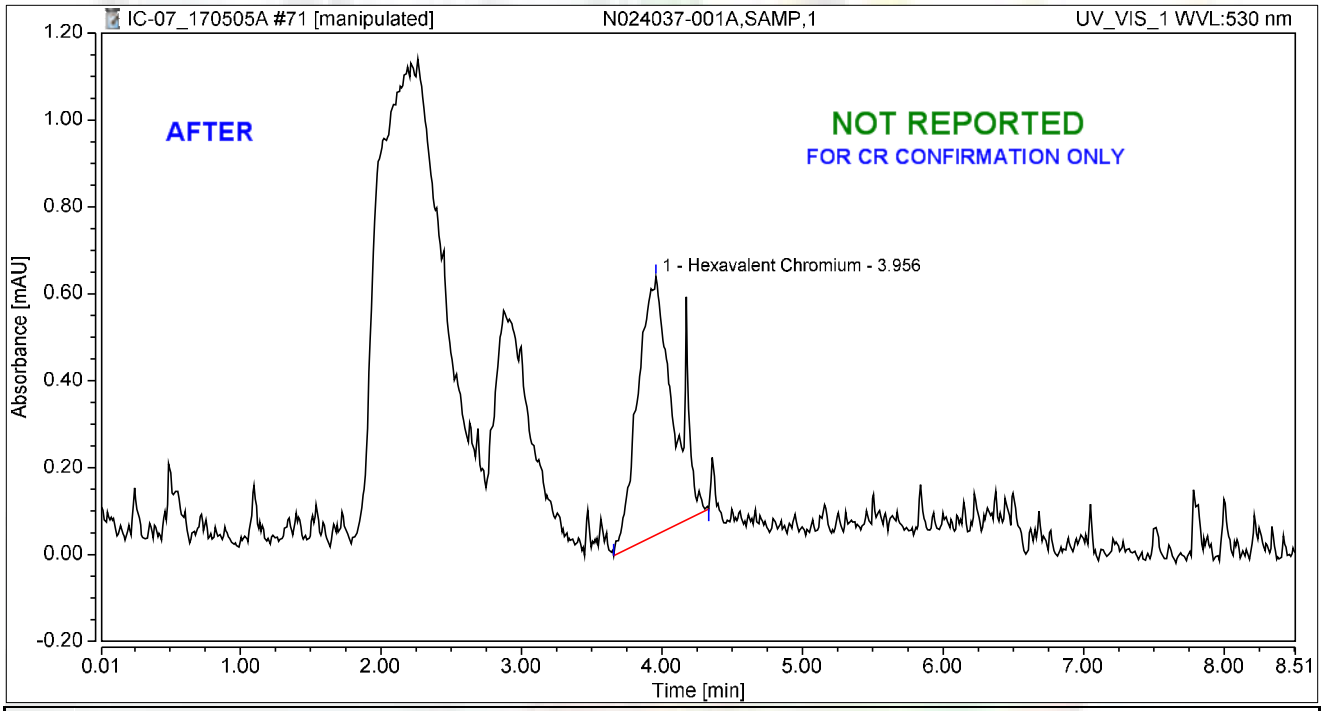
Chromatogram and Results

Injection Details

Injection Name:	**N024037-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.956	0.174	0.594	100.00	100.00	0.7128
Total:			**0.174**	**0.594**	**100.00**	**100.00**	

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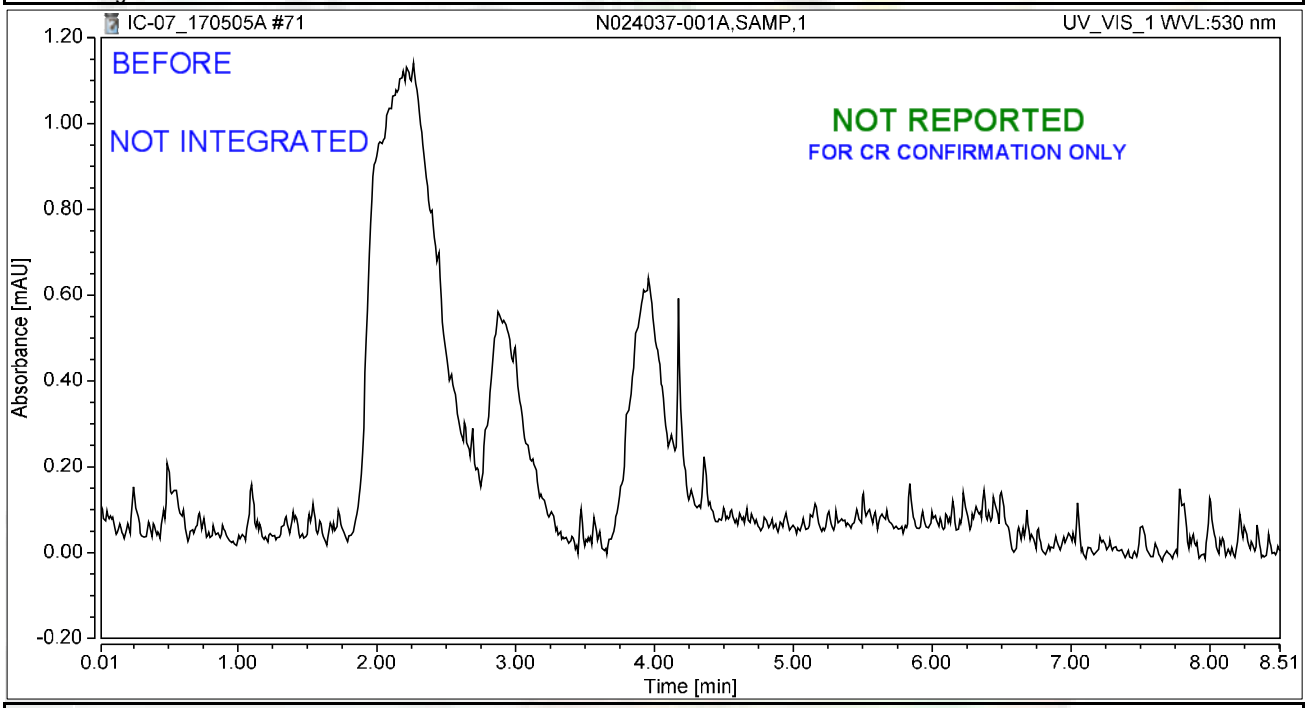
Chromatogram and Results

Injection Details

Injection Name:	**N024037-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 17:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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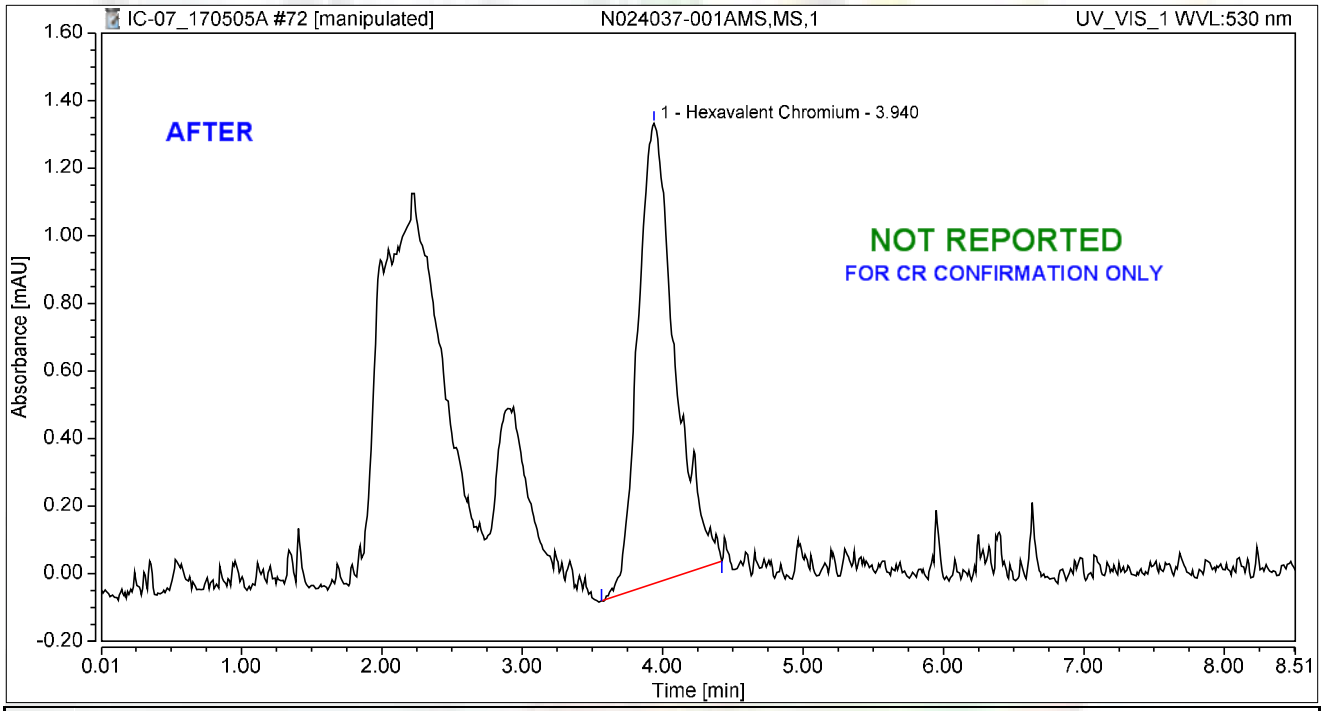
Chromatogram and Results

Injection Details

Injection Name:	**N024037-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	3.940	0.413	1.361	100.00	100.00	1.6950
Total:			**0.413**	**1.361**	**100.00**	**100.00**	

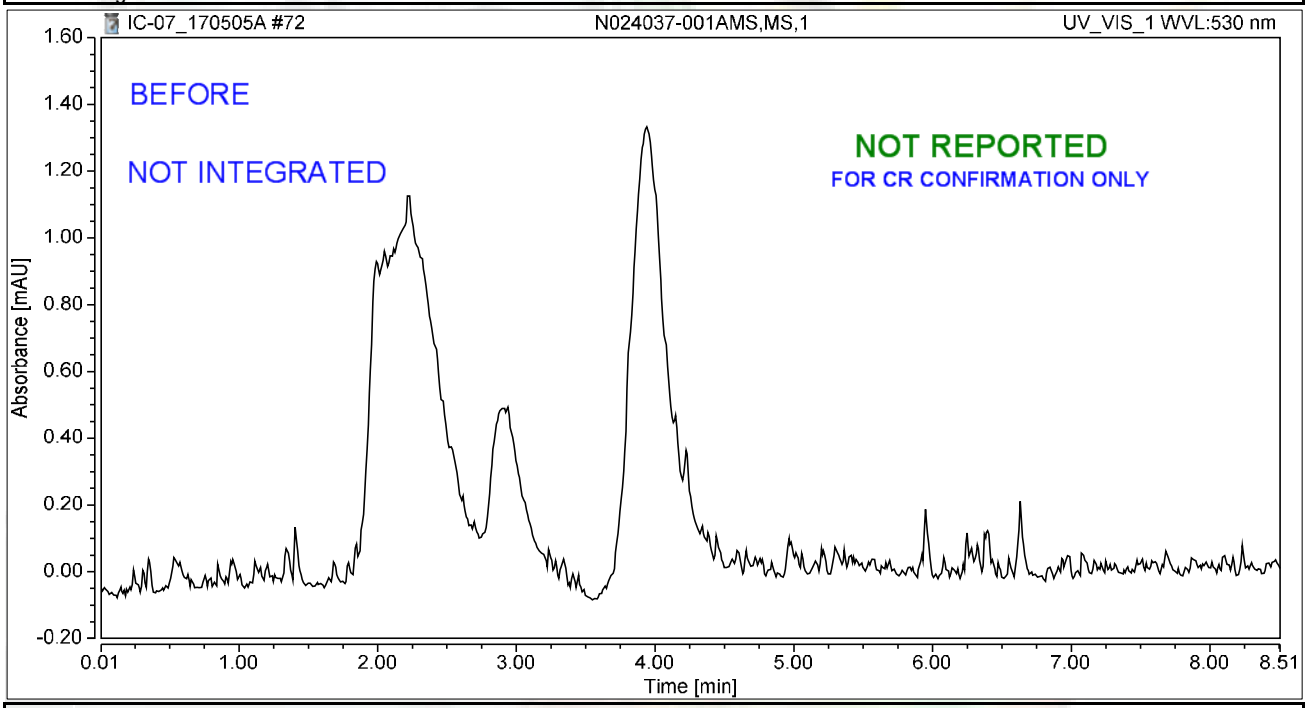
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024037-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

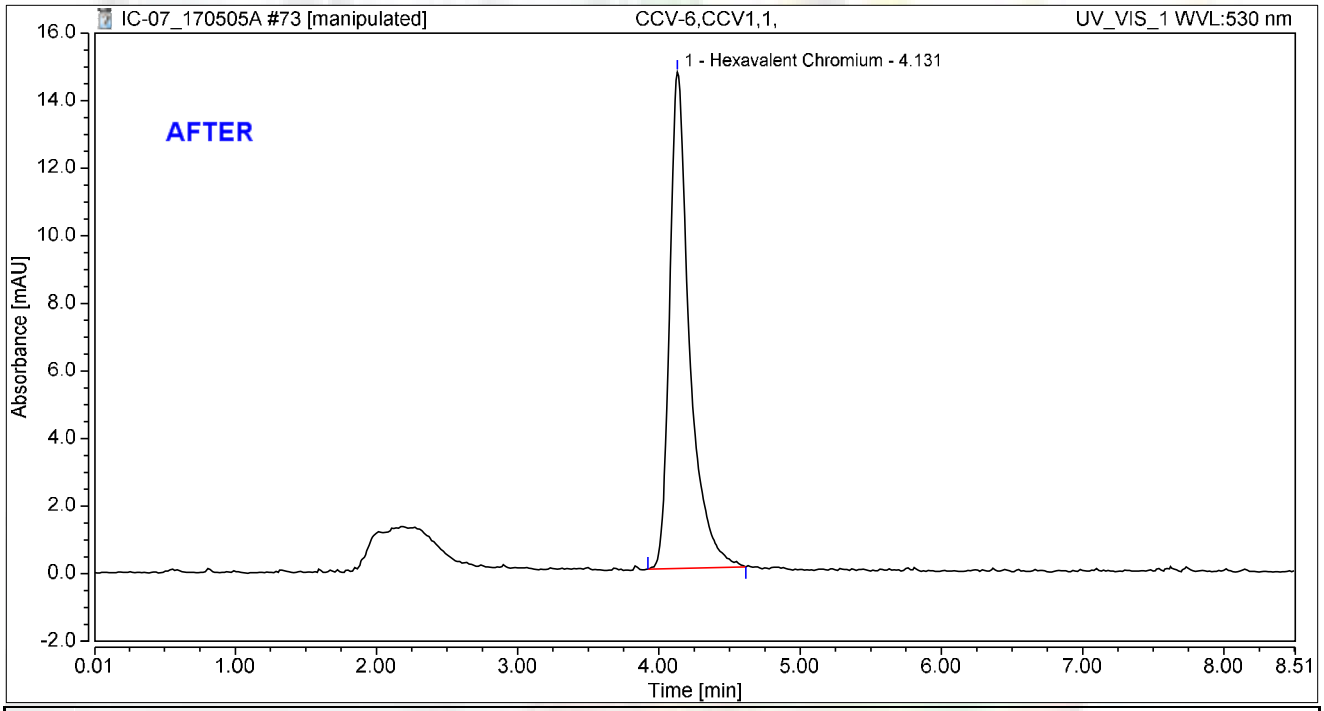
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.402	14.683	100.00	100.00	9.8495
Total:			**2.402**	**14.683**	**100.00**	**100.00**	

rba 5/9/2017

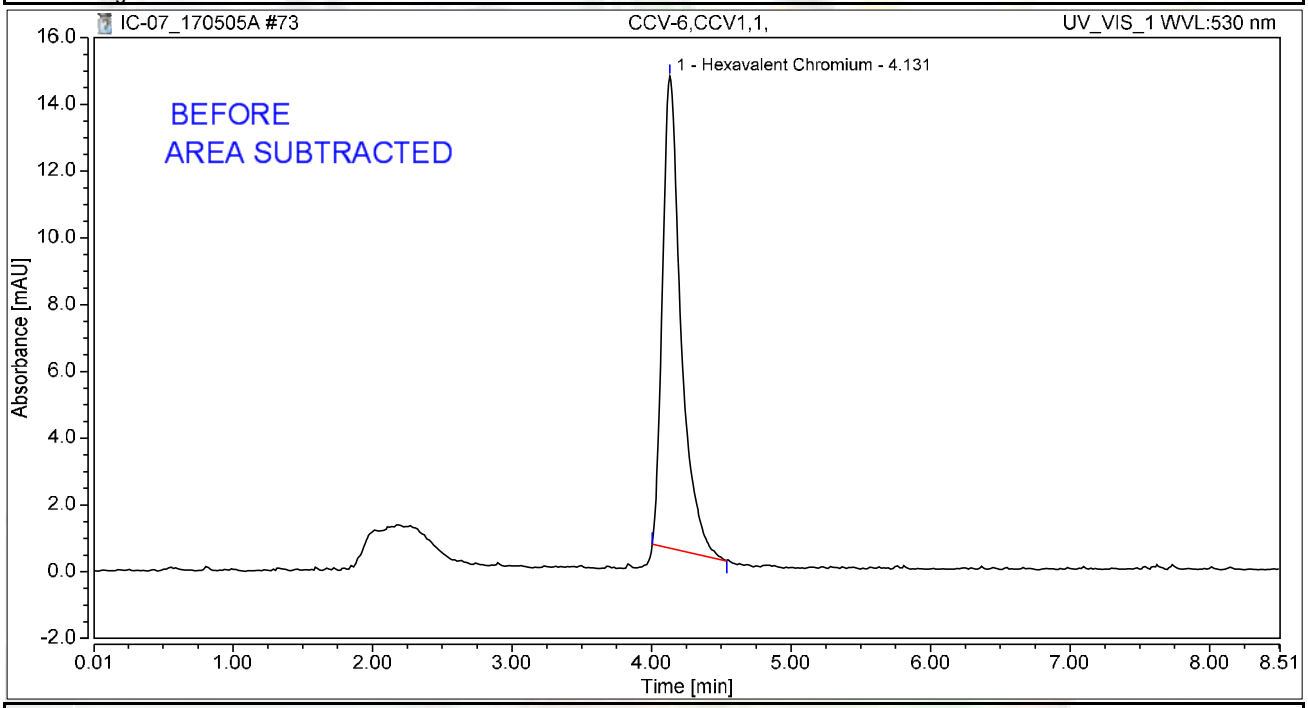
Reviewed by: 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.170	14.135	100.00	100.00	8.8991
Total:			**2.170**	**14.135**	**100.00**	**100.00**	

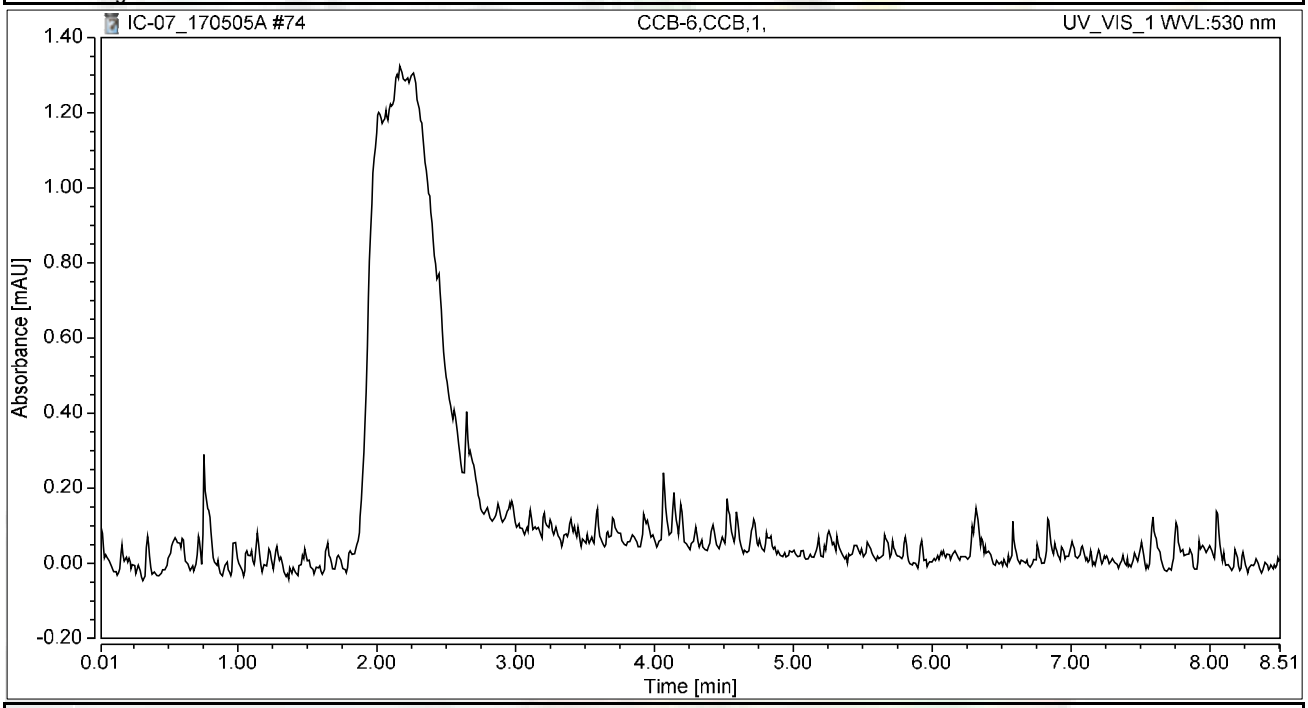
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

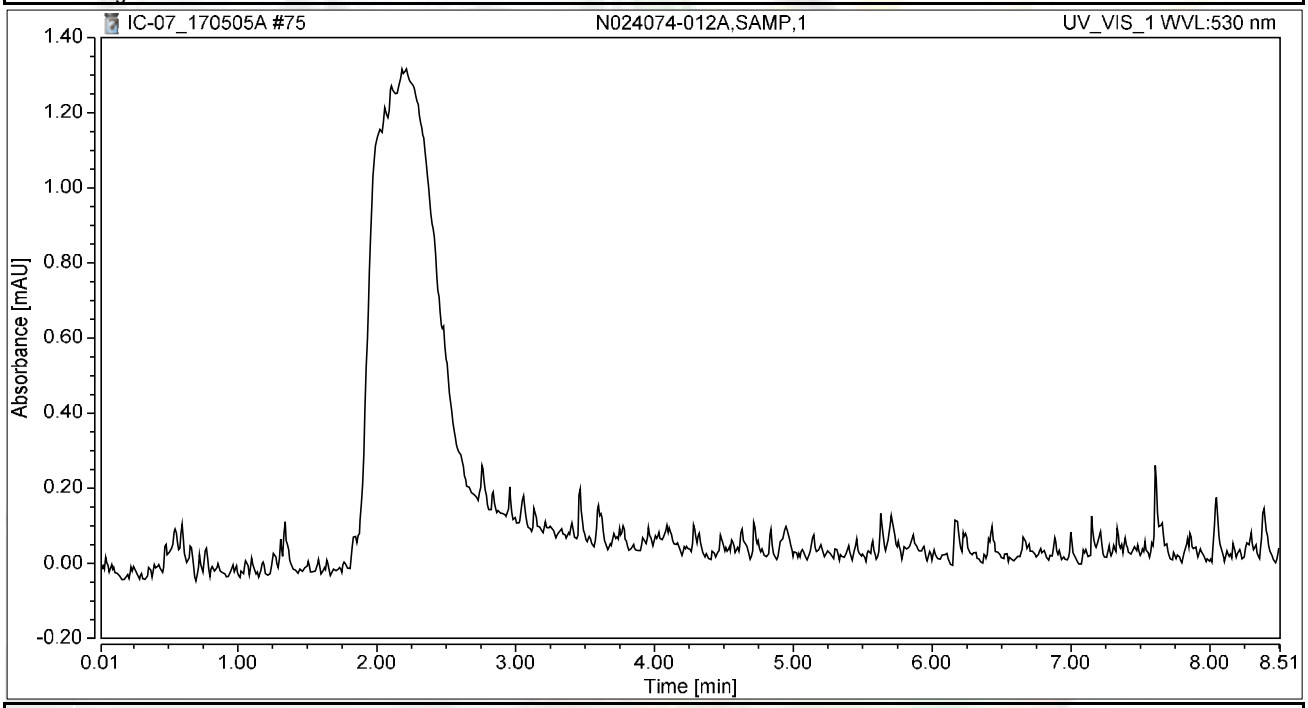
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024074-012A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:35**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

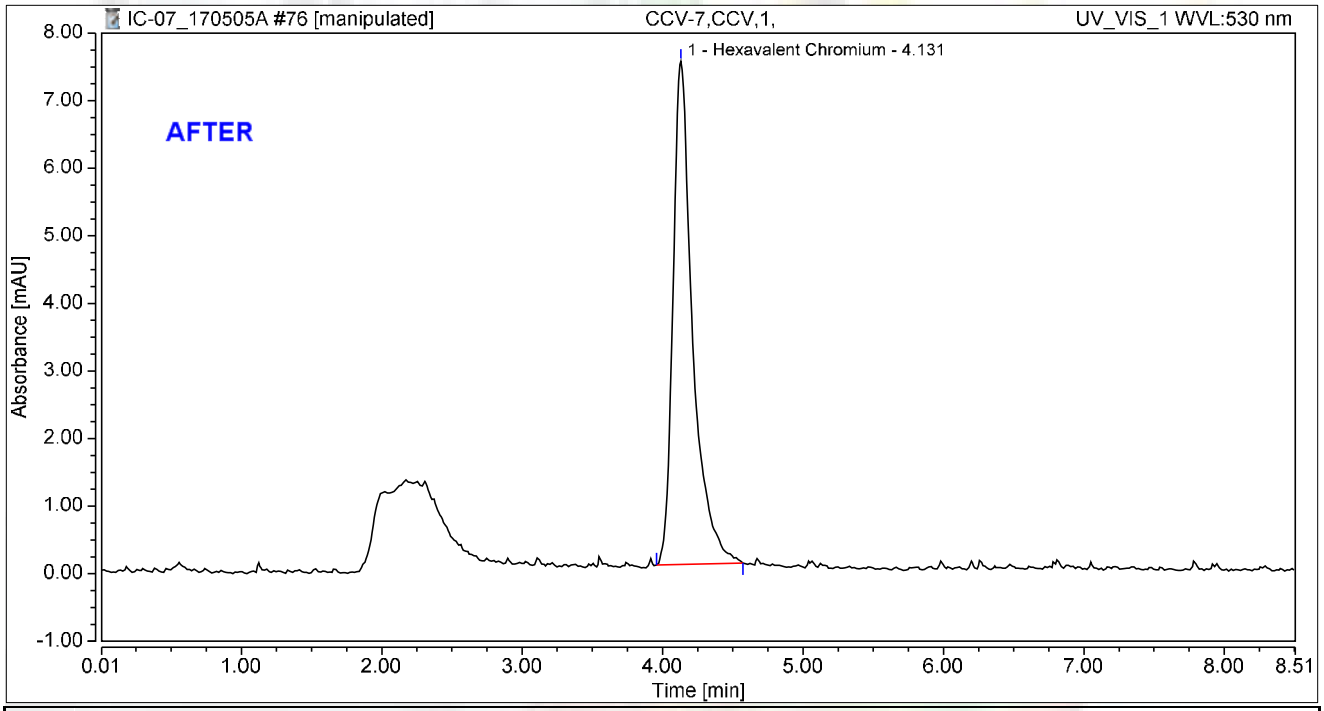
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.206	7.444	100.00	100.00	4.9466
Total:			**1.206**	**7.444**	**100.00**	**100.00**	

rba 5/9/2017

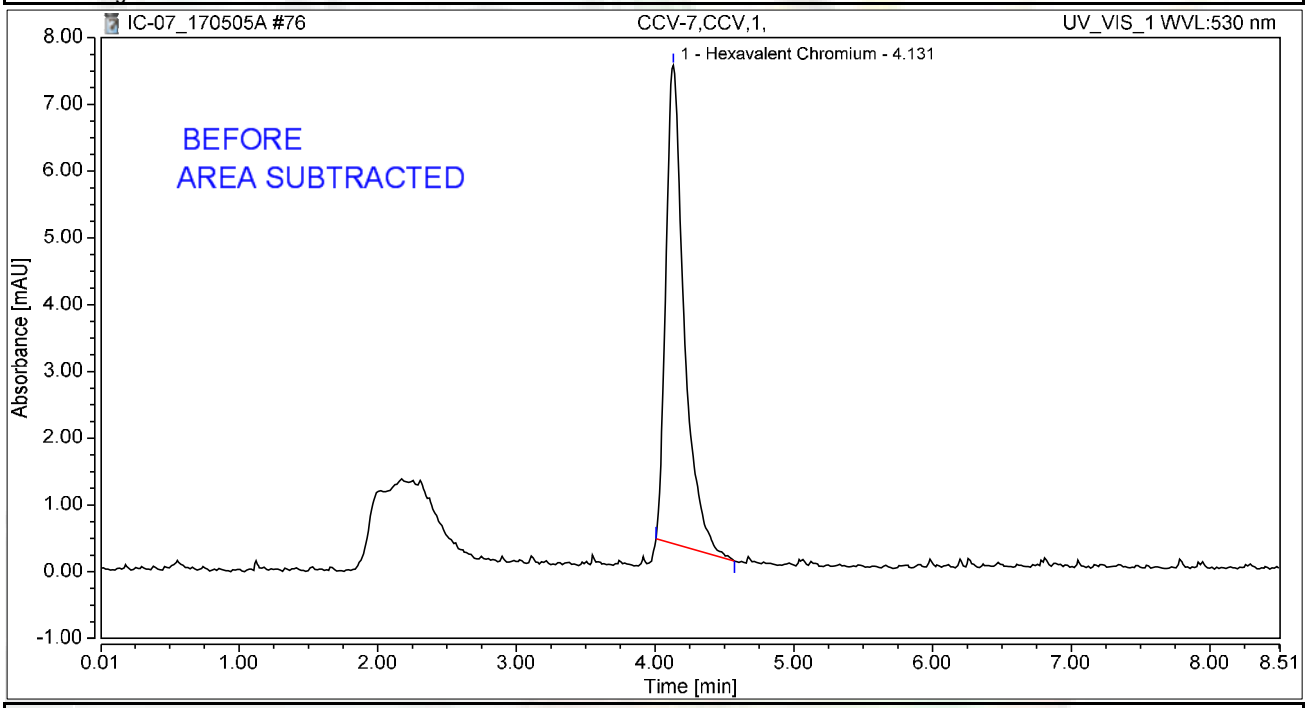
Reviewed by: Nancy 5/15/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.098	7.164	100.00	100.00	4.5040
Total:			**1.098**	**7.164**	**100.00**	**100.00**	

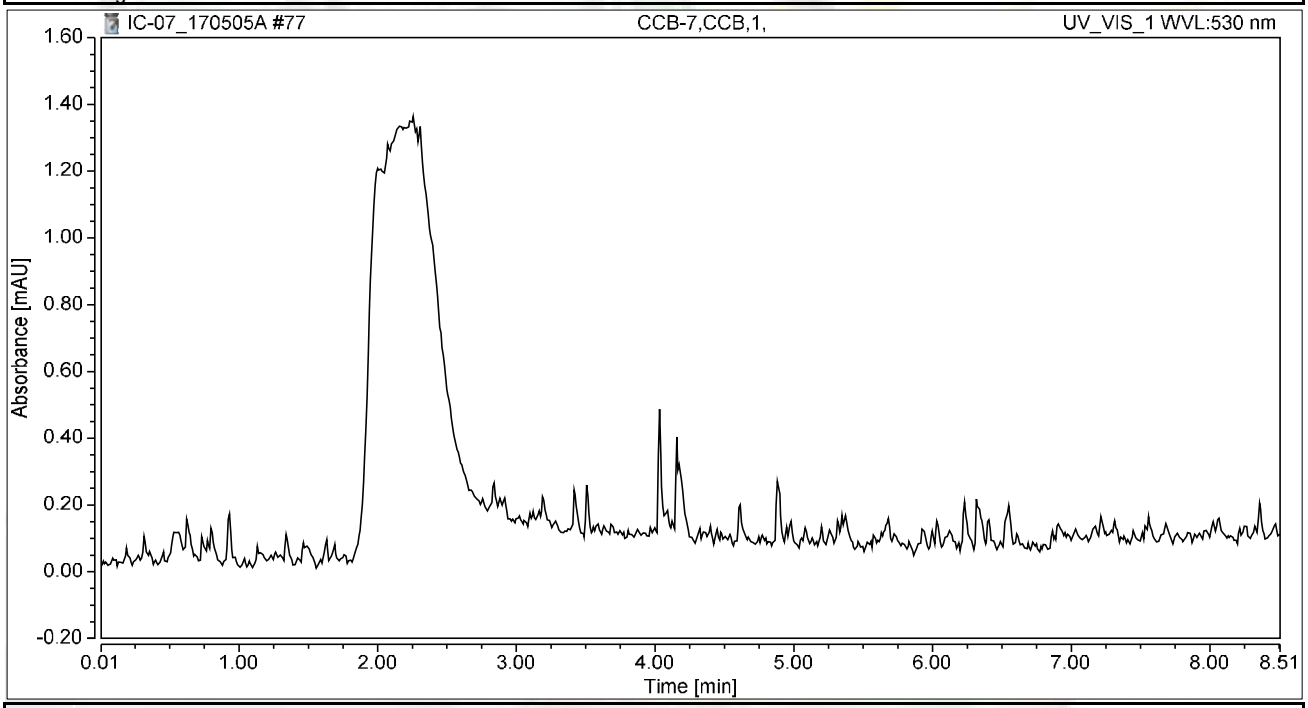
rba 5/9/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**05/May/17 18:54**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115058 **Analyst:** LSR

ASSET #: N024107 **Date Analyzed:** 5/5/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/5/2017

2nd Level Reviewer: 5/18/2017 Date: ———

SAMPLE CALCULATION

Sample ID: **N024107-001C @ pH 7.82**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.20 mL)

= **0.02232 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (9.85) (0.02232 N) (1) * 1000

= 219.8520 mg**/L**

Reporting results in two significant figures,

= **220 mg/L** as CaCO3

Silvia Ramit 5/5/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02232 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (9.85 mL) (0.02232) (1) * 1000

= 219.8520 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **219.8520 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **220 mg/L**

Julia Ramit 5/5/2017

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.61	50	0.00	0.050	MBLK
LCS-1	8.45	50	0.05	4.50	LCS
N024107-001C	7.82	50	0.00	9.85	SAMP
N024107-002C	7.87	50	0.00	7.35	SAMP
N024107-001CDUP	7.68	50	0.00	9.80	DUP
N024107-002CMS	7.87	50	0.00	11.50	MS
N024107-002CMSD	7.98	50	0.00	11.50	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.20**	ml
N H2SO4	**0.02232**	Normal
Date Analyzed:	**5/5/17**	
Time:	**1:10 PM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-160125B**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R170315B**	

Silvia Ramit 5/5/2017

Date Analyzed:	5/5/17		Reagents:					Standardization:					P = 0
Time Started:	1:10 PM			Sodium Carbonate:		CINV-160125B			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.2	mL		P = 1/2 T
				Sulfuric Acid:		R170315B							P > 1/2 T
									N H2SO4	0.02232	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.61				0.02232	0.00	0.05	0.05	1	0.00	1.12	
LCS-1	50	8.45				0.02232	0.05	4.45	4.50	1	1.12	100.45	
N024107-001C	50	7.82				0.02232	0.00	9.85	9.85	1	0.00	219.87	
N024107-002C	50	7.87				0.02232	0.00	7.35	7.35	1	0.00	164.06	
N024107-001CDU	50	7.68				0.02232	0.00	9.80	9.80	1	0.00	218.75	
N024107-002CMS	50	7.87				0.02232	0.00	11.50	11.50	1	0.00	256.70	
N024107-002CMS	50	7.98				0.02232	0.00	11.50	11.50	1	0.00	256.70	

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Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	5/5/17
Time:	1:10 PM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.12	1.12	1.12		P = 0
LCS-1	0.00	2.23	98.21	100.45	100.45		P < 1/2 T
N024107-001C	0.00	0.00	219.87	219.87	219.87		P = 0
N024107-002C	0.00	0.00	164.06	164.06	164.06		P = 0
N024107-001CDUP	0.00	0.00	218.75	218.75	218.75		P = 0
N024107-002CMS	0.00	0.00	256.70	256.70	256.70		P = 0
N024107-002CMSD	0.00	0.00	256.70	256.70	256.70		P = 0

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Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: 5/5/17
Time Extracted:
Extracted By: LSR

Date Analyzed: 5/5/17
Time Analyzed: 1310
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-160125B
Hydrochloric Acid: –
Sulfuric Acid: R170315B
Sodium Bicarbonate: CINV-150601A

pH meter CALIBRATION:
SLOPE: 97.6%
pH 4 - 4.01 - CINV170125B
7 - 7.02 - 170125C
10 - 10.05 - 161214A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50 mL	10.39	1WST170505A	5 mL	0.05N	–	–	11.20	50/50	N H_2SO_4 = (2.65 g/L)(5 mL) / (53)(V titrant)	= 0.022321428
	#2	↓	10.36	↓	↓	↓	–	–	11.20	↓		
1)	MBLK	50 mL	5.61	–	–	–	0.02232	0	0.05	50/50		
2)	LCS	↓	8.45	1WST170505B	1 mL	0.05N	↓	0.05	4.50	↓		
3)	NO24107-001C	↓	7.82	–	–	–	↓	0	9.85	↓		
4)	2C	↓	7.87	–	–	–	↓	0	7.35	↓		
5)	1CDUP	↓	7.68	–	–	–	↓	0	9.80	↓		
6)	2CMS	↓	7.87	1WST170505B	1 mL	0.05N	↓	0	11.50	↓		
7)	2CMSD	↓	7.98	↓	↓	↓	↓	0	11.50	↓		
8)												
9)												
10)												
11)												
12)												
13)												
14)												
15)												
16)				P = (V pH 8.3)(N H_2SO_4)(50,000) / Vsx								
17)												
18)												
19)												
20)				T = (V pH 4.5)(N H_2SO_4)(50,000) / Vsx								
	MS											
	MSD											
	LCS											

Julia Ramit 5/5/2017

STANDARDS LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.269
www.assetlaboratories.com

Date	STD Name	Working STD Code	STOCK INFORMATION Stock STD Code (See stock STD Log for Ref)	Stock Conc. (ppm)	Amount Taken from Stock (uL)
4/14/17	0.05 N Na_2CO_3	IWST170414 B	CINV-160125B	-	0.265g
1	0.05 N $NaHCO_3$	1 C	1 150601A	-	0.8398g
4/21/17	1000 ppm INORGANIC STD. 1° (Na_2CO_3)	IWST170421A	CINV-160125B	-	0.8789g
	1000 ppm INORGANIC STD 2° ($NaHCO_3$	1 B	CINV150601A	-	0.6995g
4/26/17	0.05 N Na_2CO_3	IWST170426A	CINV-160125B	-	0.265g
1	0.05 N $NaHCO_3$	1 B	1 150601A	-	0.8398g
4/26/17	1 ppm Perchlorate, 1°	IWST170426C	~~CINV~~ New ISST150719A	1000	100
	1 ppm perchlorate, 2°	1 D	1 170418A	1000	100
5/1/17	1000 ppm NaCl	IWST170501A	~~CI~~ LIMS 8757	-	1.0g
5/5/17	0.05 N Na_2CO_3	IWST170505A	CINV-160125B	-	0.265g
1	0.05 N $NaHCO_3$	1 B	1 150601A	-	0.8398g

	PREPARATION INFORMATION								
	Final Vol. (ml)	Final Conc. (ug/ml)	Solvent			Exp Date *		Comments	Initial
			Solvent	Supplier	Lot #	Working STD	Manufacturer		
1	100 mL	0.05N	H_2O	"	"	4/21/17	3/22/19		WR
	"	"	"	"	"	4/21/17	6/9/18		WR
	100mL	1000 ppm	H_2O	"	"	4/21/18	3/22/19		REB
	"	"	"	"	"	4/21/18	6/9/18		"
5	100 mL	0.05N	H_2O	"	"	WR 5/3/17	3/22/19		WR
	"	"	"	"	"	"	6/9/18		WR
	100	1 ppm	H_2O	"	"	5/30/2017	5/2017		REB
	100	1 ppm	"	"	"	REB 10/30/17 ~~4/2018~~	6/2018		"
	1000	1000 ppm	H_2O	"	"	5/1/18	2/8/20		WR
10	100 mL	0.05 N	H_2O	"	"	5/12/17	3/22/19		WR
	"	"	"	"	"	"	6/9/18		WR
15									
20									

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)	
Digestion Soln (Cr6+)	R170309C	CINV-160721A/8902	60g/40g	2000	1
20% NaHSO4	R170309D	CINV 170220A	800g	4L	
MgCl2 soln	R170309E	CINV-160219C	40g	100	
Eluent (Cr6+)	R170314A	CINV-161228G/CINV-161228B	66g/13ml	2000	
Post Column Rgt (Cr6+)	R170314B	CINV-161012A/8782/CINV-161228I	0.5g/28ml/100mL	1000	5
0.1 N H2SO4	R170315A	LIMS 8782	3 mL	1000 mL	
0.02 N H2SO4	1 B	R170315A	400 mL	2000 mL	
Post Column Rgt (Cr6+)	R170320A	CINV-161012A/8782/CINV-161228I	0.5g/28 ml/100mL	1000	
Eluent (Cr6+)	R170320B	CINV-161228G/CINV-161228B	66g/13mL	2000	
27. CuSO4	R170321A	CINV-140211D	2g	100	10
R1 Buffer	1 B	R170321A/CINV-160525A CINV-140224A/CINV-161228B	2.5mL, 85g 0.1g, 14mL	1000	
R2 column NG Rgt.	— C	CINV-150423A/CINV-160405A CINV-170127A	0.2g, 4g 17mL	100	
1:1 HNO3	R170322A	8904	1L	2L	
Digestion Soln (Cr6+)	R170322B	CINV-160721A/8902	30g/20g	1000	
TCLP 1	R170314C	R160725A/8453	128.6mL/11.4mL	2000	15
STLC	R170314D	R160725A/CINV-170215A	~~mL/~~ 300g	~~2000~~ ~~3780~~	
Eluent (Cr6+)	R170324A	CINV-161228G/CINV-161228B	66g/13mL	2000	
Post Column Rgt (Cr6+)	R170324B	CINV-161012A/8782/CINV-161228I	0.5g/28ml/100mL	1000	
TCLP 1	R170327A	R160725A/8453	1286mL/11.4mL	2000	
TCLP 1	R170328A	R160725A/8453	257.2mL/22.8mL	1000	20

Reagent Preparation

	Preparation		Exp Date			
	Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
1	-	3/9/17	4/9/18 NM	8/04/19 · 2/28/20		
	20%	3/9/17	3/9/18 3/9/18 NSG	3/9/20		HSG
	-	3/9/17	3/9/18	3/10/19		
	-	3/14/17	3/14/18	3/14/20 · 2/17/19		
5	-	3/14/17	3/14/17	11/22/19; 12/28/18;	3/9/19	
	0.1 N	3/15/17	3/15/18	12/28/18		
	0.02 N	3/15/17	3/15/17	3/15/18		LSR
	-	3/20/17	3/25/17	11/22/19; 12/28/18;	3/9/19	LSR
	-	3/20/17	3/20/18	3/14/20 · 2/17/19		
10	2%	3/20/17	4/20/17	5/20/17		
	"	"	"	9/21/17 9/15/19 5/24/17 2/7/19		MGS
	"	"	"	5/22/18 4/6/19 3/8/19		"
	1:1	3/22/17	3/22/18	8/22/19		
	"	3/22/17	4/22/17	8/4/19; 2/26/20		PG
15	-	3/14/17	3/14/18	7/25/17; 12/29/16	late entry	MGA
	-	3/14/17	3/14/16	7/25/17, 2/17/120	late entry	MG
	-	3/24/17	3/24/18	3/14/20 · 2/17/19		"
	-	3/24/17	3/29/17	11/22/19; 12/28/18; 3/9/19		
	-	3/27/17	3/27/18	7/25/17; 12/29/18		MG
20	-	3/28/17	3/28/19	7/25/17; 12/29/18		MG

* Check reagent expiration date versus stock/manufacturer's expiration date

ASSEL LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7439 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
"Serving Clients with Passion and Professionalism"

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-150601A	Sodium Bicarbonate	macron Chemicals	103763	-	6/1/15	6/9/15	6/9/18	LSR	#7603
↓ B	Conductivity Std, 1414 µs/cm	VWR	CC134469	-	6/1/15	6/10/15	2/13/16	LSR	#7604
CINV-150619A	conductivity Std, 9.78 ms/cm	VWR	CC13606	-	6/19/15	8/10/15	4/14/2016	LSR	# 76603
↓ -150619B	Conductivity Std, 10009 µs/cm	VWR	CC13401	-	6/19/15	9/9/15	1/26/20016	LSR	# 7664
↓ -150619C	Sodium Hydroxide	macron	109312	-	6/19/15	6/24/15	5/24/18	LSR	manufacture Exp. 6/8/2017 #7665
CINV-150619D	Nitric Acid	J.T. Baker	111532	70%	6/19/15			AH	# 7666
↓ E	↓	↓	↓	↓	↓			AH	# 7667
↓ F	↓	↓	↓	↓	↓			AH	# 7668
↓ G	↓	↓	↓	↓	↓			AH	# 7669
CINV-150624A	Buffer, pH 7.00	Thermo Scientific	TV1	-	6/24/15	9/8/15	5/2017	LSR	#7670
CINV-150708A	Buffer, pH 10	BDH	4506547	-	7/8/15	8/28/15	12/2016	LSR	
CINV-150709A	Ammonium Sulfate	JTBaker	109710	≥ 99.0%	7/9/15	7/23/15	7/23/18	L	Re-test bate: 6/13/21
↓ B	↓	↓	↓	↓	↓	8/6/15	8/6/18	↓	↓
↓ C	↓	↓	↓	↓	↓	9/9/15	9/9/15	↓	↓
↓ D	↓	↓	113058	↓	↓			↓	↓
↓ E	Sudan IV	Sigma - Aldrich	MKBA2900V	≥ 80%	↓			↓	
CINV-150715A	Ammonium persulfate	BDH	3495C517	—	7/15/15	8/2/15	8/2/18	HD	
↓ B	METHANOL	JT BAKER	57548	≥ 99.8%	7/15/15	8/25/15	8/25/17	↓	
↓ C	SULFURIC ACID	J.T BAKER	84185	95-98%	7/15/15	9/23/15	9/23/17	↓	
↓ D	POTASSIUM PERMANGANATE	J.T BAKER		≥ 99.0%	7/15/15			↓	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-160111 C	Buffer, pH 7	Thermo Scientific	TP2		1/11/16	3/15/16	11/2017	LSR	
D	↓, pH 10	VWR	1509 B50		1/11/16	3/8/16	3/2017	LSR	
E	Conductivity STD, 1413 ms/cm	Metheler Toledo	1511260009		1/11/16	4/11/16	8/24/17	LSR	
CINV-160112 A	HEXANES	Dry Chemicals	55219		1/12/16	1/12/16	1/12/18	LSR	8147
B						1/19/16	1/19/18	LSR	8148
C						1/28/16	1/28/18	LSR	8149
D						2/17/16	2/17/18	LSR	8150
CINV-160125 A	Sodium Carbonate	Macron	109514		1/25/16	2/12/16	2/12/19	REB	
CINV-160125 B	↓	↓	↓		↓	3/22/16	3/22/19	↓	
C	Ammonium hydroxide	BDH	7215070		1/25/16	2/24/16	2/24/18	REB	
CINV-160125 ~~A~~ D REB 1/25/16	Ammonium sulfate	JT. BAKER	126292	≥99%	1/25/16	1/25/16	1/25/19	REB	
E						02/01/16	02/01/19		
F						3/2/16	2/10/19		
G						2/23/16	2/23/19		
CINV-160125 H	1,5 diphenyl carbazide	J.T	125086		1/25/16	3/10/16	3/10/19	REB	
CINV-160125 ~~I~~ 5 I 1/25/16	Turbidity, 5.0 NTU	AMCO Clear	C585117	–	1/25/16	2/1/16 2/07/16	1/2017	LSR	
CINV-160219 A	Zinc acetate	RICCA	1601D42	–	2/19/16		01/2018	YRJ	
CINV-160219 B	METHANOL	J.T BAKER	121483	99.5%	2/19/16	2/20/16	2/20/18	REB	
C	Magnesium Chloride	Omni Pur	15K18008			3/10/16	3/10/19		
D	Ammonium persulfate	BDH	2455C516	≥98%		3/14/16	3/14/19		

Advanced Technology Laboratories-Las Vegas
Logbook #2

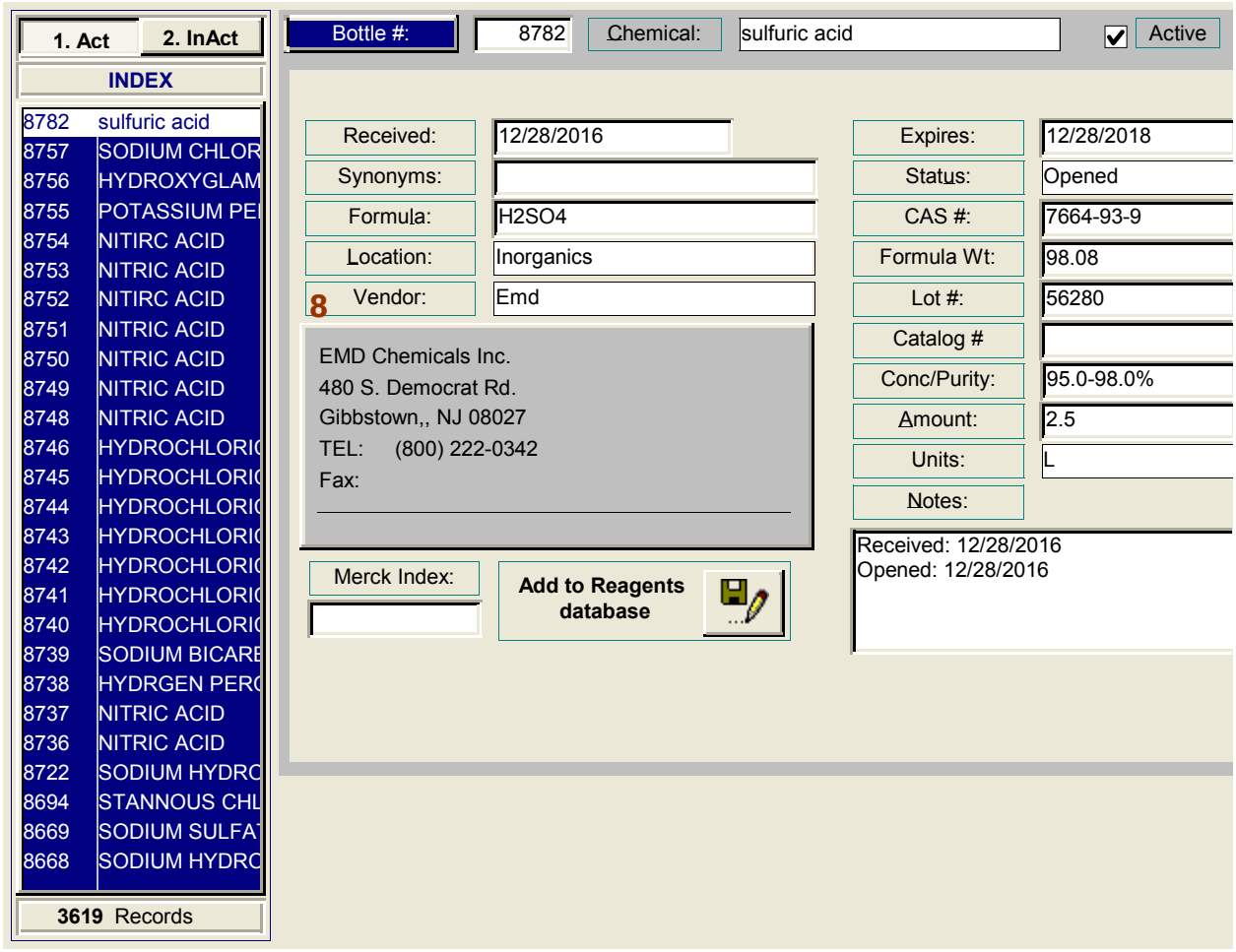
CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161202A	stannous chloride	LSS	160624-C	-	12/2/16			MG	
CINV-161205A	SODIUM CARBONATE	LSS	160324-A	-	12/5/16			LSR	#8739
CINV-161213A	Methyl Alcohol	Honeywell	BP837	99.9%	12/13/16	12/13/16	8/13/18	MG	
CINV-161213B	Methyl Alcohol	Honeywell	DP837	99.9%	12/13/16			MG	
CINV-161214A	Buffer, pH 10	VWR	4609D54	-	12/14/16	12/30/16	3/2018	LSR	/RDA
B	Conductivity Std, 1413 us/cm	"	CC153S5	-	"		10/3/17	LSR	
C	Turbidity Std, 50 NTU	Amco Clear	C692002	-	"		12/2017	LSR	
CINV-161220A	Methyl Alcohol	Tedia	160305308	99.9%	12/20/16			MG	
B	"	"	"	"	"	"	"	"	
C	"	"	"	"	"	"	"	"	
D	"	"	"	"	"	"	"	"	
E	"	"	"	"	"	"	"	"	
F	-	-	-	-	"	"	"	"	
G	stannous chloride	LSS	161128-A	-	"	"	"	"	
H	"	"		-	-	"	"	-	
CINV-161220I	conductivity Std 10,000	VWR	CC150S5	-	12/16/16	1/10/17	7/8/17	MG	
J	" 100,000	"	CC15261	-	12/19/16		9/2017	"	
CINV-161228A	Ammonium Hydroxide	VWR	7Z160850	-	12/28/16	1/6/17	1/3/19	MG	/RDA
161228B	"	"	"	-	"	"	"	"	
161228C	1-5 Diphenylcarbohydrazide	J.T Baker	190227	-	"	"	"	"	

Advanced Technology Laboratories-Las Vegas
Logbook #2

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
NV-181228D	Magnesium Chloride Hexahydrate	VWR	16C524	-	12/28/16			MG	
E	Ammonium Sulfate	Lab chem	F258-19	-	12/28/16	2/9/17	2/9/20		RBA
F						4/5/17	4/5/20		RBA
G						3/14/17	3/14/20		RBA
H									
I	Methanol	Omni soly	JU238	99.9%		3/9/17	3/9/19	-	RBA
J	Sulfuric Acid								
~~CINV 1/23~~ MG 1/23/17									
CINV170123A	Ammonium Persulfate	BDH	3056C514	98.0%	1/23/17	1/25/17	1/25/20	MG	
CINV170125A	Phosphoric acid	EMD	5C0356/9	85%	1/25/17	3/8/17	3/18/19	RB	
B	Buffer, pH 4	VWR	4610A50	-		4/14/17	9/2018	LSR	
C	Buffer, pH 7		4611C60	-		4/17/17	10/2018	LSR	
D	Buffer, pH 7 (ICS)	Thermo Scientific	UQ1	-		3/9/17	10/2018	LSR	
E	Conductivity Std, 10,000 uS/cm	Ricca	2611936	-			10/2018	LSR	
F	Conductivity Std, 1413 uS/cm	Mettler Toledo	16G205001	-		3/2/17	7/20/18	LSR	
CINV170215A	Citric Acid Monohydrate	ALFA AESAR	S22C041	99-102%	2/15/17	2/17/17	2/17/20	RB	
CINV170220A	Sodium Hydrogen Sulfate	Sigma-Aldrich	MKB05396V	-	-			HSC	
CINV-170227A	Stannous Chloride	LSS	161216-3C		2/27/16			MG	
CINV-170303A	Conductivity Std 9.76 uS/cm	VWR	CC15405	-	3/3/17	4/12/17	10/17/17	LSR	
CINV-170329A	Conductivity Std, 10,000 uS/cm	VWR	CC15548	-	3/29/17			MG	

Advanced Technology Laboratories-Las Vegas
Logbook #2


1. Act
2. InAct
INDEX
8782 sulfuric acid
8757 SODIUM CHLOR
8756 HYDROXYGLAM
8755 POTASSIUM PE
8754 NITIRC ACID
8753 NITRIC ACID
8752 NITIRC ACID
8751 NITRIC ACID
8750 NITRIC ACID
8749 NITRIC ACID
8748 NITRIC ACID
8746 HYDROCHLORI
8745 HYDROCHLORI
8744 HYDROCHLORI
8743 HYDROCHLORI
8742 HYDROCHLORI
8741 HYDROCHLORI
8740 HYDROCHLORI
8739 SODIUM BICARE
8738 HYDRGEN PERO
8737 NITRIC ACID
8736 NITRIC ACID
8722 SODIUM HYDRO
8694 STANNOUS CHL
8669 SODIUM SULFA
8668 SODIUM HYDRO
3619 Records
Bottle #:
8782
Chemical:
sulfuric acid
Active
Received:
12/28/2016
Synonyms:
Formula:
H2SO4
Location:
Inorganics
8
Vendor:
Emd
EMD Chemicals Inc.
480 S. Democrat Rd.
Gibbstown,, NJ 08027
TEL: (800) 222-0342
Fax:
Merck Index:
Add to Reagents database
Expires:
12/28/2018
Status:
Opened
CAS #:
7664-93-9
Formula Wt:
98.08
Lot #:
56280
Catalog #
Conc/Purity:
95.0-98.0%
Amount:
2.5
Units:
L
Notes:
Received: 12/28/2016
Opened: 12/28/2016

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115067
ASSET #: N024107

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 5/5/2017

Method:

[X] EPA 300.0
[ ] EPA 7199

[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?			X			
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/9/2017

2nd Level Reviewer: 5/18/2017 Date: →

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SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: GROUNDWATER

FORMULA:

Calculate the Sulfate concentration, in mg/L, in the orignal sample as follows:

Sulfate, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N024107-001C** concentration in mg/L is calculated as follows:

Sulfate, mg/L = 7.0326 * 50

= 351.63

Reporting result in two significant values,

Sulfate, mg/L = 350

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 10
Created: 4/25/2017 9:56:29 AM by IC-05
Last Update: 4/25/2017 1:09:21 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 9:57:11 AM
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:12:29 AM
3	Std - 0	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:27:47 AM
4	Std - 1	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:43:05 AM
5	Std - 2	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 10:58:23 AM
6	Std - 3	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:13:40 AM
7	Std - 4	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:28:59 AM
8	Std - 5	Standard	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 11:44:17 AM
9	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 12:14:45 PM
10	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished	4/25/2017 12:46:33 PM

rba 4/26/2017

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 10
Created: 4/25/2017 9:56:29 AM by IC-05
Last Update: 4/25/2017 1:09:21 PM by IC-05

No.	Name	Comment
1	BLANK,BLANK,1	BLANK
2	BLANK,BLANK,1	BLANK
3	Std - 0	iBLANK
4	Std - 1	STD-LOW
5	Std - 2	STD
6	Std - 3	STD
7	Std - 4	STD
8	Std - 5	STD-HIGH
9	ICV,ICV,1	ICV
10	ICB,ICB,1	ICB

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 28
Created: 5/5/2017 9:07:43 AM by IC-05
Last Update: 5/5/2017 1:16:22 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
3	Std - 0	Standard	1000.0	Anions Default	Anions_170425	Finished
4	Std - 1	Standard	1000.0	Anions Default	Anions_170425	Finished
5	Std - 2	Standard	1000.0	Anions Default	Anions_170425	Finished
6	Std - 3	Standard	1000.0	Anions Default	Anions_170425	Finished
7	Std - 4	Standard	1000.0	Anions Default	Anions_170425	Finished
8	Std - 5	Standard	1000.0	Anions Default	Anions_170425	Finished
9	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
10	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
11	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
12	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
13	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
14	N024107-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170425	Finished
15	N024107-001CDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_170425	Finished
16	N024107-001CMS,MS,200	Unknown	1000.0	Anions Default	Anions_170425	Finished
17	N024107-001CMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_170425	Finished
18	N024107-002C,SAMP,500	Unknown	1000.0	Anions Default	Anions_170425	Finished
19	N024107-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
20	N024107-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
21	N024107-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
22	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
23	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
24	N024107-001CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
25	N024107-001CMS,MS,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
26	N024107-001CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_170425	Finished
27	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_170425	Finished
28	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_170425	Finished

jnba 5/9/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 28
Created: 5/5/2017 9:07:43 AM by IC-05
Last Update: 5/5/2017 1:16:22 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	4/25/2017 9:57:11 AM	BLANK
2	BLANK,BLANK,1	4/25/2017 10:12:29 AM	BLANK
3	Std - 0	4/25/2017 10:27:47 AM	iBLANK
4	Std - 1	4/25/2017 10:43:05 AM	STD-LOW
5	Std - 2	4/25/2017 10:58:23 AM	STD
6	Std - 3	4/25/2017 11:13:40 AM	STD
7	Std - 4	4/25/2017 11:28:59 AM	STD
8	Std - 5	4/25/2017 11:44:17 AM	STD-HIGH
9	BLANK,BLANK,1	5/5/2017 9:08:07 AM	BLANK
10	CCV-1,CCV,1	5/5/2017 9:23:25 AM	CCV
11	CCB-1,CCB,1	5/5/2017 9:38:43 AM	CCB
12	MB-H2O,MBLK,1	5/5/2017 9:54:01 AM	METHOD BLANK
13	LCS-H2O,LCS,1	5/5/2017 10:09:19 AM	LCS
14	N024107-001C,SAMP,200	5/5/2017 11:03:54 AM	SAMP,0.05>10mL
15	N024107-001CDUP,DUP,200	5/5/2017 11:19:11 AM	DUP,0.05>10mL
16	N024107-001CMS,MS,200	5/5/2017 11:34:29 AM	MS,0.05>10mL
17	N024107-001CMSD,MSD,200	5/5/2017 11:49:48 AM	MSD,0.05>10mL
18	N024107-002C,SAMP,500	5/5/2017 12:05:06 PM	SAMP,0.02>10mL
19	N024107-001C,SAMP,50	5/5/2017 12:20:24 PM	SAMP,0.2>10mL
20	N024107-001C,SAMP,50	5/5/2017 12:57:45 PM	SAMP,0.2>10mL
21	N024107-002C,SAMP,50	5/5/2017 1:13:03 PM	SAMP,0.2>10mL
22	CCV-2,CCV,1	5/5/2017 1:28:20 PM	CCV
23	CCB-2,CCB,1	5/5/2017 1:43:39 PM	CCB
24	N024107-001CDUP,DUP,50	5/5/2017 1:58:57 PM	DUP,0.2>10mL
25	N024107-001CMS,MS,50	5/5/2017 2:14:14 PM	MS,0.2>10mL
26	N024107-001CMSD,MSD,50	5/5/2017 2:29:32 PM	MSD,0.2>10mL
27	CCV-3,CCV,1	5/5/2017 2:44:50 PM	CCV
28	CCB-3,CCB,1	5/5/2017 3:00:08 PM	CCB

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INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/25/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0741	0.1469	0.2965	0.7606	1.5970	0.999

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 4/25/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0552	0.2154	0.4386	1.1109	2.3109	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **ICV**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2636782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.188	0.50	2.000	0	109	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCV**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.908	0.50	2.000	0	95.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCV**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636793**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.928	0.50	2.000	0	96.4	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCV**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636795**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.921	0.50	2.000	0	96.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **ICV**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2636797**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.985	0.50	4.000	0	99.6	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCV**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.888	0.50	4.000	0	97.2	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCV**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636806**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.912	0.50	4.000	0	97.8	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCV**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636811**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.940	0.50	4.000	0	98.5	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **ICB**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2636783**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCB**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCB**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636794**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.123	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCB**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636796**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **ICB**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **4/25/2017**	SeqNo: **2636798**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCB**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636800**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCB**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636807**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115067**
Client ID: **CCB**	Batch ID: **R115067**	TestNo: **EPA 300.0**		Analysis Date: **5/5/2017**	SeqNo: **2636812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/5/2017

Sample Name		Retention Time	Evaluation
CCV-1	Chloride	3.983	
CCV-2	Chloride	3.974	
CCV-3	Chloride	3.973	
	Average	3.977	
	Applied RT Window	3.777 - 4.177	
MB-R115067_CL	Chloride	3.980	PASS
LCS-R115067_CL	Chloride	3.977	PASS
N024107-001C	Chloride	3.974	PASS
N024107-001CDUP	Chloride	3.974	PASS
N024107-001CMS	Chloride	3.974	PASS
N024107-001CMSD	Chloride	3.974	PASS
N024107-002C	Chloride	3.974	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 5/5/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	8.893	
CCV-2	Sulfate	8.870	
CCV-3	Sulfate	8.873	
	Average	8.879	
	Applied RT Window	8.679 - 9.079	
MB-R115067_SO4	Sulfate	N.A.	N.A.
LCS-R115067_SO4	Sulfate	8.887	PASS
N024107-001C	Sulfate	8.873	PASS
N024107-002C	Sulfate	8.874	PASS
N024107-001CDUP	Sulfate	8.877	PASS
N024107-001CMS	Sulfate	8.877	PASS
N024107-001CMSD	Sulfate	8.877	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

ASSET LABORATORIES
CALIFORNIA
11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
NEVADA
3151 W. Post Rd., Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 9/19/2016 , 9/20/2016
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.048	0.050	0.049	0.047	0.047	0.048	0.048	0.020	0.0011	**0.0034**	0.010	0.10
Chloride	0.217	0.214	0.214	0.214	0.215	0.216	0.214	0.025	0.0011	**0.0036**	0.010	0.50
Nitrite	0.044	0.046	0.045	0.044	0.045	0.044	0.044	0.020	0.0010	**0.0031**	0.010	0.05
Bromide	0.051	0.049	0.051	0.049	0.050	0.049	0.057	0.040	0.0029	**0.0090**	0.020	0.20
Nitrate	0.049	0.048	0.047	0.048	0.061	0.047	0.047	0.020	0.0049	**0.0154**	0.030	0.05
Phosphate	0.063	0.058	0.061	0.058	0.055	0.059	0.060	0.040	0.0025	**0.0080**	0.020	0.10
Sulfate	0.290	0.286	0.281	0.285	0.292	0.286	0.281	0.050	0.0041	**0.0129**	0.025	0.50

ASSET LABORATORIES
CALIFORNIA
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
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P: 702.307.2659 F: 702.307.2691

"Serving Clients with Passion and Professionalism"

MDL/LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 12/5/2016
Analyst: Ria B. Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0034**	0.010	0.025	0.10	0.1029	**103**
Chloride	**0.0036**	0.010	0.120	0.50	0.5745	**115**
Nitrite	**0.0031**	0.010	0.028	0.05	0.0656	**131**
Bromide	**0.0090**	0.020	0.025	0.20	0.1962	**98**
Nitrate	**0.0154**	0.030	0.056	0.05	0.0744	**149**
Phosphate	**0.0080**	0.020	0.023	0.10	0.1004	**100**
Sulfate	**0.0129**	0.025	0.254	0.50	0.688	**138**

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115298 **Analyst:** REB

ASSET #: N024107 **Date Analyzed:** 5/16/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 05/17/17 Date:

2nd Level Reviewer 5/18/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: Water

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N024107-002D** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.2950*10

= 2.950 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 3.0

RLB 05/17/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

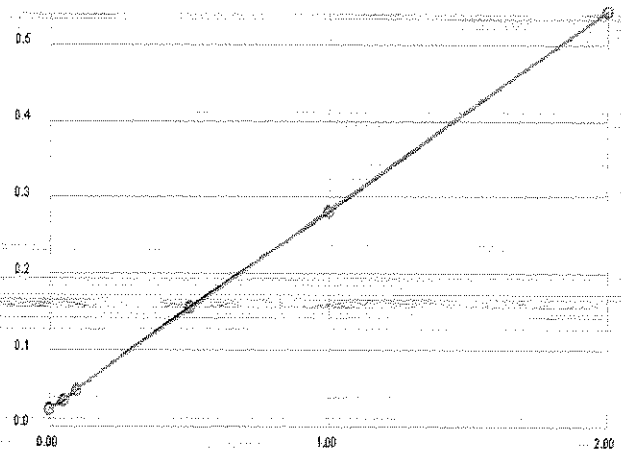
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2606x + 0.0227
Correlation	.999987

Calibrant	Energy	Set	Conc
1	0.0223	0.0000	-0.0017
2	0.0353	0.0500	0.0482
3	0.0485	0.1000	0.0989
4	0.1551	0.5000	0.5080
5	0.2825	1.0000	0.9969
6	0.5438	2.0000	1.9997



Notes:

2% CuSO4- R170502D
R1 Buffer- R170502E
R2 Coloring reagent- R170502F

STD 1°- ISST160817E
STD 2°- ISST160211J

05/17/17

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INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115298**
Client ID: **ICV**	Batch ID: **R115298**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2017**	SeqNo: **2647726**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.511	0.050	0.5000	0	102	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115298**
Client ID: **CCV**	Batch ID: **R115298**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2017**	SeqNo: **2647737**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.497	0.050	0.5000	0	99.4	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115298**
Client ID: **CCV**	Batch ID: **R115298**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2017**	SeqNo: **2647748**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.520	0.050	0.5000	0	104	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115298**
Client ID: **CCV**	Batch ID: **R115298**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2017**	SeqNo: **2647755**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.489	0.050	0.5000	0	97.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024107
Project: PG&E Topock - PMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115298**
Client ID: **ICB**	Batch ID: **R115298**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2017**	SeqNo: **2647727**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115298**
Client ID: **CCB**	Batch ID: **R115298**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2017**	SeqNo: **2647738**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115298**
Client ID: **CCB**	Batch ID: **R115298**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2017**	SeqNo: **2647749**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115298**
Client ID: **CCB**	Batch ID: **R115298**	TestNo: **SM4500-NO3**		Analysis Date: **5/16/2017**	SeqNo: **2647757**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.ati-labs.com

Time start: 05-16-2017 19:24
Time end: 05-16-2017 22:13

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	21:33:53	0.0010		0.0230
2	<BLANK>	21:34:54	0.0018		0.0232
3	<CAL1>	21:35:48	-0.0017	[0]	0.0223
4	<CAL2>	21:36:43	0.0482	[0.05]	0.0353
5	<CAL3>	21:37:44	0.0989	[0.1]	0.0485
6	<CAL4>	21:38:38	0.5080	[0.5]	0.1551
7	<CAL5>	21:39:34	0.9969	[1]	0.2825
8	<CAL6>	21:40:35	1.9997	[2]	0.5438
9	,BLANK,BLANK,1,	21:41:31	0.0632		0.0392
10	,ICV,ICV,1,	21:42:25	0.5114		0.1560
11	,ICB,ICB,1,	21:43:26	0.0164		0.0270
12	,MB-H2O,MBLK,1,	21:44:22	0.0037		0.0237
13	,LCS-H2O,LCS,1,	21:45:22	0.5018		0.1535
14	,N024090-001C,SAMP,1,	21:46:17	0.0678		0.0404
15	,N024090-001CDUP,DUP,1,	21:47:12	0.0590		0.0381
16	,N024090-001CMS,MS,1,	21:48:08	0.5433		0.1643
17	,N024090-001CMSD,MSD,1,	21:49:08	0.5471		0.1653
18	,N024089-007C,SAMP,2,	21:50:04	0.9297		0.2650
19	,N024090-003C,SAMP,100,	21:51:05	0.7501		0.2182
20	,N024090-005C,SAMP,2,	21:51:59	1.3653		0.3785
21	,BLANK,BLANK,1,	21:52:55	0.0283		0.0301
22	,CCV-1,CCV,1,	21:53:56	0.4972		0.1523
23	,CCB-1,CCB,1,	21:54:51	0.0168		0.0271
24	,N024090-006C,SAMP,2,	21:55:51	1.2555		0.3499
25	,N024090-007C,SAMP,1,	21:56:47	0.0502		0.0358
26	,N024090-008C,SAMP,10,	21:57:30	1.1707		0.3278

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			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N024090-009C,SAMP,10,	21:58:18	1.1753		0.3290
28	,N024090-011C,SAMP,1,	21:59:02	0.0690		0.0407
29	,N024106-001C,SAMP,10,	21:59:50	1.3024		0.3621
30	,N024106-002C,SAMP,10,	22:00:33	0.8142		0.2349
31	,N024106-003C,SAMP,5,	22:01:22	1.6543		0.4538
32	,N024106-004C,SAMP,2,	22:02:04	0.0793		0.0434
33	,BLANK,	22:02:48	0.0064		0.0244
34	,CCV-2,CCV,1,	22:03:36	0.5199		0.1582
35	,CCB-2,CCB,1,	22:04:19	0.0083		0.0249
36	,N024106-005C,SAMP,2,	22:05:01	0.0271		0.0298
37	,N024106-006C,SAMP,20,	22:05:50	1.3146		0.3653
38	,N024106-007C,SAMP,2,	22:06:32	0.0505		0.0359
39	,N024107-001D,SAMP,1,	22:07:16	0.0133		0.0262
40	,N024107-002D,SAMP,~~5,~~ 10	22:08:05	0.2950		0.0996
41	,BLANK,	22:08:47	0.0041		0.0238
42	,CCV-3,CCV,1,	22:09:36	0.4888		0.1501
43	,CCV-3,CCV,1, not used	22:10:18	0.5203		0.1583
44	,CCB-3,CCB,1,	22:11:01	0.0079		0.0248

RB 05/17/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/16/17
Time Analyzed: 07:24 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170502E
Color reagent: R170502F
2% Copper Sulfate: R170502D
Ammonium Hydroxide: CINV-170424A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N024090-001C		8.07						
2)	N024090-003C		8.51						
3)	N024090-005C		7.30						
4)	N024090-006C		7.94						
5)	N024090-007C		8.30						
6)	N024090-008C		6.98						
7)	N024090-009C		7.93						
8)	N024090-011C		7.04						
9)	N024106-001C		7.90						
10)	N024106-002C		7.66						
11)	N024106-003C		8.37						
12)	N024106-004C		7.96						
13)	N024106-005C		7.50						
14)	N024106-006C		6.17						
15)	N024106-007C		6.99						
16)	N024107-001D		8.33						
17)	N024107-002D		6.68						
18)									
19)									
20)									
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/17/17

STANDARDS LOG

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.269
www.assetlaboratories.com

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact	Initials
2/11/16	Bromide, 1000 ppm	ISSTI602111 J	1000 ppm	Absolute Standards	010816	2/11/16	2/12/16	1/8/19	L
	Nitrate as N, 1000 ppm	J			061215			6/12/18	
	Phosphate as P, 1000 ppm	K			111115			11/11/18	
	Sulfate, 1000 ppm	L			010516			1/5/18	
2/16/16	EPA 1664 STD (LCS/MSD)	ISSTI602116A	40000 ppm	ULTRA SCIENTIFIC	CP-0013	2/16/16	3/18/16	2/28/19	LSR
4/26/16	EPA 1664 STD (LCS/MSD)	ISSTI604126A	40000 ppm each	Ultra Scientific	CP-0013	4/26/16	4/27/16	2/28/19	L
4/28/16	Hexadecane & Stearic Acid	ISSTI604128A	4000 ppm each	Accustandard	216011674	4/28/16	6/30/16	1/14/16	L
		B					7/5/16		
		C					7/21/16		
		D					7/25/16		
		E					7/28/16		
6/6/16	1000 ppm KHP (TOC I)	ISSTI606116A	1000 ppm	CPI	166197	6/6/16	06/14/16	12/31/2019	LSR
6/9/16	1000 ppm Carbon as TOC	ISSTI606109A	1000 ppm	High Purity	160636	6/9/16	06/14/16	12/03/2019	LSR
7/29/16	Hexadecane & Stearic Acid	ISSTI607295A	4000 ppm each	Accustandard	215121209	7/29/16	8/15/16	12/17/25	LSR
		B					9/19/16		
		C					9/22/16		
		D					10/3/16		
		E					8/2/16		
	EPA 1664 STD (LCS/MSD)	F		Ultra Scientific	CP-0014		8/21/16	2/28/19	

Advanced Technology Laboratories-Las Vegas
Logbook #1

Inorganics Stock Standard Logbook

Date	Stock STD: STD Name	Stock Code	Conc.	Supplier	Lot #	Date Rec'd	Date Opened	Exp Date: Stock/Manufact	Initials
8/17/16	Fluoride, 1000 ppm	ISST-160817A	1000 ppm	ERA	240915	8/17/16	8/18/16	Sept, 2017	MG
	Chloride, 1000 ppm	ISST-160817B	1000 ppm	ERA	140915	"		Sept, 2017	
	Nitrite as N, 1000 ppm	ISST-160817C	1000 ppm	ERA	090516			May, 2018	
	Bromide, 1000 ppm	ISST-160817D			141015			Oct, 2017	
	Nitrate as N, 1000 ppm	ISST-160817E			270415			"	
	Phosphate as P, 1000 ppm	ISST-160817F			180116			Jan, 2018	
	Sulfate, 1000 ppm	ISST-160817G			210316			Mar, 2018	
	Hexavalent Chromium, 1000 ppm	ISST-160817H			040416		8/18/16	Apr, 2019	
10/3/16	EPA 1664 STD, (MS/MSD)	ISST161003A	4000 ppm	ULTRA SCIENTIFIC	CP-4210	10/3/16	10/10/16	9/30/19	LSR
10/4/16	Hexadecane & Stearic Acid	ISST161004A	4000 ppm	ACCU STANDARD	215121209	10/4/16	10/14/16	12/17/25	LSR
		B					11/1/16		
		C					11/18/16		
		D					11/29/16		
		E							
12/6/16	EPA 1664 STD	ISST161206A	4000 ppm	ULTRA SCIENTIFIC	CP-4210	12/6/16 LAE	9/20/19	9/30/19	LSR
12/8/16	Hexadecane & Stearic Acid	ISST161208A	4000 ppm	ACCU STANDARD	215121209	12/8/16		12/17/25	LSR
		B							
		C							
		D							

CHEMICAL INVENTORY LOG

Inventory Code CINV	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
~~CINV 140212A~~	Sodium Sulfate, anhydrous	EMD	WF03H	99.02	1/22/14			STF	#6912
CINV 140206A	Zinc Acetate 2N	Ricca	1401B21	—	2/5/14		01/16	DS	#6914
CINV 140206B	2N Zinc Acetate	Ricca	1401B21	—	2/5/14		01/16	DS	
CINV-140211A	Mercury II oxide	Alfa Aesar	F22I27	99.6%	2/11/14			mc	
B	Pyridine, ACS, 99.0% Liquid	Alfa Aesar	D05Z888	99.0%	2/11/14			mc	
C	Ethanol, Alcohol Reagent	Alfa Aesar	I17Y018	94-96%	2/11/14			mc	
D	Copper II sulfate pentahydrate	Alfa Aesar	C26Y031	98-102%	2/11/14	5/20/14	5/20/17	mc	
E	Ammonium Chloride	Alfa Aesar	D29Z044	99.5%	2/11/14	2/19/14	2/19/17	mc/m	
CINV-M0211F	Silver nitrate	Spectrum	1CH0834	≥99.0%	2/11/14			L	
CINV-140213A	1° Turbidity Std. 0.02 NTU	Oakton	C3G5301		2/13/14	2/13/14	2/13/15	mc	
B	20		C3G5U0D						
C	100		C3G5829						
D	800		C3G5735						
CINV-140127A	Phosphoric Acid	EMD	53224335	7, 85.0%	1/27/14	1/28/14	1/28/16	L	
CINV-140217A	Silica Gel (80-200 Mesh)	J.T. Baker	0000532025	—	2/17/14		6/26/20	RLN	#6962
CINV-140218A	Iron (III) nitrate monohydrate	Alfa Aesar	K13Z039	98.0-101%	2/18/14			ml	
B	Phenol, ACS, 99+%, stab. Crystalline		A2820Z0	99+%					
C	Acetic acid, glacial		J10Z048	99.7%		3/24/14	3/24/16		# G975
D	Sodium Hypochlorite		L10Z021	14.5%					
E	Potassium sodium L-tartrate tetrahydrate		C28Z028	99.0-102%					

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-140218F	Methyl Red sodium SALT	Alfa Aesar	J31Z031	-	2/18/14			mi	
G	Ethylenediaminetetraacetic acid disodium magnesium salt hydrate		K10175810	-					
H	Glycerol, ACS, 99.5% Viscous liquid		mi 2/18/14 K19Z027	99.5 %					
I	Potassium cyanide		KZZ010	96.0% min.					
J	Sodium hydrogen phosphate, anhydrous, 99% min., Granular		J16Z014	99.0 % min					
K	N-(1-Naphthyl)ethylenediamine dihydrochloride, ACS, powder		K047031	-		5/20/14	5/20/17		
L	Calmagite, indicator		10169022	-					
CINV-140218M	Sodium Nitroferricyanide, Dihydrate	JT Baker	000005264 6	-	2/18/14			mi	
N	Chloramine-T, Trihydrate	MacRon	00000 562032	-					
CINV-140221A	Sodium Salicylate, 99%	Alfa Aesar	10372041	99 %	2/21/14			mc	
CINV-140224A	Ethylenediaminetetraacetic acid disodium SALT dihydrate, ACS, 99-101 %	Alfa Aesar	A18Z040	99 - 101 %	2/24/14	5/20/14	5/20/17	mi	
B	Calcium carbonate		#01Z033	99%					
CINV-140226A	Dichloromethane	Omni Solv	510910	99.96%	02/25/14				Lims BTL# 6916
B									6917
C									6918
D									6919
E									6920
F									6921
G									6922
H									6923

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-150320A	Buffer, pH 2	BDH	1408B19	-	3/20/15		8/2016	LSR	
↓ B	Buffer, pH 12	BDH	4409454	-	3/20/15		9/2015	LSR	
CINV-150323A	N-(1-Naphthyl) ethylenediamine	Alfa Aesar	N03A036	-	3/19/15	5/22/15	5/22/18	2	
↓	dihydrochloride							1	
CINV-150325A	TETRAbutylammonium hydroxide	Macron			3/25/15	3/26/15	3/26/17	PEB	
↓ B	Heptafluorobutyric acid	Alfa Aesar	G07X060	99%	3/25/15	3/26/15	3/26/17	PEB	
CINV-150335C	1,5-diphenylcarbazide	J.T BAKER	0000010030	-	3/25/15	3/25/15	3/25/18	PEB	
CINV-150401A	Sodium Chloride	J.T BAKER		99%	4/1/15	04/14/15	4/14/18	PEB	
CINV-150402A	Hexanes	EMD Chemicals	54308	98.5%	4/2/15	5/22/15	5/22/17	LSR	#7546
↓ B						6/25/15	6/25/17	LSR	#7547
↓ C						7/24/15	7/24/15	LSR	#7548
↓ D	↓	↓	↓	↓	↓	8/28/15	8/28/17	LSR	#7549
CINV-150416A	METHANOL	J.T BAKER	57548	99.8%	4/16/15	5/16/15	5/16/17	PEB	
↓ B	1,5-diphenyl carbazide	J.T. BAKER	0000010030	-	4/16/15	7/20/15	7/20/18	PEB	
CINV-150430A	Conductivity Std, 99996	VWR	CC13489	-	4/30/15	6/10/15	2/20/16	LSR	
CINV-150501A	Ferrous Sulfate	Aqua Solutions	501214	-	5/1/15			LSR	
CINV-150506A	Ammonium Persulfate	JTBaker	162447	≥98.0%	5/6/15		7/8/16	2	
↓ B	↓	BDH	3495C517	-	1	5/8/15	5/8/18	1	
CINV-150511A	Ammonium sulfate	J.T BAKER	86693	99%	5/11/15	5/20/15	5/20/18	PEB	
↓ B	↓	↓	↓	↓	↓			↓	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CIW-160219 E	Ammonium sulfate	J.T BAKER	126292	299%	2/19/16	3/7/16	3/7/19	MEB	
F	"	"	"	"	"	3/24/16	3/24/19	"	
G	"	"	"	"	"	4/7/16	4/7/19	"	
H	"	"	"	"	"			"	
CIW-160309A	Buffer, pH 7	BDH	15128S4	-	3/9/16		11/2017	LSR	
B	Sodium Chloride	JT Baker	3624-19	"	3/9/16			LSR	
C	Boiling Stones	Chemware	5071-6B010	-	3/9/16			LSR	
CIW-160322A	Buffer pH 4	via BDH VWR	15124A49	-	3/22/16		11/2017	LSR	
B	Conductivity Std, 100005 µS/cm	VWR	CC14097	-	3/22/16		9/23/16	LSR	
C	HEXANES	EMD		-	3/22/16			LSR	8388
D	"	"		-	"			LSR	8389
E	"	"		-	"			LSR	8390
F	"	"		-	"			LSR	8391
CIW-160405A	Sulfanilamide	J.T Baker	123372		4/5/16	4/6/16	4/6/19	MEB	
CIW-160406A	Ammonium Sulfate	J.T Baker	126292	≥99%	4/6/16			MEB	
B	"	"	"	"	"			"	
C	"	"	"	"	"			"	
D	"	"	"	"	"			"	
E	Ammonium hydroxide	BDH	7215070	-	"	04/06/16	04/06/18	MEB	
F	"	"	"	-	"			"	

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-161228D	Magnesium Chloride Hexahydrate	VWR	16C524	-	12/28/16			MG	
E	Ammonium Sulfate	Lab chem	F25E-19	-	12/28/16	2/9/17	2/9/20		RBA
F						4/5/17	4/5/20		RBA
G						3/14/17	3/14/20		RBA
H						4/20/17	4/20/20		RBA
I	Methanol	Omni Soly	JU238	99.9%		3/9/17	3/9/19	-	RBA
J	Sulfuric Acid								
~~CINV 1/23~~ MG 1/23/17									
CINV170123A	Ammonium Persulfate	BDH	3056C514	98.0%	1/23/17	1/25/17	1/25/20	MG	
CINV170125A	Phosphoric acid	EMD	5C0350	85%	1/25/17	3/8/17	3/18/19	LEB	
B	Buffer, pH 4	VWR	4610A50	-		4/14/17	9/2018	LSR	
C	Buffer, pH 7		4611C60			4/17/17	10/2018	LSR	
D	Buffer, pH 7 (LCS)	Thermo Scientific	UQ1	-		3/9/17	10/2018	LSR	
E	Conductivity Std, 10,000 uS/cm	Ricca	2611936	-		4/24/17	10/2018	LSR	
F	Conductivity Std, 1413 uS/cm	Mettler Toledo	16G205001	-		3/2/17	7/20/18	LSR	
CINV170215A	Citric Acid Monohydrate	ALFA AESAR	S22C041	99-102%	2/15/17	2/17/17	2/17/20	LEB	
CINV170220A	Sodium Hydrogen Sulfate	Sigma-Aldrich	MKBQ5396V	-	-			HSC	
CINV-170227A	Stannous Chloride	LSS	161216-3C		2/27/16			MG	
CINV-170303A	Conductivity Std 9.76 uS/cm	VWR	CC15405	-	3/3/17	4/12/17	10/17/17	LSR	
CINV-170329A	Conductivity Std, 10,000 uS/cm	VWR	CC15548	-	3/29/17	4/27/17	1/9/18	MG	

Advanced Technology Laboratories-Las Vegas
Logbook #2

CHEMICAL INVENTORY LOG

Inventory Code	Chemical Name	Vendor	Lot #	% Purity	Date Rec'd	Date Opened	Date Expired	Init	Comments
CINV-170329B	conductivity std, 1413 uS/cm	VWR	CC155B6	-	3/29/17			MG	
170329C	conductivity std, 100,000 uS/cm	1	CC156C2	-	1			1	
CINV-170331A	Buffer, pH 10	LABCHEM	G030-04	-	3/31/17		2/1/18	LSR	
CINV-170403A	conductivity std, 100,000 uS/cm	LCS	CC157G5	-	4/3/17			MG	
CINV-170405A	methyl Alcohol	TEDIA	1606070		4/5/17	4/20/17	4/26/17	MG	
170405B									
170405C									
170405D									
170405E									
170405F									
CINV-170410A	Ammonium persulfate	VWR	3056C514	-	4/10/17	4/12/17	4/12/2	MG	
CINV-170413A	Ammonium Hydroxide	Omnitrace	56126	-	4/13/17	4/14/17	4/14/19	MG	(RBA
CINV-170418A	Ammonium Sulfate	BDH	1776C501	99%	4/18/17	5/8/17	5/8/20	RBA	
170418B	Ammonium Sulfate	BDH	1776C501	>99%	4/18/17			RBA	
CINV-170424A	Ammonium Hydroxide	BDH	7216120	-	4/22/17	4/28/17	4/28/19	MG	(RBA
CINV-170428A	Ammonium Hydroxide	OmniTrace	55222	-	4/28/17			RBA	

Reagent Preparation

Reagent Name	Reagent Code	Inventory Chemical Inventory Code	Preparation Wt/Vol of Aliquot	Preparation Final Vol (ml)
20% H_3PO_4	R170502C	CINV-170405A	100mL	500
2% $CuSO_4$	R170502D	CINV-140211D	2g	100
R1 BUFFER	E	R170502D / CINV-160525A CINV-140224A / CINV-170124A	2.5mL / 85g 0.1g / 14mL	1000
R2 COLORING Reagent	F	CINV-150721A / 160405A + -170125A	0.2g / 4g / 17mL	100
TCLP FLUID 1	R170503A	R160725A / 8453	128.6mL / 11.4mL	2000
STLC Fluid	R170503B	8979 / 8902	160g / 250mL	4000
Eluent (Cr^{6+})	R170504A	CINV-161228H / CINV-170413A	66g / 13mL	2000
Post Column Rgt (Cr^{6+})	R170504B	CINV-161228C / 8993 / CINV-161228I	0.5g / 28ml / 100mL	1000
TCLP Fluid 1	R170508A	R160725A / 8453	365.8 / 34.2	6000
STLC Fluid	R170508B	8979 / 8902	320g / 500mL	8000
Eluent (Cr^{6+})	R170508C	CINV-170413A CINV-161228H / CINV-170413A	132g / 26mL	4000
Post Column Rgt (Cr^{6+})	R170508D	CINV-161228C / 8993 / CINV-161228I	0.5g / 28ml / 100mL	1000
Digestion Soln (Cr^{6+})	R170508E	CINV-161205A / 8902	120g / 80g	4000

Reagent Preparation

Preparation		Exp Date			
Final Conc.	Date Prepared	Reagent	Stock/ Manufacturer	Comments	Initials
20%	5/2/17	5/2/18	3/8/19		RBA
2%		5/20/17	5/20/17		
—		5/20/17	5/20/17 ; 9/18/19 5/20/17 ; 4/28/19		
—		6/2/17	5/22/18 ; 4/16/19 3/8/19		
—	5/2/17	5/2/18	7/25/19 ; 12/29/18	pH. 4.94	
—	5/3/17	5/3/19	7/28/17 ; 3/28/20		MG
—	5/4/17	5/4/18	4/20/20 ; 4/28/19		RBA
—	5/4/17	5/9/17	4/11/20 ; 4/29/19 ; 3/9/19		RBA
—	5/8/17	5/8/19	7/25/17 ; 12/29/18		MG
—	5/8/17	5/8/19	7/28/17 ; 3/28/20		
—	5/8/17	5/18/18	4/20/20 ; 5/8/20 ; 4/28/19		RBA
—	5/8/17	5/13/18	4/11/20 ; 4/29/19 ; 3/9/19		RBA
—	5/8/17	6/8/17	4/22/20 ; 2/28/20		RBA

* Check reagent expiration date versus stock/manufacturer's expiration date

Logbook 4

May 26, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024184

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 10, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024184

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

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ASSET Laboratories

Date: *26-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024184
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024184-001A	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-001B	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-001C	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-001D	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-001E	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-002A	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-002B	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-002C	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-002D	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-002E	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-003A	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-003B	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-003C	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-003D	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-003E	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-004A	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-004B	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-004C	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-004D	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-004E	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-005A	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-005B	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-005C	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-005D	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-005E	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-006A	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017
N024184-006B	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017
N024184-006C	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017
N024184-006D	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024184
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024184-006E	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017
N024184-007A	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-007B	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-007C	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-007D	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-007E	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-008A	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-008B	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-008C	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-008D	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-008E	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-009A	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-009B	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-009C	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-009D	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-009E	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-010A	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-010B	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-010C	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-010D	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-010E	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-011A	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-011B	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-011C	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-011D	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-011E	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-012A	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017
N024184-012B	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017
N024184-012C	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017
N024184-012D	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017

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CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024184
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024184-012E	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017
N024184-013A	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-013B	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-013C	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-013D	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-013E	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-014A	SW-1-Q217	Groundwater	5/10/2017 2:15:00 PM	5/10/2017	5/25/2017
N024184-014B	SW-1-Q217	Groundwater	5/10/2017 2:15:00 PM	5/10/2017	5/25/2017
N024184-014C	SW-1-Q217	Groundwater	5/10/2017 2:15:00 PM	5/10/2017	5/25/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW-1-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 2:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N024184-001DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115153**
Client ID: **ZZZZZZ**	Batch ID: **R115153**	TestNo: **EPA 120.1**		Analysis Date: **5/11/2017**	SeqNo: **2640298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	932.000	0.10						925.0	0.754	10	

Sample ID **N024184-014CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115153**
Client ID: **ZZZZZZ**	Batch ID: **R115153**	TestNo: **EPA 120.1**		Analysis Date: **5/11/2017**	SeqNo: **2640319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1032.000	0.10						1026	0.583	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-001

Client Sample ID: C-BNS-Q217
Collection Date: 5/10/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-005

Client Sample ID: MW-921-Q217
Collection Date: 5/10/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-007

Client Sample ID: C-R27-D-Q217
Collection Date: 5/10/2017 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-011

Client Sample ID: R63-Q217
Collection Date: 5/10/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-013

Client Sample ID: MW-923-Q217
Collection Date: 5/10/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-014

Client Sample ID: SW-1-Q217
Collection Date: 5/10/2017 2:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024184-001DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **115152**
Client ID: **ZZZZZZ**	Batch ID: **R115152**	TestNo: **SM4500-H+B**		Analysis Date: **5/11/2017**	SeqNo: **2640268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.320	0.10						8.280	0.482	10	H
Temp. at time of pH Analysis	16.100	0.10						16.40	1.85	10	H

Sample ID **N024185-001CDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **115152**
Client ID: **ZZZZZZ**	Batch ID: **R115152**	TestNo: **SM4500-H+B**		Analysis Date: **5/11/2017**	SeqNo: **2640283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.630	0.10						7.600	0.394	10	H
Temp. at time of pH Analysis	16.400	0.10						16.70	1.81	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C** QC Batch: **62190**					PrepDate **5/11/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C** QC Batch: **62190**					PrepDate **5/11/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511D** QC Batch: **62191**					PrepDate **5/11/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170511D**	QC Batch: **62191**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170511D**	QC Batch: **62191**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511D**	QC Batch: **62191**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	**LCS-62190**	SampType:	**LCS**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/11/2017**	RunNo:	**115155**
Client ID:	**LCSW**	Batch ID:	**62190**	TestNo:	**SM2540D**			Analysis Date:	**5/11/2017**	SeqNo:	**2640361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	969.000	10	1000	0	96.9	80	120				

Sample ID	**MB-62190**	SampType:	**MBLK**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/11/2017**	RunNo:	**115155**
Client ID:	**PBW**	Batch ID:	**62190**	TestNo:	**SM2540D**			Analysis Date:	**5/11/2017**	SeqNo:	**2640362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	**N024184-001DDUP**	SampType:	**DUP**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/11/2017**	RunNo:	**115155**
Client ID:	**ZZZZZZ**	Batch ID:	**62190**	TestNo:	**SM2540D**			Analysis Date:	**5/11/2017**	SeqNo:	**2640365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-62191	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/11/2017	RunNo:	115156
Client ID:	LCSW	Batch ID:	62191	TestNo:	SM2540D			Analysis Date:	5/11/2017	SeqNo:	2640374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	996.000	10	1000	0	99.6	80	120				

Sample ID	MB-62191	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/11/2017	RunNo:	115156
Client ID:	PBW	Batch ID:	62191	TestNo:	SM2540D			Analysis Date:	5/11/2017	SeqNo:	2640375

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N024184-010DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/11/2017	RunNo:	115156
Client ID:	ZZZZZZ	Batch ID:	62191	TestNo:	SM2540D			Analysis Date:	5/11/2017	SeqNo:	2640377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
EPA 218.6							
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 03:09 PM
DISSOLVED METALS BY ICP-MS							
EPA 3010A **EPA 6020**							
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 04:25 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 04:44 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 05:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 05:22 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-006

Client Sample ID: C-I-3-S-Q217
Collection Date: 5/10/2017 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 05:59 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 06:18 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 06:37 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 06:56 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 03:28 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-011

Client Sample ID: R63-Q217
Collection Date: 5/10/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 07:15 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 07:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 08:12 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-014

Client Sample ID: SW-1-Q217
Collection Date: 5/10/2017 2:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 08:31 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R115202**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **LCSW**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.976	0.20	5.000	0	99.5	90	110				

Sample ID **MB-R115202**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **PBW**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N024184-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID **N024184-010ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N024184-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110	1.033	4.57	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024184-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642617

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID	N024184-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642619

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID	N024184-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642621

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Sample ID	N024184-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642623

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	90	110				

Sample ID	N024184-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642625

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024184-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642629

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID	N024184-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.112	0.20	1.000	0.1036	101	90	110				

Sample ID	N024184-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642633

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID	N024184-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642635

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID	N024184-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642637

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024184-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N024184-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N024184-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642645

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62184	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	PBW	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645021

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62184	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	LCSW	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645022

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.071	1.0	10.00	0	90.7	85	115				

Sample ID	N024160-013B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.830	1.0	10.00	2.099	87.3	75	125				

Sample ID	N024160-013B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645032

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.672	1.0	10.00	2.099	85.7	75	125	10.83	1.47	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *26-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.58	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.52	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.52	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.51	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.49	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-012

Client Sample ID: R-19-Q217
Collection Date: 5/10/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170518C**	QC Batch: **R115325**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	5/18/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170518C**	QC Batch: **R115325**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	5/18/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115324	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115324		
Client ID:	PBW	Batch ID:	R115324	TestNo:	SM4500-NO3			Analysis Date:	5/17/2017	SeqNo:	2653025		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	ND	0.050											

Sample ID	LCS-R115324	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115324		
Client ID:	LCSW	Batch ID:	R115324	TestNo:	SM4500-NO3			Analysis Date:	5/17/2017	SeqNo:	2653026		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.540	0.050	0.5000	0	108	85	115						

Sample ID	N024171-001KDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115324		
Client ID:	ZZZZZZ	Batch ID:	R115324	TestNo:	SM4500-NO3			Analysis Date:	5/17/2017	SeqNo:	2653028		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.248	0.050						0.2574	3.68	20			

Sample ID	N024171-001KMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115324		
Client ID:	ZZZZZZ	Batch ID:	R115324	TestNo:	SM4500-NO3			Analysis Date:	5/17/2017	SeqNo:	2653029		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.724	0.050	0.5000	0.2574	93.2	75	125						

Sample ID	N024171-001KMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115324		
Client ID:	ZZZZZZ	Batch ID:	R115324	TestNo:	SM4500-NO3			Analysis Date:	5/17/2017	SeqNo:	2653030		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual		
Nitrate/Nitrite as N	0.847	0.050	0.5000	0.2574	118	75	125	0.7235	15.7	20			

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115325	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	PBW	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648866

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115325	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	LCSW	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648867

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.546	0.050	0.5000	0	109	85	115				

Sample ID	N024184-012EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.440	0.050						0.4479	1.76	20	

Sample ID	N024184-012EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648870

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.893	0.050	0.5000	0.4479	89.1	75	125				

Sample ID	N024184-012EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.910	0.050	0.5000	0.4479	92.4	75	125	0.8934	1.82	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-001

Client Sample ID: C-BNS-Q217
Collection Date: 5/10/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 05:25 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	53	1.8	20		ug/L	1	5/18/2017 05:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 05:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	46	1.8	20		ug/L	1	5/18/2017 05:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	26	1.8	20		ug/L	1	5/13/2017 05:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	40	1.8	20		ug/L	1	5/18/2017 06:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 05:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	53	1.8	20		ug/L	1	5/18/2017 06:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-005

Client Sample ID: MW-921-Q217
Collection Date: 5/10/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:12 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	51	1.8	20		ug/L	1	5/18/2017 06:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-006

Client Sample ID: C-I-3-S-Q217
Collection Date: 5/10/2017 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:17 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	32	1.8	20		ug/L	1	5/18/2017 06:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-007

Client Sample ID: C-R27-D-Q217
Collection Date: 5/10/2017 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:22 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	39	1.8	20		ug/L	1	5/18/2017 06:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-008

Client Sample ID: C-R27-S-Q217
Collection Date: 5/10/2017 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:27 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	5/18/2017 06:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-009

Client Sample ID: C-R22A-D-Q217
Collection Date: 5/10/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	34	1.8	20		ug/L	1	5/13/2017 06:32 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	43	1.8	20		ug/L	1	5/18/2017 06:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-010

Client Sample ID: C-R22A-S-Q217
Collection Date: 5/10/2017 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:37 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	36	1.8	20		ug/L	1	5/18/2017 06:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	57	1.8	20		ug/L	1	5/13/2017 06:41 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	31	1.8	20		ug/L	1	5/18/2017 06:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-012

Client Sample ID: R-19-Q217
Collection Date: 5/10/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	68	1.8	20		ug/L	1	5/18/2017 07:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-013

Client Sample ID: MW-923-Q217
Collection Date: 5/10/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	33	1.8	20		ug/L	1	5/18/2017 07:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-62198**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2017**	RunNo: **115216**
Client ID: **PBW**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-62198**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2017**	RunNo: **115216**
Client ID: **LCSW**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.376	20	100.0	0	102	85	115				

Sample ID **N024160-013B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2017**	RunNo: **115216**
Client ID: **ZZZZZZ**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	127.373	20	100.0	25.72	102	75	125				

Sample ID **N024160-013B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2017**	RunNo: **115216**
Client ID: **ZZZZZZ**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	125.691	20	100.0	25.72	100	75	125	127.4	1.33	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-62241	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	PBW	Batch ID:	62241	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648686

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	11.934	20									

Sample ID	LCS-62241	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	LCSW	Batch ID:	62241	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.632	20	100.0	0	109	85	115				

Sample ID	N024184-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	ZZZZZZ	Batch ID:	62241	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648771

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	142.466	20	100.0	52.85	89.6	75	125				

Sample ID	N024184-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	ZZZZZZ	Batch ID:	62241	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648772

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	142.826	20	100.0	52.85	90.0	75	125	142.5	0.253	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**				PrepDate	**5/11/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 04:04 PM
Barium	120	0.070	1.0		µg/L	1	5/13/2017 04:04 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:04 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/13/2017 04:04 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/13/2017 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-002

Client Sample ID: C-TAZ-D-Q217
Collection Date: 5/10/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	1.9	0.025	0.10		µg/L	1	5/13/2017 04:10 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:10 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:10 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:10 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/13/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**				PrepDate	**5/11/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 04:15 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:15 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:15 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:15 PM
Selenium	1.3	0.028	0.50		µg/L	1	5/15/2017 06:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-004

Client Sample ID: C-I-3-D-Q217
Collection Date: 5/10/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.0	0.025	0.10		µg/L	1	5/13/2017 04:21 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:21 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:21 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:21 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/15/2017 07:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-005

Client Sample ID: MW-921-Q217
Collection Date: 5/10/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	1.9	0.025	0.10		µg/L	1	5/13/2017 04:38 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:38 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:38 PM
Molybdenum	4.8	0.039	0.50		µg/L	1	5/13/2017 04:38 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/15/2017 07:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**				PrepDate	**5/11/2017**	Analyst: **CEI**
Arsenic	2.0	0.025	0.10		µg/L	1	5/13/2017 04:43 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:43 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:43 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/13/2017 04:43 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/15/2017 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-007

Client Sample ID: C-R27-D-Q217
Collection Date: 5/10/2017 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.0	0.025	0.10		µg/L	1	5/13/2017 04:49 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:49 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:49 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:49 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/13/2017 04:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-008

Client Sample ID: C-R27-S-Q217
Collection Date: 5/10/2017 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	1.9	0.025	0.10		µg/L	1	5/13/2017 04:54 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:54 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:54 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:54 PM
Selenium	1.2	0.028	0.50		µg/L	1	5/15/2017 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-009

Client Sample ID: C-R22A-D-Q217
Collection Date: 5/10/2017 10:30:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_170513E** QC Batch: **62184** PrepDate **5/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 05:00 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 05:00 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:00 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 05:00 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/15/2017 07:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**				PrepDate	**5/11/2017**	Analyst: **CEI**
Arsenic	2.0	0.025	0.10		µg/L	1	5/13/2017 05:06 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 05:06 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:06 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 05:06 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/15/2017 07:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-011

Client Sample ID: R63-Q217
Collection Date: 5/10/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 05:11 PM
Barium	120	0.070	1.0		µg/L	1	5/13/2017 05:11 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:11 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/13/2017 05:11 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/15/2017 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**		Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 05:17 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 05:17 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:17 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/13/2017 05:17 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/13/2017 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-013

Client Sample ID: MW-923-Q217
Collection Date: 5/10/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 05:22 PM
Barium	120	0.070	1.0		µg/L	1	5/13/2017 05:22 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:22 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/13/2017 05:22 PM
Selenium	1.3	0.028	0.50		µg/L	1	5/13/2017 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62184**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115235**
Client ID: **PBW**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2645118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62184**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115235**
Client ID: **LCSW**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2645119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.161	0.10	10.00	0	91.6	85	115				
Barium	96.142	1.0	100.0	0	96.1	85	115				
Manganese	94.935	0.50	100.0	0	94.9	85	115				
Molybdenum	8.631	0.50	10.00	0	86.3	85	115				
Selenium	8.635	0.50	10.00	0	86.3	85	115				

Sample ID **N024160-013B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115235**
Client ID: **ZZZZZZ**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2645128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.745	0.10	10.00	4.020	87.2	75	125				
Manganese	92.976	0.50	100.0	0.9406	92.0	75	125				
Molybdenum	14.777	0.50	10.00	4.399	104	75	125				
Selenium	8.086	0.50	10.00	0.08523	80.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024160-013B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115235
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645129

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.822	0.10	10.00	4.020	88.0	75	125	12.74	0.609	20	
Manganese	91.905	0.50	100.0	0.9406	91.0	75	125	92.98	1.16	20	
Molybdenum	14.707	0.50	10.00	4.399	103	75	125	14.78	0.469	20	
Selenium	8.008	0.50	10.00	0.08523	79.2	75	125	8.086	0.970	20	

Sample ID	N024160-013B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115269
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/15/2017	SeqNo:	2646241

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	218.562	5.0	100.0	121.7	96.9	75	125				

Sample ID	N024160-013B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115269
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/15/2017	SeqNo:	2646242

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	218.335	5.0	100.0	121.7	96.6	75	125	218.6	0.104	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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P: 702.307.2659 F: 702.307.2691
California: 13060 Artesia Blvd., Ste C, Cerritos, CA 90703
P. 562.219.7435 F:562.219.7436
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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: [illegible]	Address:	Geotracker	RWQCB ✓	1. Chilled ✓
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	Labspec	CalTrans	2. Headspace ✓
Submitted By: Jason Mahn		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Project Manager	Phone: 916-786-3302 Fax	P O.#	Specify: RWQCB	LEVEL IV	4. Seal Present
				Regulatory	5. IR number 2
			Global ID	Specify State:	6. Method of Cooling: ICE
					Sample Temp: 1.1, 2.7, 1.8 °C

Signature: [signature] Date: 5/10/17
I hereby authorize ASSET Labs to perform the tests indicated below

Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Signature: [signature] Date: 5/10/17

Project Name: PG&E Topock - RMP

Project Number: RC000753.0801

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Courier: ASSET

Tracking No.

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Field QC Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Dissolved metals (SW6010B/SW6020Adis) FF HNO3 Cr	Dissolved metals (SW6010B/SW6020Adis) FF HNO3 Ca Mg K Na B	Dissolved metals (SW6010B/SW6020Adis) FF HNO3 As Mn Fe Se Mo Ba	Total metals (SW6010B) HNO3 Fe	Anions (E300.0): Br Cl SO4	Specific Conductance (E120.1)	pH (SM4500H8)	TDS (SM2540C)	Alkalinity (Total reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate: H2SO4	Turn Around Time	No of Container	Container Type	PRESERVATION	Remarks
						3x250 mL poly		500 mL poly		500 mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
1	N024184 - 01	C-BNS-Q217	5/10/2017	1115		X		X		X	X		X	X			X	X	E	7	P	BNS	
2	- 02	C-TAZ-D-Q217	5/10/2017	0825		X		X		X	X		X	X			X	X	E	7	P	BNS	
3	- 03	C-TAZ-S-Q217	5/10/2017	0845		X		X		X	X		X	X			X	X	E	7	P	BNS	
4	- 04	C-I-3-D-Q217	5/10/2017	0925		X		X		X	X		X	X			X	X	E	7	P	BNS	
5	- 05	MW-921-Q217	5/10/2017	0935		X		X		X	X		X	X			X	X	E	7	P	BNS	
6	- 06	C-I-3-S-Q217	5/10/2017	0940		X		X		X	X		X	X			X	X	E	7	P	BNS	
7	- 07	C-R27-D-Q217	5/10/2017	1140		X		X		X	X		X	X			X	X	E	7	P	BNS	
8	- 08	C-R27-S-Q217	5/10/2017	1205		X		X		X	X		X	X			X	X	E	7	P	BNS	
9	- 09	C-R22A-D-Q217	5/10/2017	1030		X		X		X	X		X	X			X	X	E	7	P	BNS	
10	- 10	C-R22A-S-Q217	5/10/2017	1050		X		X		X	X		X	X			X	X	E	7	P	BNS	
11	- 11	R63-Q217	5/10/2017	1000		X		X		X	X		X	X			X	X	E	7	P	BNS	
12	- 12	R-19-Q217	5/10/2017	1230		X		X		X	X		X	X			X	X	E	7	P	BNS	
13	- 13	MW-923-Q217	5/10/2017	855		X		X		X	X		X	X			X	X	E	7	P	BNS	
14	- 14	SW-1-Q217	5/10/2017	1415		X		X					X	X					E	5	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time:	Relinquished by (Signature and Printed Name)	Date/Time:
[signature]	5/10/17 1620	MBCARTIN [signature]	5/10/17 1619
[signature]	5/10/17 @ 1723	[signature]	5/10/17 @ 1923

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3.00PM.

Special Instruction:

Terms
1 All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2 Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=25%
3 Custom EDD formats will be an additional 3% of the total project price
4 Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price
5 Trip Blanks and Equipment Blanks are billable sample
6 Asset Laboratories is not responsible for samples collected using incorrect methodology
7 Terms are net 30 days
8 All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9 For subcontract analyses, TAT and Surcharges will vary

Preservatives:				Container Type:		
H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/10/2017	Workorder:	N024184
Rep sample Temp (Deg C):	1.1/2.7/1.8	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

For:

Checklist Completed By: MBC 5/19/2017

Reviewed By: MBC 5/19/2017

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-001A	C-BNS-Q217	5/10/2017 11:15:00 AM	5/24/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-001B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-001C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-001D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-001E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-002A	C-TAZ-D-Q217	5/10/2017 8:25:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-002B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-002C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-002D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-002D	C-TAZ-D-Q217	5/10/2017 8:25:00 AM	5/24/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-002E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-003A	C-TAZ-S-Q217	5/10/2017 8:45:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-003B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-003C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-003D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-003E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-004A	C-I-3-D-Q217	5/10/2017 9:25:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-004B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-004B	C-I-3-D-Q217	5/10/2017 9:25:00 AM	5/24/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-004C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-004D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-004E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-005A	MW-921-Q217	5/10/2017 9:35:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-005B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-005C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-005D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-005E	MW-921-Q217	5/10/2017 9:35:00 AM	5/24/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-006A	C-I-3-S-Q217	5/10/2017 9:40:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-006B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-006C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-006D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-006E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-007A	C-R27-D-Q217	5/10/2017 11:40:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-007B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-007C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-007C	C-R27-D-Q217	5/10/2017 11:40:00 AM	5/24/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-007D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-007E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-008A	C-R27-S-Q217	5/10/2017 12:05:00 PM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-008B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-008C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-008D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-008E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-009A	C-R22A-D-Q217	5/10/2017 10:30:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-009B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-009B	C-R22A-D-Q217	5/10/2017 10:30:00 AM	5/24/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-009C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-009D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-009E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-010A	C-R22A-S-Q217	5/10/2017 10:50:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-010B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-010C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-010D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-010D	C-R22A-S-Q217	5/10/2017 10:50:00 AM	5/24/2017	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N024184-010E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-011A	R63-Q217	5/10/2017 10:00:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-011B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-011C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-011D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-011E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-012A	R-19-Q217	5/10/2017 12:30:00 PM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-012B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-012C	R-19-Q217	5/10/2017 12:30:00 PM	5/24/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-012D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-012E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-013A	MW-923-Q217	5/10/2017 8:55:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-013B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-013C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-013D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-013E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-014A	SW-1-Q217	5/10/2017 2:15:00 PM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-014B	SW-1-Q217	5/10/2017 2:15:00 PM	5/24/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-014C			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
N024184-015A	FOLDER	5/24/2017	5/24/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/24/2017		Folder	Folder	☐	☐	☐	LAB
			5/24/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N024184

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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May 26, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024184

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 10, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucao for

Puri Romualdo
Laboratory Director

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CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *26-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024184
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024184-001A	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-001B	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-001C	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-001D	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-001E	C-BNS-Q217	Groundwater	5/10/2017 11:15:00 AM	5/10/2017	5/25/2017
N024184-002A	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-002B	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-002C	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-002D	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-002E	C-TAZ-D-Q217	Groundwater	5/10/2017 8:25:00 AM	5/10/2017	5/25/2017
N024184-003A	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-003B	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-003C	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-003D	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-003E	C-TAZ-S-Q217	Groundwater	5/10/2017 8:45:00 AM	5/10/2017	5/25/2017
N024184-004A	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-004B	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-004C	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-004D	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-004E	C-I-3-D-Q217	Groundwater	5/10/2017 9:25:00 AM	5/10/2017	5/25/2017
N024184-005A	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-005B	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-005C	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-005D	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-005E	MW-921-Q217	Groundwater	5/10/2017 9:35:00 AM	5/10/2017	5/25/2017
N024184-006A	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017
N024184-006B	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017
N024184-006C	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017
N024184-006D	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024184
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024184-006E	C-I-3-S-Q217	Groundwater	5/10/2017 9:40:00 AM	5/10/2017	5/25/2017
N024184-007A	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-007B	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-007C	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-007D	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-007E	C-R27-D-Q217	Groundwater	5/10/2017 11:40:00 AM	5/10/2017	5/25/2017
N024184-008A	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-008B	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-008C	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-008D	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-008E	C-R27-S-Q217	Groundwater	5/10/2017 12:05:00 PM	5/10/2017	5/25/2017
N024184-009A	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-009B	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-009C	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-009D	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-009E	C-R22A-D-Q217	Groundwater	5/10/2017 10:30:00 AM	5/10/2017	5/25/2017
N024184-010A	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-010B	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-010C	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-010D	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-010E	C-R22A-S-Q217	Groundwater	5/10/2017 10:50:00 AM	5/10/2017	5/25/2017
N024184-011A	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-011B	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-011C	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-011D	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-011E	R63-Q217	Groundwater	5/10/2017 10:00:00 AM	5/10/2017	5/25/2017
N024184-012A	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017
N024184-012B	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017
N024184-012C	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017
N024184-012D	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024184
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024184-012E	R-19-Q217	Groundwater	5/10/2017 12:30:00 PM	5/10/2017	5/25/2017
N024184-013A	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-013B	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-013C	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-013D	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-013E	MW-923-Q217	Groundwater	5/10/2017 8:55:00 AM	5/10/2017	5/25/2017
N024184-014A	SW-1-Q217	Groundwater	5/10/2017 2:15:00 PM	5/10/2017	5/25/2017
N024184-014B	SW-1-Q217	Groundwater	5/10/2017 2:15:00 PM	5/10/2017	5/25/2017
N024184-014C	SW-1-Q217	Groundwater	5/10/2017 2:15:00 PM	5/10/2017	5/25/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	920	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-008

Client Sample ID: C-R27-S-Q217
Collection Date: 5/10/2017 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	930	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-014

Client Sample ID: SW-1-Q217
Collection Date: 5/10/2017 2:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	1000	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	N024184-001DDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	115153
Client ID:	ZZZZZZ	Batch ID:	R115153	TestNo:	EPA 120.1			Analysis Date:	5/11/2017	SeqNo:	2640298

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	932.000	0.10						925.0	0.754	10	

Sample ID	N024184-014CDUP	SampType:	DUP	TestCode:	120.1_WPGE	Units:	umhos/cm	Prep Date:		RunNo:	115153
Client ID:	ZZZZZZ	Batch ID:	R115153	TestNo:	EPA 120.1			Analysis Date:	5/11/2017	SeqNo:	2640319

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1032.000	0.10						1026	0.583	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-001

Client Sample ID: C-BNS-Q217
Collection Date: 5/10/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-004

Client Sample ID: C-I-3-D-Q217
Collection Date: 5/10/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-005

Client Sample ID: MW-921-Q217
Collection Date: 5/10/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-006

Client Sample ID: C-I-3-S-Q217
Collection Date: 5/10/2017 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-007

Client Sample ID: C-R27-D-Q217
Collection Date: 5/10/2017 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-009

Client Sample ID: C-R22A-D-Q217
Collection Date: 5/10/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-010

Client Sample ID: C-R22A-S-Q217
Collection Date: 5/10/2017 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-011

Client Sample ID: R63-Q217
Collection Date: 5/10/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-012

Client Sample ID: R-19-Q217
Collection Date: 5/10/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.2	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-013

Client Sample ID: MW-923-Q217
Collection Date: 5/10/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-014

Client Sample ID: SW-1-Q217
Collection Date: 5/10/2017 2:15:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024184-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **115152**
Client ID: **ZZZZZZ** Batch ID: **R115152** TestNo: **SM4500-H+B** Analysis Date: **5/11/2017** SeqNo: **2640268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.320	0.10						8.280	0.482	10	H
Temp. at time of pH Analysis	16.100	0.10						16.40	1.85	10	H

Sample ID **N024185-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **115152**
Client ID: **ZZZZZZ** Batch ID: **R115152** TestNo: **SM4500-H+B** Analysis Date: **5/11/2017** SeqNo: **2640283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.630	0.10						7.600	0.394	10	H
Temp. at time of pH Analysis	16.400	0.10						16.70	1.81	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-001

Client Sample ID: C-BNS-Q217
Collection Date: 5/10/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170511C** QC Batch: **62190**				PrepDate	**5/11/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511C**	QC Batch: **62190**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511D**	QC Batch: **62191**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511D** QC Batch: **62191**					PrepDate **5/11/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:				
	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170511D**	QC Batch: **62191**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170511D**	QC Batch: **62191**				PrepDate	**5/11/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/11/2017 08:11 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	**LCS-62190**	SampType:	**LCS**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/11/2017**	RunNo:	**115155**
Client ID:	**LCSW**	Batch ID:	**62190**	TestNo:	**SM2540D**			Analysis Date:	**5/11/2017**	SeqNo:	**2640361**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	969.000	10	1000	0	96.9	80	120				

Sample ID	**MB-62190**	SampType:	**MBLK**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/11/2017**	RunNo:	**115155**
Client ID:	**PBW**	Batch ID:	**62190**	TestNo:	**SM2540D**			Analysis Date:	**5/11/2017**	SeqNo:	**2640362**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	**N024184-001DDUP**	SampType:	**DUP**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/11/2017**	RunNo:	**115155**
Client ID:	**ZZZZZZ**	Batch ID:	**62190**	TestNo:	**SM2540D**			Analysis Date:	**5/11/2017**	SeqNo:	**2640365**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-62191	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/11/2017	RunNo:	115156
Client ID:	LCSW	Batch ID:	62191	TestNo:	SM2540D			Analysis Date:	5/11/2017	SeqNo:	2640374

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	996.000	10	1000	0	99.6	80	120				

Sample ID	MB-62191	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/11/2017	RunNo:	115156
Client ID:	PBW	Batch ID:	62191	TestNo:	SM2540D			Analysis Date:	5/11/2017	SeqNo:	2640375

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N024184-010DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/11/2017	RunNo:	115156
Client ID:	ZZZZZZ	Batch ID:	62191	TestNo:	SM2540D			Analysis Date:	5/11/2017	SeqNo:	2640377

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 03:09 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 04:25 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 04:44 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 05:03 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B**	QC Batch: **R115202**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 05:22 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170513D**	QC Batch: **62184**			PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 05:59 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:43 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 06:18 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-008

Client Sample ID: C-R27-S-Q217
Collection Date: 5/10/2017 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 06:37 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 04:54 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 06:56 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:00 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 03:28 PM
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 07:15 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:11 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 07:53 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 08:12 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW-1-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 2:15:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170512B** QC Batch: **R115202**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/12/2017 08:31 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R115202**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **LCSW**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642608**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.976	0.20	5.000	0	99.5	90	110				

Sample ID **MB-R115202**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **PBW**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642609**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N024184-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.033	0.20	1.000	0	103	90	110				

Sample ID **N024184-010ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N024184-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642616**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.081	0.20	1.000	0	108	90	110	1.033	4.57	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024184-010AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642617**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.089	0.20	1.000	0	109	90	110				

Sample ID **N024184-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642619**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.056	0.20	1.000	0	106	90	110				

Sample ID **N024184-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642621**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.040	0.20	1.000	0	104	90	110				

Sample ID **N024184-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642623**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.094	0.20	1.000	0	109	90	110				

Sample ID **N024184-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642625**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024184-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642629

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.060	0.20	1.000	0	106	90	110				

Sample ID	N024184-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642631

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.112	0.20	1.000	0.1036	101	90	110				

Sample ID	N024184-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642633

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.088	0.20	1.000	0	109	90	110				

Sample ID	N024184-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642635

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.044	0.20	1.000	0	104	90	110				

Sample ID	N024184-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642637

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.066	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024184-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642641

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.082	0.20	1.000	0	108	90	110				

Sample ID	N024184-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642643

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.078	0.20	1.000	0	108	90	110				

Sample ID	N024184-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115202
Client ID:	ZZZZZZ	Batch ID:	R115202	TestNo:	EPA 218.6			Analysis Date:	5/12/2017	SeqNo:	2642645

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0	106	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62184	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	PBW	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645021

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62184	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	LCSW	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645022

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.071	1.0	10.00	0	90.7	85	115				

Sample ID	N024160-013B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.830	1.0	10.00	2.099	87.3	75	125				

Sample ID	N024160-013B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645032

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.672	1.0	10.00	2.099	85.7	75	125	10.83	1.47	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-BNS-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-TAZ-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.58	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.52	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-006

Client Sample ID: C-I-3-S-Q217
Collection Date: 5/10/2017 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.52	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 11:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.48	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R27-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:05:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.51	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-R22A-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R63-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 10:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170517C**	QC Batch: **R115324**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.49	0.022	0.050		mg/L	1	5/17/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-19-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170518C**	QC Batch: **R115325**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	5/18/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170518C**	QC Batch: **R115325**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	5/18/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **MB-R115324**	SampType: **MBLK**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **PBW**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **LCS-R115324**	SampType: **LCS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **LCSW**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653026**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.540	0.050	0.5000	0	108	85	115				

Sample ID **N024171-001KDUP**	SampType: **DUP**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **ZZZZZZ**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653028**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.248	0.050						0.2574	3.68	20	

Sample ID **N024171-001KMS**	SampType: **MS**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **ZZZZZZ**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.724	0.050	0.5000	0.2574	93.2	75	125				

Sample ID **N024171-001KMSD**	SampType: **MSD**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **ZZZZZZ**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.847	0.050	0.5000	0.2574	118	75	125	0.7235	15.7	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115325	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	PBW	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648866

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115325	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	LCSW	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648867

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.546	0.050	0.5000	0	109	85	115				

Sample ID	N024184-012EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648869

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.440	0.050						0.4479	1.76	20	

Sample ID	N024184-012EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648870

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.893	0.050	0.5000	0.4479	89.1	75	125				

Sample ID	N024184-012EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115325
Client ID:	ZZZZZZ	Batch ID:	R115325	TestNo:	SM4500-NO3			Analysis Date:	5/18/2017	SeqNo:	2648872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.910	0.050	0.5000	0.4479	92.4	75	125	0.8934	1.82	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-001

Client Sample ID: C-BNS-Q217
Collection Date: 5/10/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 05:25 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	53	1.8	20		ug/L	1	5/18/2017 05:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-002

Client Sample ID: C-TAZ-D-Q217
Collection Date: 5/10/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 05:30 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	46	1.8	20		ug/L	1	5/18/2017 05:57 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-003

Client Sample ID: C-TAZ-S-Q217
Collection Date: 5/10/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	26	1.8	20		ug/L	1	5/13/2017 05:35 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	40	1.8	20		ug/L	1	5/18/2017 06:02 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-D-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:25:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 05:40 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	53	1.8	20		ug/L	1	5/18/2017 06:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-921-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:12 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	51	1.8	20		ug/L	1	5/18/2017 06:29 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-I-3-S-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 9:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:17 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	32	1.8	20		ug/L	1	5/18/2017 06:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-007

Client Sample ID: C-R27-D-Q217
Collection Date: 5/10/2017 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:22 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	39	1.8	20		ug/L	1	5/18/2017 06:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-008

Client Sample ID: C-R27-S-Q217
Collection Date: 5/10/2017 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:27 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	27	1.8	20		ug/L	1	5/18/2017 06:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-009

Client Sample ID: C-R22A-D-Q217
Collection Date: 5/10/2017 10:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	34	1.8	20		ug/L	1	5/13/2017 06:32 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	43	1.8	20		ug/L	1	5/18/2017 06:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-010

Client Sample ID: C-R22A-S-Q217
Collection Date: 5/10/2017 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:37 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	36	1.8	20		ug/L	1	5/18/2017 06:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-011

Client Sample ID: R63-Q217
Collection Date: 5/10/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	57	1.8	20		ug/L	1	5/13/2017 06:41 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	31	1.8	20		ug/L	1	5/18/2017 06:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-012

Client Sample ID: R-19-Q217
Collection Date: 5/10/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:46 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	68	1.8	20		ug/L	1	5/18/2017 07:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-923-Q217
Lab Order:	N024184	**Collection Date:**	5/10/2017 8:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024184-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170513C**	QC Batch: **62198**			PrepDate	**5/12/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/13/2017 06:51 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62241**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	33	1.8	20		ug/L	1	5/18/2017 07:07 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-62198**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2017**	RunNo: **115216**
Client ID: **PBW**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643556**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID **LCS-62198**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2017**	RunNo: **115216**
Client ID: **LCSW**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643557**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.376	20	100.0	0	102	85	115				

Sample ID **N024160-013B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2017**	RunNo: **115216**
Client ID: **ZZZZZZ**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	127.373	20	100.0	25.72	102	75	125				

Sample ID **N024160-013B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/12/2017**	RunNo: **115216**
Client ID: **ZZZZZZ**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	125.691	20	100.0	25.72	100	75	125	127.4	1.33	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-62241	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	PBW	Batch ID:	62241	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648686

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	11.934	20									

Sample ID	LCS-62241	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	LCSW	Batch ID:	62241	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648687

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	108.632	20	100.0	0	109	85	115				

Sample ID	N024184-001C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	ZZZZZZ	Batch ID:	62241	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648771

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	142.466	20	100.0	52.85	89.6	75	125				

Sample ID	N024184-001C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	ZZZZZZ	Batch ID:	62241	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648772

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	142.826	20	100.0	52.85	90.0	75	125	142.5	0.253	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-001

Client Sample ID: C-BNS-Q217
Collection Date: 5/10/2017 11:15:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_170513E** QC Batch: **62184** PrepDate **5/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 04:04 PM
Barium	120	0.070	1.0		µg/L	1	5/13/2017 04:04 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:04 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/13/2017 04:04 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/13/2017 04:04 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-002

Client Sample ID: C-TAZ-D-Q217
Collection Date: 5/10/2017 8:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	1.9	0.025	0.10		µg/L	1	5/13/2017 04:10 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:10 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:10 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:10 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/13/2017 04:10 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-003

Client Sample ID: C-TAZ-S-Q217
Collection Date: 5/10/2017 8:45:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 04:15 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:15 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:15 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:15 PM
Selenium	1.3	0.028	0.50		µg/L	1	5/15/2017 06:58 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-004

Client Sample ID: C-I-3-D-Q217
Collection Date: 5/10/2017 9:25:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.0	0.025	0.10		µg/L	1	5/13/2017 04:21 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:21 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:21 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:21 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/15/2017 07:59 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-005

Client Sample ID: MW-921-Q217
Collection Date: 5/10/2017 9:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	1.9	0.025	0.10		µg/L	1	5/13/2017 04:38 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:38 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:38 PM
Molybdenum	4.8	0.039	0.50		µg/L	1	5/13/2017 04:38 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/15/2017 07:09 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-006

Client Sample ID: C-I-3-S-Q217
Collection Date: 5/10/2017 9:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.0	0.025	0.10		µg/L	1	5/13/2017 04:43 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:43 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:43 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/13/2017 04:43 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/15/2017 07:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-007

Client Sample ID: C-R27-D-Q217
Collection Date: 5/10/2017 11:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.0	0.025	0.10		µg/L	1	5/13/2017 04:49 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:49 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:49 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:49 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/13/2017 04:49 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-008

Client Sample ID: C-R27-S-Q217
Collection Date: 5/10/2017 12:05:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	1.9	0.025	0.10		µg/L	1	5/13/2017 04:54 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 04:54 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 04:54 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 04:54 PM
Selenium	1.2	0.028	0.50		µg/L	1	5/15/2017 07:21 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-009

Client Sample ID: C-R22A-D-Q217
Collection Date: 5/10/2017 10:30:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_170513E** QC Batch: **62184** PrepDate **5/11/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 05:00 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 05:00 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:00 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 05:00 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/15/2017 07:26 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-010

Client Sample ID: C-R22A-S-Q217
Collection Date: 5/10/2017 10:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.0	0.025	0.10		µg/L	1	5/13/2017 05:06 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 05:06 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:06 PM
Molybdenum	4.9	0.039	0.50		µg/L	1	5/13/2017 05:06 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/15/2017 07:32 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-011

Client Sample ID: R63-Q217
Collection Date: 5/10/2017 10:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 05:11 PM
Barium	120	0.070	1.0		µg/L	1	5/13/2017 05:11 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:11 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/13/2017 05:11 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/15/2017 07:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-012

Client Sample ID: R-19-Q217
Collection Date: 5/10/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 05:17 PM
Barium	110	0.070	1.0		µg/L	1	5/13/2017 05:17 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:17 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/13/2017 05:17 PM
Selenium	1.7	0.028	0.50		µg/L	1	5/13/2017 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024184
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024184-013

Client Sample ID: MW-923-Q217
Collection Date: 5/10/2017 8:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170513E**	QC Batch: **62184**			PrepDate	**5/11/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/13/2017 05:22 PM
Barium	120	0.070	1.0		µg/L	1	5/13/2017 05:22 PM
Manganese	ND	0.056	0.50		µg/L	1	5/13/2017 05:22 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/13/2017 05:22 PM
Selenium	1.3	0.028	0.50		µg/L	1	5/13/2017 05:22 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62184**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115235**
Client ID: **PBW**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2645118**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62184**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115235**
Client ID: **LCSW**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2645119**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.161	0.10	10.00	0	91.6	85	115				
Barium	96.142	1.0	100.0	0	96.1	85	115				
Manganese	94.935	0.50	100.0	0	94.9	85	115				
Molybdenum	8.631	0.50	10.00	0	86.3	85	115				
Selenium	8.635	0.50	10.00	0	86.3	85	115				

Sample ID **N024160-013B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/11/2017**	RunNo: **115235**
Client ID: **ZZZZZZ**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2645128**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.745	0.10	10.00	4.020	87.2	75	125				
Manganese	92.976	0.50	100.0	0.9406	92.0	75	125				
Molybdenum	14.777	0.50	10.00	4.399	104	75	125				
Selenium	8.086	0.50	10.00	0.08523	80.0	75	125				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024160-013B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115235
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645129

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.822	0.10	10.00	4.020	88.0	75	125	12.74	0.609	20	
Manganese	91.905	0.50	100.0	0.9406	91.0	75	125	92.98	1.16	20	
Molybdenum	14.707	0.50	10.00	4.399	103	75	125	14.78	0.469	20	
Selenium	8.008	0.50	10.00	0.08523	79.2	75	125	8.086	0.970	20	

Sample ID	N024160-013B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115269
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/15/2017	SeqNo:	2646241

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	218.562	5.0	100.0	121.7	96.9	75	125				

Sample ID	N024160-013B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115269
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/15/2017	SeqNo:	2646242

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	218.335	5.0	100.0	121.7	96.6	75	125	218.6	0.104	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 13060 Artesia Blvd., Ste C, Cerritos, CA 90703
P. 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	Y N
Address: Roseville, CA 95661	Email: [redacted]	Address:	Geotracker	RWQCB ✓	1. Chilled
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	Labspec	CalTrans	2. Headspace
Submitted By: Jason Mahn		Phone: 949-727-1400, ext 200 Fax:	Others ✓	LEVEL III	3. Container Intact
Title: Project Manager	Phone: 916-786-3302 Fax	P.O.#	Specify: RWQCB	LEVEL IV	4. Seal Present
				Regulatory	5. IR number 2
			Global ID	Specify State:	6. Method of Cooling: ICE
					Sample Temp: 1.1, 2.7, 1.8 °C

Signature: [signature] Date: 5/10/17
I hereby authorize ASSET Labs to perform the tests indicated below

Sampled By: Jason Mahn
I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Signature: [signature] Date: 5/10/17

Project Name: PG&E Topock - RMP

Project Number: RC000753.0801

Matrix: Ground x | Sediment | Potable | Soil | NPDES | Other Solid | Surface

Courier: ASSET

Tracking No.

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Field QC Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Dissolved metals (SW6010B/SW6020Adis) FF HNO3 Cr	Dissolved metals (SW6010B/SW6020Adis) FF HNO3 Ca Mg K Na B	Dissolved metals (SW6010B/SW6020Adis) FF HNO3 As Mn Fe Se Mo Ba	Total metals (SW6010B) HNO3 Fe	Anions (E300.0): Br Cl SO4	Specific Conductance (E120.1)	pH (SM4500H8)	TDS (SM2540C)	Alkalinity (Total reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate: H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						3x250 mL poly		500 mL poly		500 mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
1	N024184 - 01	C-BNS-Q217	5/10/2017	1115		X		X		X	X		X	X			X	X	E	7	P	BNS	
2	- 02	C-TAZ-D-Q217	5/10/2017	0825		X		X		X	X		X	X			X	X	E	7	P	BNS	
3	- 03	C-TAZ-S-Q217	5/10/2017	0845		X		X		X	X		X	X			X	X	E	7	P	BNS	
4	- 04	C-I-3-D-Q217	5/10/2017	0925		X		X		X	X		X	X			X	X	E	7	P	BNS	
5	- 05	MW-921-Q217	5/10/2017	0935		X		X		X	X		X	X			X	X	E	7	P	BNS	
6	- 06	C-I-3-S-Q217	5/10/2017	0940		X		X		X	X		X	X			X	X	E	7	P	BNS	
7	- 07	C-R27-D-Q217	5/10/2017	1140		X		X		X	X		X	X			X	X	E	7	P	BNS	
8	- 08	C-R27-S-Q217	5/10/2017	1205		X		X		X	X		X	X			X	X	E	7	P	BNS	
9	- 09	C-R22A-D-Q217	5/10/2017	1030		X		X		X	X		X	X			X	X	E	7	P	BNS	
10	- 10	C-R22A-S-Q217	5/10/2017	1050		X		X		X	X		X	X			X	X	E	7	P	BNS	
11	- 11	R63-Q217	5/10/2017	1000		X		X		X	X		X	X			X	X	E	7	P	BNS	
12	- 12	R-19-Q217	5/10/2017	1230		X		X		X	X		X	X			X	X	E	7	P	BNS	
13	- 13	MW-923-Q217	5/10/2017	855		X		X		X	X		X	X			X	X	E	7	P	BNS	
14	- 14	SW-1-Q217	5/10/2017	1415		X		X					X	X					E	5	P	BNS	

Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/17 1620
Received by (Signature and Printed Name): MBCARTIN [signature] Date/Time: 5/10/17 1619

Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/17 @ 1723
Received by (Signature and Printed Name): [signature] Date/Time: 5/10/17 @ 1723

Relinquished by (Signature and Printed Name): Date/Time:
Received by (Signature and Printed Name): Date/Time:

Turn Around Time (TAT)

- [ ] A = < 24 Hrs or Same Day TAT
- [ ] B = Next Workday
- [ ] C = 2 Workdays
- [ ] D = 3 Workdays
- [x] E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:

Terms
1 All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2 Regular TAT is 5-7 business days; surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=25%
3 Custom EDD formats will be an additional 3% of the total project price
4 Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price
5 Trip Blanks and Equipment Blanks are billable sample
6 Asset Laboratories is not responsible for samples collected using incorrect methodology
7 Terms are net 30 days
8 All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9 For subcontract analyses, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=Zn$(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/10/2017 Workorder: N024184

Rep sample Temp (Deg C): 1.1/2.7/1.8 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

For:

Checklist Completed By: MBC 5/19/2017 Reviewed By: MBC 5/19/2017

ASSET Laboratories

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-001A	C-BNS-Q217	5/10/2017 11:15:00 AM	5/24/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-001B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-001C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-001D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-001E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-002A	C-TAZ-D-Q217	5/10/2017 8:25:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-002B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-002C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-002D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-002D	C-TAZ-D-Q217	5/10/2017 8:25:00 AM	5/24/2017	Groundwater	SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-002E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-003A	C-TAZ-S-Q217	5/10/2017 8:45:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-003B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-003C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-003D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-003E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-004A	C-I-3-D-Q217	5/10/2017 9:25:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-004B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-004B	C-I-3-D-Q217	5/10/2017 9:25:00 AM	5/24/2017	Groundwater	EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-004C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-004D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-004E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-005A	MW-921-Q217	5/10/2017 9:35:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-005B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-005C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-005D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-005E	MW-921-Q217	5/10/2017 9:35:00 AM	5/24/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-006A	C-I-3-S-Q217	5/10/2017 9:40:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-006B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-006C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-006D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-006E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-007A	C-R27-D-Q217	5/10/2017 11:40:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-007B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-007C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-007C	C-R27-D-Q217	5/10/2017 11:40:00 AM	5/24/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-007D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-007E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-008A	C-R27-S-Q217	5/10/2017 12:05:00 PM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-008B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-008C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-008D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-008E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-009A	C-R22A-D-Q217	5/10/2017 10:30:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-009B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-009B	C-R22A-D-Q217	5/10/2017 10:30:00 AM	5/24/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-009C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-009D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-009E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-010A	C-R22A-S-Q217	5/10/2017 10:50:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-010B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-010C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-010D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-010D	C-R22A-S-Q217	5/10/2017 10:50:00 AM	5/24/2017	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N024184-010E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-011A	R63-Q217	5/10/2017 10:00:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-011B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-011C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-011D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-011E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-012A	R-19-Q217	5/10/2017 12:30:00 PM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-012B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-012C	R-19-Q217	5/10/2017 12:30:00 PM	5/24/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-012D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-012E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-013A	MW-923-Q217	5/10/2017 8:55:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024184-013B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-013C			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024184-013D			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/24/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/24/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024184-013E			5/24/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024184-014A	SW-1-Q217	5/10/2017 2:15:00 PM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW

WORK ORDER Summary

26-May-17

WorkOrder: N024184

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024184-014B	SW-1-Q217	5/10/2017 2:15:00 PM	5/24/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024184-014C			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
N024184-015A	FOLDER	5/24/2017	5/24/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/24/2017		Folder	Folder	☐	☐	☐	LAB
			5/24/2017		Folder	Folder	☐	☐	☐	LAB

List of Analyst

ASSET Laboratories Work Order: **N024184**

NAME	TEST METHOD
Claire Ignacio	EPA 6010B, EPA 6020
Ria Abes	EPA 218.6
Ryan Balilu	SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115153 **Analyst:** LSR

ASSET #: N024184 **Date Analyzed:** 5/11/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/~~MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/11/2017

2nd Level Reviewer: 5/24/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 5/10/17 1640

Analyst: LSR

Standard	Std ID	Reading	Comments
9.76	CINW-170303A	9.91 mS/cm @19.3°C	% Rec: (90-110%)
1413	161214B	1427 @19.4°C	
10003	170329A	10090 @19.4°C	
99938	161220J	99400 @19.5°C	

	Sample ID	Matrix	Reading	Comments
1	N024171-001B	H2O	1101 @20.7°C	
2	N024172-001B		1056 @20.6°C	
3	N024173-001B		1287 @20.3°C	
4	N024174-001B		1084 @20.1°C	
5	N024175-001B		1811 @23.1°C	
6	1BDUP		1806 @23.5°C	
7				
8				
9	1413 mS/cm	CINW-170125F	1431 @23.8°C	
10	10000	170125E	10080 @24.0°C	
Dup	99899	161104A	98100 @23.9°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 5/11/17 1010

Analyst: LSR

Standard	Std ID	Reading	Comments
9.76 mS/cm	CINW-170307A	9.72 mS/cm @21.6°C	% Rec: (90-110%)
1413	161214B	1407 @21.8°C	
10000 ~~99938~~ 99582	170329A ~~161220J~~ 170329C	9940 @21.8°C 99100 @21.6°C	

	Sample ID	Matrix	Reading	Comments
1	N024184-001D	H2O	985 @19.2°C	
2	2D		971 @19.5°C	
3	3D		967 @20.3°C	
4	4D		929 @19.6°C	STD CHECK:
5	5D		931 @18.9°C	1413 - CINW170125F
6	6D		943 @19.2°C	= 1463 @20.8°C
7	7D		942 @19.1°C	10000 - CINW170125E
8	8D		944 @19.1°C	= 10400 @21.2°C
9	9D		928 @18.8°C	99899 - CINW161104A
10	10D		930 @18.9°C	= 101200 @21.5°C
Dup	1D DUP		932 @18.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Julia Ramit 5/11/2017

Logbook # 5

Date: 5/11/17 1010

Analyst: LSR

CONT

Standard	Std ID	Reading	Comments
TH: 9.76 mS/cm	CINV-170303A	9.72 mS/cm @ 21.6°C	% Rec: (90-110%)
1413	161214B	1407 @ 21.8°C	
10003	170329A	9940 @ 21.8°C	
99582	170329C	99100 @ 21.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO24184-011D	H2O	953 @ 20.7°C	
2	12D		940 @ 19.7°C	
3	13D	LSR	937 @ 19.6°C	
4	14D C		1026 @ 19.0°C	
5	NO24185-001C		970 @ 18.5°C	
6	NO24184-14C DUP		1032 @ 18.5°C	
7				
8				Julia Ramit 5/11/2017
9	1413 mS/cm	CINV-170125F	1416 @ 20.8°C	
10	10000	170125E	10310 @ 21.3°C	
Dup	99899	161104A	100400 @ 21.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: _____

Analyst: _____

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES
3151 W. Post Road, Las Vegas, NV 89118 P: 702.307.2659 F: 702.307.2691
www.assetlaboratories.com

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115152 **Instrument ID:** pH meter

ASSET #: N024184 **Analyst:** LSR

Date Analyzed: 11-May

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/11/2017

2nd Level Reviewer 5/24/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 5/10/17 1630
Analyst: LKR

Standard	Std ID	pH	Comments
Buffer 7	CAW-170125C	7.05 @ 19.7°C	SLOPE: 96.9%
Buffer 4	170125B	3.98 @ 19.7°C	
Buffer 10	161214A	10.05 @ 19.6°C	

	Sample ID	Matrix	pH	Comments
1	NO24171-001B	H2O	7.69 @ 19.1°C	
2	NO24172-001B		7.98 @ 18.7°C	
3	NO24173-001B		8.03 @ 18.1°C	
4	NO24174-001B		7.65 @ 19.1°C	
5	NO24175-001B		6.97 @ 22.6°C	
6	1B DUP		6.94 @ 22.6°C	
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer (7) 4, 10	CAW-170125D	6.99 @ 22.2°C	Accept: +/-0.1 pH units from expected value

(Circle one)

Date: 5/11/17 935
Analyst: LKR

Standard	Std ID	pH	Comments
Buffer 7	CAW-170125C	7.00 @ 21.5°C	SLOPE: 96.8%
Buffer 4	170125B	4.02 @ 21.6°C	
Buffer 10	~~161214A~~ 170331A LKR	10.05 @ 21.4°C	

	Sample ID	Matrix	pH	Comments
1	NO24184-001D	H2O	8.28 @ 16.4°C	
2	2D		8.34 @ 15.8°C	
3	3D		8.33 @ 16.5°C	
4	4D		8.30 @ 16.0°C	
5	5D		8.29 @ 15.6°C	
6	6D		8.27 @ 16.5°C	Julia Ramit
7	7D		8.30 @ 16.7°C	5/11/2017
8	8D		8.28 @ 15.5°C	
9	9D		8.31 @ 16.9°C	
10	10D		8.31 @ 16.3°C	
Dup	10 DUP		8.32 @ 16.1°C	Accept: 10% water, 20% soil
	Buffer (7) 4, 10	CAW-170125D	6.99 @ 21.9°C	Accept: +/-0.1 pH units from expected value

(Circle one)

pH Logbook

Date: 5/11/17 935

Analyst: LSR CONT

Standard	Std ID	pH	Comments
Buffer 7	CINV - 170125C	7.00 @ 21.5C	SLOPE: 96.8%
Buffer 4	170125D	4.02 @ 21.6C	
Buffer 10	170131A	10.05 @ 21.4C	

	Sample ID	Matrix	pH	Comments
1	NO24124-011D	H2O	8.28 @ 17.1C	
2	12D		8.24 @ 16.8C	
3	13D		8.30 @ 17.0C	
4	14BC		7.51 @ 16.2C	
5	NO24185-001C		7.60 @ 16.7C	
6	1C DUP		7.63 @ 16.4C	
7				
8				
9				Julia Ramit 5/11/2017
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV - 170125D	6.99 @ 20.8C	Accept: +/-0.1 pH units from expected value

Date: _____

Analyst: _____

Standard	Std ID	pH	Comments
Buffer 7			
Buffer 4			
Buffer 10			

	Sample ID	Matrix	pH	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)			Accept: +/-0.1 pH units from expected value

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62190/62191 **Analyst:** LSR

ASSET #: N024184 **Date Analyzed:** 5/11/2017

Method: EPA 160.2

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/12/2017

2nd Level Reviewer: 5/24/2017 Date: ——

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N024184-001D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4273- 1.4266) *1000000}{100}$$

= 7 mg/L

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 5/12/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2017 8:11:02 A**
Prep End Date: **5/11/2017 2:45:00 P**

Reviewed/ Date: 5/24/2017

Initials/ Date: Lilia Ramit 5/12/2017

Prep Batch **62190** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62190	Water		100	☐	0	0	100	1.000		
MB-62190	Water		100	☐	0	0	100	1.000		
N024181-001A	Surface Water	12.9	100	☐	0	0	100	1.000		
N024184-001D	Groundwater		100	☐	0	0	100	1.000		
N024184-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N024184-002D	Groundwater		100	☐	0	0	100	1.000		
N024184-003D	Groundwater		100	☐	0	0	100	1.000		
N024184-004D	Groundwater		100	☐	0	0	100	1.000		
N024184-005D	Groundwater		100	☐	0	0	100	1.000		
N024184-006D	Groundwater		100	☐	0	0	100	1.000		
N024184-007D	Groundwater		100	☐	0	0	100	1.000		
N024184-008D	Groundwater		100	☐	0	0	100	1.000		
N024184-009D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8943	Glass Fiber Filter, 47mm
8944	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170414A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 5/11/2017 8:11:02 A
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 5/12/2017

Prep Batch 62190 Prep Code: 160.2_W_PRE Technician: Lilia Ramit Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62190	Water IWSTM14A		100	☐	0	0	100	1.000		
MB-62190	Water		100	☐	0	0	100	1.000		
N024181-001A	Surface Water	12.9	100	☐	0	0	100	1.000		
N024184-001D	Groundwater		100	☐	0	0	100	1.000		
N024184-001D-DU	Groundwater		100	☐	0	0	100	1.000		
N024184-002D	Groundwater		100	☐	0	0	100	1.000		
N024184-003D	Groundwater		100	☐	0	0	100	1.000		
N024184-004D	Groundwater		100	☐	0	0	100	1.000		
N024184-005D	Groundwater		100	☐	0	0	100	1.000		
N024184-006D	Groundwater		100	☐	0	0	100	1.000		
N024184-007D	Groundwater		100	☐	0	0	100	1.000		
N024184-008D	Groundwater		100	☐	0	0	100	1.000		
N024184-009D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8943
8944

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2017 8:11:24 A**
Prep End Date: **5/11/2017 2:45:00 P**
Reviewed/ Date: 5/24/2017
Initials/ Date: Lilia Ramit 5/12/2017
Prep Batch **62191** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL** Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62191	Water		100	☐	0	0	100	1.000		
MB-62191	Water		100	☐	0	0	100	1.000		
N024184-010D	Groundwater		100	☐	0	0	100	1.000		
N024184-010D-DU	Groundwater		100	☐	0	0	100	1.000		
N024184-011D	Groundwater		100	☐	0	0	100	1.000		
N024184-012D	Groundwater		100	☐	0	0	100	1.000		
N024184-013D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8944	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170414A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 5/11/2017 8:11:24 A
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 5/12/2017

Prep Batch 62191 Prep Code: 160.2_W_PRE Technician: Lilia Ramit Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62191	Water IWST170414A		100	☐	0	0	100	1.000		
MB-62191	Water		100	☐	0	0	100	1.000		
N024184-010D	Groundwater		100	☐	0	0	100	1.000		
N024184-010D-DU	Groundwater		100	☐	0	0	100	1.000		
N024184-011D	Groundwater		100	☐	0	0	100	1.000		
N024184-012D	Groundwater		100	☐	0	0	100	1.000		
N024184-013D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8414

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST: TSS / TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/11/17	MB	100	1.4216	1.4214	
811	62190		1.4216	1.4214	
	LCS	100	1.3993	1.4961	
	62190		1.3994	1.4963	
	NO24181-001A	100	1.3972	1.4805	
1			1.3973	1.4808	
	NO24184-001D	100	1.4267	1.4275	
2			1.4265	1.4273	
	1D	100	1.4047	1.4054	
3	DUP		1.4049	1.4055	
	2D	100	1.3914	1.3916	
4			1.3913	1.3915	
	3D	100	1.4169	1.4172	
5			1.4169	1.4173	
	4D	100	1.4262	1.4265	
6			1.4264	1.4265	
	5D	100	1.3947	1.3952	
7			1.3949	1.3952	
	6D	100	1.4283	1.4287	
8			1.4285	1.4287	

Silvia Ramit 5/12/2017

ASSET LABORATORIES

CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert.2921

NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00947

SOLIDS RAW DATA

TEST (TSS) TDS/TS

	Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
9	5/11/17	NO24184-007D	100	1.4140 1.4140	1.4141 1.4141	
10		8D	100	1.4191 1.4190	1.4190 1.4191	
11		9D	100	1.4128 1.4129	1.4129 1.4129	
0		MB 62191	100	1.4065 1.4065	1.4065 1.4065	
LCS2		LCS 62191	100	1.4055 1.4056	1.5053 1.5052	
12		NO24184-010D	100	1.4007 1.4006	1.4007 1.4008	
13		10D DUP	100	1.4059 1.4057	1.4058 1.4058	
14		11D	100	1.4037 1.4038	1.4038 1.4038	
15		12D	100	1.4180 1.4178	1.4180 1.4179	
16		13D	100	1.4094 1.4093	1.4094 1.4094	

ASSET Laboratories

Logbook#6

Julia Ramit 5/12/2017

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
5/11/2017							
MB-62190	100	1.4216	1.4214	-2.0000	1.00	-2	MBLK
LCS-62190	100	1.3994	1.4963	969.0000	1.00	969	LCS
N024181-001A	100	1.3973	1.4808	835.0000	1.00	835	SAMP
N024184-001D	100	1.4266	1.4273	7.0000	1.00	7	SAMP
N024184-001DDUP	100	1.4049	1.4055	6.0000	1.00	6	DUP
N024184-002D	100	1.3913	1.3915	2.0000	1.00	2	SAMP
N024184-003D	100	1.4169	1.4173	4.0000	1.00	4	SAMP
N024184-004D	100	1.4264	1.4265	1.0000	1.00	1	SAMP
N024184-005D	100	1.3949	1.3952	3.0000	1.00	3	SAMP
N024184-006D	100	1.4285	1.4287	2.0000	1.00	2	SAMP
N024184-007D	100	1.414	1.4141	1.0000	1.00	1	SAMP
N024184-008D	100	1.419	1.4191	1.0000	1.00	1	SAMP
N024184-009D	100	1.4129	1.4129	0.0000	1.00	0	SAMP

Julia Ramit 5/12/2017

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
5/11/2017							
MB-62191	100	1.4066	1.4065	-1.0000	1.00	-1	MBLK
LCS-62191	100	1.4056	1.5052	996.0000	1.00	996	LCS
N024184-010D	100	1.4006	1.4008	2.0000	1.00	2	SAMP
N024184-010DDUP	100	1.4057	1.4058	1.0000	1.00	1	DUP
N024184-011D	100	1.4038	1.4038	0.0000	1.00	0	SAMP
N024184-012D	100	1.4178	1.4179	1.0000	1.00	1	SAMP
N024184-013D	100	1.4093	1.4094	1.0000	1.00	1	SAMP

Silvia Ramit 5/12/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115202
ASSET #: N024184

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/12/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/16/2017

2nd Level Reviewer: 5/25/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N024184-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.00$$

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

rba 5/16/2017

ANALYSIS RUN LOG

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005A	SAMP	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-1,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-1,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-2,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-2,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-3,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-3,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,10
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-4,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-4,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	~~N023912-005AMS,MS~~	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL N023912-005A,SAMP,1
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-5,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-5,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/12/17 9:33 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/12/17 9:44 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/12/17 9:53 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/12/17 10:03 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/12/17 10:12 AM	Reported
17	MB-R115201	MBLK	1	Hexavalent Chromium	05/12/17 10:21 AM	Reported
18	LCS-R115201	LCS	1	Hexavalent Chromium	05/12/17 10:31 AM	Reported
19	N024189-001A	SAMP	1	Hexavalent Chromium	05/12/17 10:40 AM	Reported
20	N024189-002A	SAMP	1	Hexavalent Chromium	05/12/17 10:50 AM	Reported
21	N024189-003A	SAMP	1	Hexavalent Chromium	05/12/17 10:59 AM	Not Reported
22	N024189-004A	SAMP	1	Hexavalent Chromium	05/12/17 11:09 AM	Reported
23	N024189-005A	SAMP	1	Hexavalent Chromium	05/12/17 11:18 AM	Reported
24	N024189-006A	SAMP	1	Hexavalent Chromium	05/12/17 11:28 AM	Not Reported
25	N024189-007A	SAMP	1	Hexavalent Chromium	05/12/17 11:37 AM	Reported
26	N024189-008A	SAMP	1	Hexavalent Chromium	05/12/17 11:47 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/12/17 11:56 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/12/17 12:06 PM	Reported
29	N024189-009A	SAMP	1	Hexavalent Chromium	05/12/17 12:15 PM	Reported
30	N024189-010A	SAMP	1	Hexavalent Chromium	05/12/17 12:24 PM	Reported
31	N024189-011A	SAMP	1	Hexavalent Chromium	05/12/17 12:34 PM	Reported
32	N024189-010ADUP	DUP	1	Hexavalent Chromium	05/12/17 12:43 PM	Reported
33	N024089-015A	SAMP	5	Hexavalent Chromium	05/12/17 12:53 PM	Reported
34	N024089-015AMS	MS	5	Hexavalent Chromium	05/12/17 1:03 PM	Reported
35	N024090-001A	SAMP	5	Hexavalent Chromium	05/12/17 1:12 PM	Reported
36	N024090-001AMS	MS	5	Hexavalent Chromium	05/12/17 1:21 PM	Reported
37	N024090-004A	SAMP	5	Hexavalent Chromium	05/12/17 1:31 PM	Reported
38	N024090-004AMS	MS	5	Hexavalent Chromium	05/12/17 1:40 PM	Not Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/12/17 1:50 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/12/17 1:59 PM	Reported
41	N024090-001AMSD	MSD	5	Hexavalent Chromium	05/12/17 2:09 PM	Reported
42	N024189-003A	SAMP	1	Hexavalent Chromium	05/12/17 2:18 PM	Reported

INJECTION LOG: 170512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024189-006A	SAMP	1	Hexavalent Chromium	05/12/17 2:27 PM	Reported
44	N024090-004AMS	MS	5	Hexavalent Chromium	05/12/17 2:37 PM	Reported
45	LCS-R115202	LCS	1	Hexavalent Chromium	05/12/17 2:49 PM	Reported
46	MB-R115202	MBLK	1	Hexavalent Chromium	05/12/17 3:00 PM	Reported
47	N024184-001A	SAMP	1	Hexavalent Chromium	05/12/17 3:09 PM	Reported
48	N024184-001AMS	MS	1	Hexavalent Chromium	05/12/17 3:19 PM	Reported
49	N024184-010A	SAMP	1	Hexavalent Chromium	05/12/17 3:28 PM	Reported
50	N024184-010ADUP	DUP	1	Hexavalent Chromium	05/12/17 3:37 PM	Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/12/17 3:47 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/12/17 3:56 PM	Reported
53	N024184-001AMSD	MSD	1	Hexavalent Chromium	05/12/17 4:06 PM	Reported
54	N024184-010AMS	MS	1	Hexavalent Chromium	05/12/17 4:15 PM	Reported
55	N024184-002A	SAMP	1	Hexavalent Chromium	05/12/17 4:25 PM	Reported
56	N024184-002AMS	MS	1	Hexavalent Chromium	05/12/17 4:34 PM	Reported
57	N024184-003A	SAMP	1	Hexavalent Chromium	05/12/17 4:44 PM	Reported
58	N024184-003AMS	MS	1	Hexavalent Chromium	05/12/17 4:53 PM	Reported
59	N024184-004A	SAMP	1	Hexavalent Chromium	05/12/17 5:03 PM	Reported
60	N024184-004AMS	MS	1	Hexavalent Chromium	05/12/17 5:12 PM	Reported
61	N024184-005A	SAMP	1	Hexavalent Chromium	05/12/17 5:22 PM	Reported
62	N024184-005AMS	MS	1	Hexavalent Chromium	05/12/17 5:31 PM	Reported
63	CCV-5	CCV	1	Hexavalent Chromium	05/12/17 5:40 PM	Reported
64	CCB-5	CCB	1	Hexavalent Chromium	05/12/17 5:50 PM	Reported
65	N024184-006A	SAMP	1	Hexavalent Chromium	05/12/17 5:59 PM	Reported
66	N024184-006AMS	MS	1	Hexavalent Chromium	05/12/17 6:09 PM	Reported
67	N024184-007A	SAMP	1	Hexavalent Chromium	05/12/17 6:18 PM	Reported
68	N024184-007AMS	MS	1	Hexavalent Chromium	05/12/17 6:28 PM	Reported
69	N024184-008A	SAMP	1	Hexavalent Chromium	05/12/17 6:37 PM	Reported
70	N024184-008AMS	MS	1	Hexavalent Chromium	05/12/17 6:47 PM	Reported
71	N024184-009A	SAMP	1	Hexavalent Chromium	05/12/17 6:56 PM	Reported
72	N024184-009AMS	MS	1	Hexavalent Chromium	05/12/17 7:06 PM	Reported
73	N024184-011A	SAMP	1	Hexavalent Chromium	05/12/17 7:15 PM	Reported
74	N024184-011AMS	MS	1	Hexavalent Chromium	05/12/17 7:25 PM	Reported
75	CCV-6	CCV1	1	Hexavalent Chromium	05/12/17 7:34 PM	Reported
76	CCB-6	CCB	1	Hexavalent Chromium	05/12/17 7:43 PM	Reported
77	N024184-012A	SAMP	1	Hexavalent Chromium	05/12/17 7:53 PM	Reported
78	N024184-012AMS	MS	1	Hexavalent Chromium	05/12/17 8:02 PM	Reported
79	N024184-013A	SAMP	1	Hexavalent Chromium	05/12/17 8:12 PM	Reported
80	N024184-013AMS	MS	1	Hexavalent Chromium	05/12/17 8:21 PM	Reported
81	N024184-014A	SAMP	1	Hexavalent Chromium	05/12/17 8:31 PM	Reported
82	N024184-014AMS	MS	1	Hexavalent Chromium	05/12/17 8:40 PM	Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/12/17 8:50 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/12/17 8:59 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170512A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**12/May/17 21:29:58**
No. of Injections:	**87**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/12/2017 09:33	Finished	
13	BLANK	2	1000	Unknown		05/12/2017 09:44	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/12/2017 09:53	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/12/2017 10:03	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/12/2017 10:12	Finished	CCB R170428A
17	MB-H2O,MBLK,1	6	1000	Unknown		05/12/2017 10:21	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/12/2017 10:31	Finished	LCS, IWST-170330B
19	N024189-001A,SAMP	8	1000	Unknown		05/12/2017 10:40	Finished	SAMP, 10mL
20	N024189-002A,SAMP	9	1000	Unknown		05/12/2017 10:50	Finished	SAMP, 10mL
21	N024189-003A,SAMP	10	1000	Unknown		05/12/2017 10:59	Finished	SAMP, 10mL
22	N024189-004A,SAMP	11	1000	Unknown		05/12/2017 11:09	Finished	SAMP, 10mL
23	N024189-005A,SAMP	12	1000	Unknown		05/12/2017 11:18	Finished	SAMP, 10mL
24	N024189-006A,SAMP	13	1000	Unknown		05/12/2017 11:28	Finished	SAMP, 10mL
25	N024189-007A,SAMP	14	1000	Unknown		05/12/2017 11:37	Finished	SAMP, 10mL
26	N024189-008A,SAMP	15	1000	Unknown		05/12/2017 11:47	Finished	SAMP, 10mL
27	CCV-2,CCV1,1,	16	1000	Unknown		05/12/2017 11:56	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	17	1000	Unknown		05/12/2017 12:06	Finished	CCB R170419B
29	N024189-009A,SAMP	18	1000	Unknown		05/12/2017 12:15	Finished	SAMP, 10mL
30	N024189-010A,SAMP	19	1000	Unknown		05/12/2017 12:24	Finished	SAMP, 10mL
31	N024189-011A,SAMP	20	1000	Unknown		05/12/2017 12:34	Finished	SAMP, 10mL
32	N024189-010ADUP,D	21	1000	Unknown		05/12/2017 12:43	Finished	DUP, 10mL
33	N024089-015A,SAMP	22	1000	Unknown		05/12/2017 12:53	Finished	SAMP, 2>10mL
34	N024089-015AMS,MS	23	1000	Unknown		05/12/2017 13:03	Finished	MS (1ppb), IWST-170330B,2>1
35	N024090-001A,SAMP	24	1000	Unknown		05/12/2017 13:12	Finished	SAMP, 2>10mL
36	N024090-001AMS,MS	25	1000	Unknown		05/12/2017 13:21	Finished	MS (1ppb), IWST-170330B,2>1
37	N024090-004A,SAMP	26	1000	Unknown		05/12/2017 13:31	Finished	SAMP, 2>10mL
38	N024090-004AMS,MS	27	1000	Unknown		05/12/2017 13:40	Finished	MS (1ppb), IWST-170330B,2>1
39	CCV-3,CCV,1,	28	1000	Unknown		05/12/2017 13:50	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	29	1000	Unknown		05/12/2017 13:59	Finished	CCB R170428A
41	N024090-001AMSD,M	30	1000	Unknown		05/12/2017 14:09	Finished	MSD (1ppb), IWST-170330B,2>
42	N024189-003A,SAMP	31	1000	Unknown		05/12/2017 14:18	Finished	SAMP, 10mL
43	N024189-006A,SAMP	32	1000	Unknown		05/12/2017 14:27	Finished	SAMP, 10mL
44	N024090-004AMS,MS	33	1000	Unknown		05/12/2017 14:37	Finished	MS (1ppb), IWST-170330B,2>1
45	LCS-2,LCS,1	1	1000	Unknown		05/12/2017 14:49	Finished	LCS, IWST-170330B
46	MB-2,MBLK,1	2	1000	Unknown		05/12/2017 15:00	Finished	MB R170428A
47	N024184-001A,SAMP	3	1000	Unknown		05/12/2017 15:09	Finished	SAMP, 10mL
48	N024184-001AMS,MS	4	1000	Unknown		05/12/2017 15:19	Finished	MS (1ppb), IWST-170330B,0.2
49	N024184-010A,SAMP	5	1000	Unknown		05/12/2017 15:28	Finished	SAMP, 10mL
50	N024184-010ADUP,D	6	1000	Unknown		05/12/2017 15:37	Finished	DUP, 10mL
51	CCV-4,CCV1,1,	7	1000	Unknown		05/12/2017 15:47	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	8	1000	Unknown		05/12/2017 15:56	Finished	CCB R170428A
53	N024184-001AMSD,M	9	1000	Unknown		05/12/2017 16:06	Finished	MSD (1ppb), IWST-170330B,0.
54	N024184-010AMS,MS	10	1000	Unknown		05/12/2017 16:15	Finished	MS (1ppb), IWST-170330B,0.2
55	N024184-002A,SAMP	11	1000	Unknown		05/12/2017 16:25	Finished	SAMP, 10mL
56	N024184-002AMS,MS	12	1000	Unknown		05/12/2017 16:34	Finished	MS (1ppb), IWST-170330B,0.2
57	N024184-003A,SAMP	13	1000	Unknown		05/12/2017 16:44	Finished	SAMP, 10mL
58	N024184-003AMS,MS	14	1000	Unknown		05/12/2017 16:53	Finished	MS (1ppb), IWST-170330B,0.2
59	N024184-004A,SAMP	15	1000	Unknown		05/12/2017 17:03	Finished	SAMP, 10mL
60	N024184-004AMS,MS	16	1000	Unknown		05/12/2017 17:12	Finished	MS (1ppb), IWST-170330B,0.2

61	N024184-005A,SAMP	17	1000	Unknown		05/12/2017 17:22	Finished	SAMP, 10mL
62	N024184-005AMS,MS	18	1000	Unknown		05/12/2017 17:31	Finished	MS (1ppb), IWST-170330B,0.2
63	CCV-5,CCV,1,	19	1000	Unknown		05/12/2017 17:40	Finished	CCV @5ppb, IWST-170330B
64	CCB-5,CCB,1,	20	1000	Unknown		05/12/2017 17:50	Finished	CCB R170428A
65	N024184-006A,SAMP	21	1000	Unknown		05/12/2017 17:59	Finished	SAMP, 10mL
66	N024184-006AMS,MS	22	1000	Unknown		05/12/2017 18:09	Finished	MS (1ppb), IWST-170330B,0.2
67	N024184-007A,SAMP	23	1000	Unknown		05/12/2017 18:18	Finished	SAMP, 10mL
68	N024184-007AMS,MS	24	1000	Unknown		05/12/2017 18:28	Finished	MS (1ppb), IWST-170330B,0.2
69	N024184-008A,SAMP	25	1000	Unknown		05/12/2017 18:37	Finished	SAMP, 10mL
70	N024184-008AMS,MS	26	1000	Unknown		05/12/2017 18:47	Finished	MS (1ppb), IWST-170330B,0.2
71	N024184-009A,SAMP	27	1000	Unknown		05/12/2017 18:56	Finished	SAMP, 10mL
72	N024184-009AMS,MS	28	1000	Unknown		05/12/2017 19:06	Finished	MS (1ppb), IWST-170330B,0.2
73	N024184-011A,SAMP	29	1000	Unknown		05/12/2017 19:15	Finished	SAMP, 10mL
74	N024184-011AMS,MS	30	1000	Unknown		05/12/2017 19:25	Finished	MS (1ppb), IWST-170330B,0.2
75	CCV-6,CCV1,1,	31	1000	Unknown		05/12/2017 19:34	Finished	CCV @10ppb, IWST-170330B
76	CCB-6,CCB,1,	32	1000	Unknown		05/12/2017 19:43	Finished	CCB R170428A
77	N024184-012A,SAMP	33	1000	Unknown		05/12/2017 19:53	Finished	SAMP, 10mL
78	N024184-012AMS,MS	34	1000	Unknown		05/12/2017 20:02	Finished	MS (1ppb), IWST-170330B,0.2
79	N024184-013A,SAMP	35	1000	Unknown		05/12/2017 20:12	Finished	SAMP, 10mL
80	N024184-013AMS,MS	36	1000	Unknown		05/12/2017 20:21	Finished	MS (1ppb), IWST-170330B,0.2
81	N024184-014A,SAMP	37	1000	Unknown		05/12/2017 20:31	Finished	SAMP, 10mL
82	N024184-014AMS,MS	38	1000	Unknown		05/12/2017 20:40	Finished	MS (1ppb), IWST-170330B,0.2
83	CCV-7,CCV,1,	39	1000	Unknown		05/12/2017 20:50	Finished	CCV @5ppb, IWST-170330B
84	CCB-7,CCB,1,	40	1000	Unknown		05/12/2017 20:59	Finished	CCB R170428A
85	SHUTDOWN	41	1000	Unknown		05/12/2017 21:09	Finished	
86	Eluent: R170511F	42	1000	Unknown		n.a.	Finished	Eluent
87	PCR: R170511G	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 5/11/17
Time Prepared: 1102H
Prepared By: RBA / MG

slope - 97.7%
pH4 - 9.02 @ 20.1°C
pH7 - 7.01 @ 20.2°C
pH10 - 10.05 @ 20.1°C
LCS - 6.96 @ 22.8°C

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CLNV-161228C
NH4OH + NH4SO4 eluent: M70511A
NH4OH + NH4SO4 buffer: M70414A / R170428A

6N NaOH: R170308A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024182-001A	9.32	-	~250 ml	~250 ml		R170414A
2)	2A	9.15	9.54			+5 drops 6N NaOH	
3)	3A	9.33	-				
4)	4A	9.34	-				
5)	5A	9.31	-				
6)	6A	9.42	-				
7)	7A	9.23	9.51			+4 drops 6N NaOH	
8)	8A	9.24	9.57			"	
9)	11A	9.25	9.58			"	
10)	12A	9.39	-				
11)	13A	9.56	-				
12)	14A	9.48	-				
13)	N024185-1A	9.57	-				1/3 R170428A
14)	1A	9.57	-				2/3
15)	1A	9.49	-				3/3
	2A	9.54	-				

Sample Preparation

Date Prepared: 5/11/17
Time Prepared: 1102H
Prepared By: RBA / MG

CON'T

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CLNV-161228C
NH4OH + NH4SO4 eluent: R170511A / R170511F
NH4OH + NH4SO4 buffer: M70428A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024185-3A	9.53	-	~200 ml	~250 ml		R170428A
2)	N024184-1A	9.54	-				1/3
3)	1A	9.56	-				2/3
4)	1A	9.58	-				3/3
5)	2A	9.57	-				1/3
6)	2A	9.53	-				2/3
7)	2A	9.62	-				3/3
8)	3A	9.59	-				1/3
9)	3A	9.58	-				2/3
10)	3A	9.57	-				3/3
11)	4A	9.53	-				1/3
12)	4A	9.63	-				2/3
13)	4A	9.63	-				3/3
14)	5A	9.60	-				1/3
15)	5A	9.59	-				2/3
	5A	9.42	-				3/3

Logbook No. 12

rba 5/18/2017

Sample Preparation

Date Prepared: 5/11/17
Time Prepared: 1102
Prepared By: MG

CON'T

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CAN-16128C
NH4OH + NH4SO4 eluent: R1705111F
NH4OH + NH4SO4 buffer: R1704Y8A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024184-6A	9.60	–	~250mL	~250mL		1/3 R1704Y8A
2)	6A	9.60	–				2/3
3)	6A	9.56	–				3/3
4)	7A	9.57	–				1/3
5)	7A	9.59	–				2/3
6)	7A	9.56	–				3/3
7)	8A	9.58	–				1/3
8)	8A	9.59	–				2/3
9)	8A	9.53	–				3/3
10)	9A	9.45	–				1/3
11)	9A	9.46	–				2/3
12)	9A	9.49	–				3/3
13)	10A	9.49	–				1/3
14)	10A	9.50	–				2/3
15)	10A	9.49	–				3/3
	11A	9.49	–	↓	↓		1/3 ↓

Sample Preparation

Date Prepared: 5/11/17
Time Prepared: 1102
Prepared By: MG

CON'T

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CAN-16128C
NH4OH + NH4SO4 eluent: R1705111F
NH4OH + NH4SO4 buffer: R1704Y8A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024184-11A	9.57	–	~250mL	~250mL		2/3 R1704Y8A
2)	11A	9.57	–				3/3
3)	12A	9.50	–				1/3
4)	12A	9.52	–				2/3
5)	12A	9.50	–				3/3
6)	13A	9.56	–				1/3
7)	13A	9.55	–				2/3
8)	13A	9.56	–				3/3
9)	14A	9.46	–				1/3
10)	14A	9.36	–				2/3
11)	14A	9.37	–	↓	↓		3/3 ↓
12)							
13)							
14)							
15)							

Logbook No. 12

jba 5/18/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/25/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0537	0.2438	1.2243	2.4380	3.6639	4.8727	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST-170330A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ICV**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2642602**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.087	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2642603**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.194	0.20	0.2000	0	96.8	80	120				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **CCV**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642606**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.944	0.20	5.000	0	98.9	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642614**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.861	0.20	10.00	0	98.6	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **CCV**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642626**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.863	0.20	5.000	0	97.3	95	105				

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ZZZZZZ**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642638**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.819	0.20	10.00	0	98.2	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **CCV**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642646**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.975	0.20	5.000	0	99.5	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **ICB**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2642604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **CCB**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642607**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **CCB**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642615**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **CCB**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642627**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **CCB**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642639**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115202**
Client ID: **CCB**	Batch ID: **R115202**	TestNo: **EPA 218.6**		Analysis Date: **5/12/2017**	SeqNo: **2642647**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.131	
CCV-3	4.131	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
Average	4.132	
Actual RT Window	4.052 - 4.212	
Applied RT Window	3.932 - 4.332	
MB-R115201	N.A.	N.A.
LCS-R115201	4.140	PASS
N024189-001A	N.A.	N.A.
N024189-002A	N.A.	N.A.
N024189-003A	4.056	PASS
N024189-004A	4.056	PASS
N024189-005A	N.A.	N.A.
N024189-006A	4.165	PASS
N024189-007A	N.A.	N.A.
N024189-008A	N.A.	N.A.
N024189-009A	N.A.	N.A.
N024189-010A	4.081	PASS
N024189-011A	N.A.	N.A.
N024189-010ADUP	4.081	PASS
N024089-015A	N.A.	N.A.
N024089-015AMS	4.090	PASS
N024090-001A	N.A.	N.A.
N024090-001AMS	4.073	PASS
N024090-004A	4.073	PASS
N024090-004AMS	4.073	PASS
N024090-001AMSD	4.073	PASS
N024189-003A	4.065	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.131	
CCV-3	4.131	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
Average	4.132	
Actual RT Window	4.052 - 4.212	
Applied RT Window	3.932 - 4.332	
N024189-006A	N.A.	N.A.
N024090-004AMS	4.073	PASS
LCS-R115202	4.131	PASS
MB-R115202	N.A.	N.A.
N024184-001A	N.A.	N.A.
N024184-001AMS	4.123	PASS
N024184-010A	N.A.	N.A.
N024184-010ADUP	N.A.	N.A.
N024184-001AMSD	4.123	PASS
N024184-010AMS	4.131	PASS
N024184-002A	N.A.	N.A.
N024184-002AMS	4.123	PASS
N024184-003A	N.A.	N.A.
N024184-003AMS	4.123	PASS
N024184-004A	N.A.	N.A.
N024184-004AMS	4.131	PASS
N024184-005A	N.A.	N.A.
N024184-005AMS	4.123	PASS
N024184-006A	N.A.	N.A.
N024184-006AMS	4.123	PASS
N024184-007A	4.106	PASS
N024184-007AMS	4.123	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/12/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.131	
CCV-3	4.131	
CCV-4	4.131	
CCV-5	4.131	
CCV-6	4.131	
CCV-7	4.131	
Average	4.132	
Actual RT Window	4.052 - 4.212	
Applied RT Window	3.932 - 4.332	
N024184-008A	N.A.	N.A.
N024184-008AMS	4.123	PASS
N024184-009A	N.A.	N.A.
N024184-009AMS	4.123	PASS
N024184-011A	N.A.	N.A.
N024184-011AMS	4.123	PASS
N024184-012A	N.A.	N.A.
N024184-012AMS	4.123	PASS
N024184-013A	N.A.	N.A.
N024184-013AMS	4.131	PASS
N024184-014A	N.A.	N.A.
N024184-014AMS	4.123	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6/EPA 7199 Unit: ug/L
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Instrument Name: **IC-06** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA



INITIAL CALIBRATION

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

rba 4/30/2017

5/5/2017

IC-07 RBA 4/27/2017 12:48 PM

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-2,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-2,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-3,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-4,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-4,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,1
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-5,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-5,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

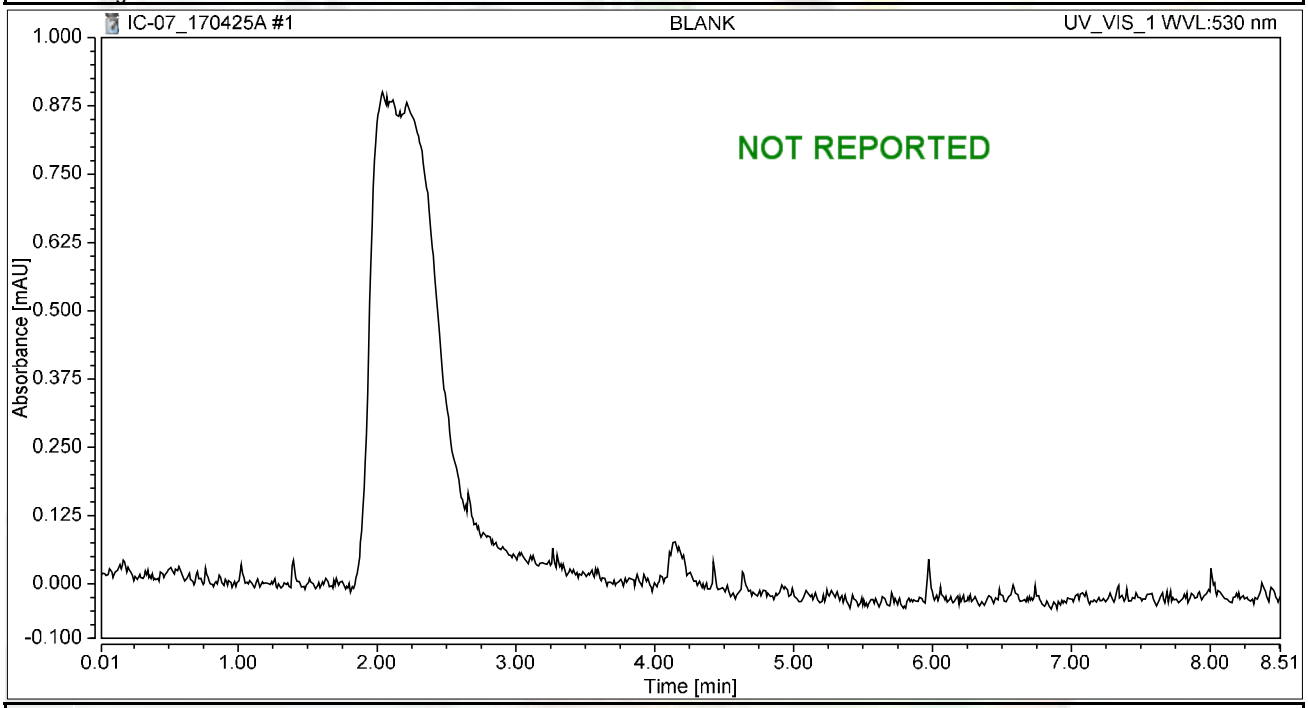
61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	N023912-005AMS,MS	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-6,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-6,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

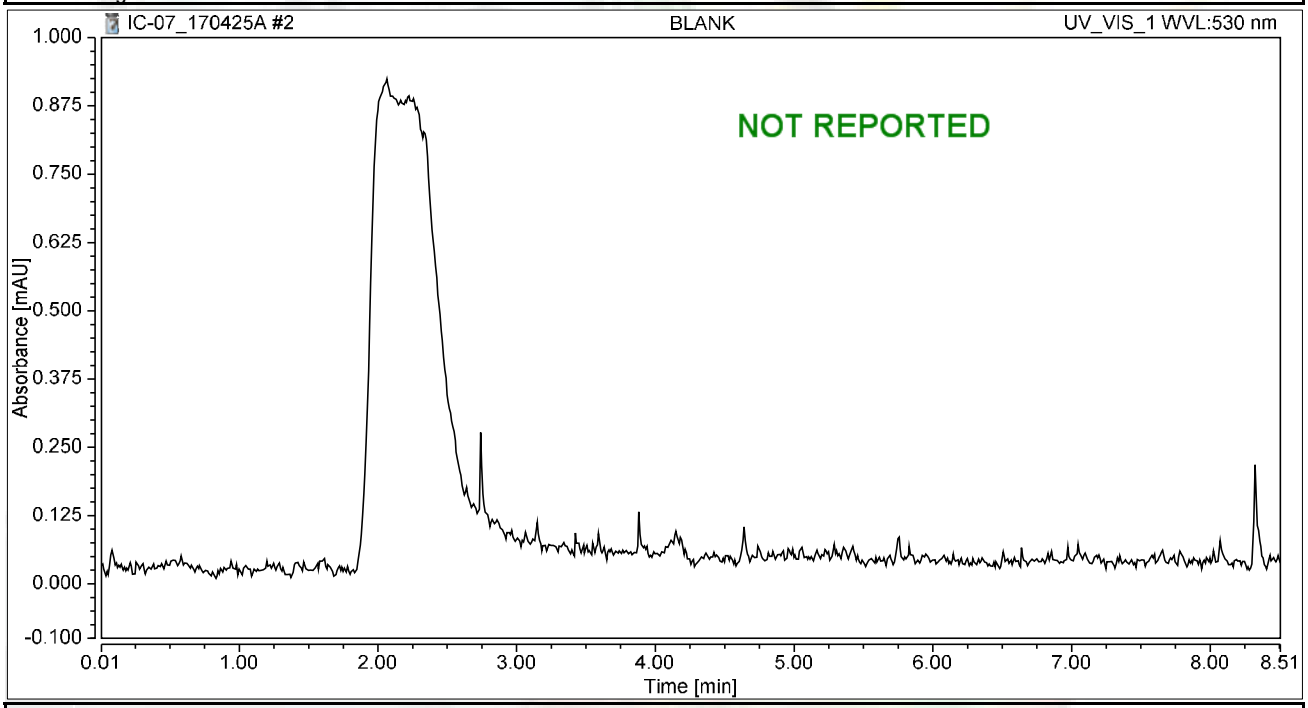
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

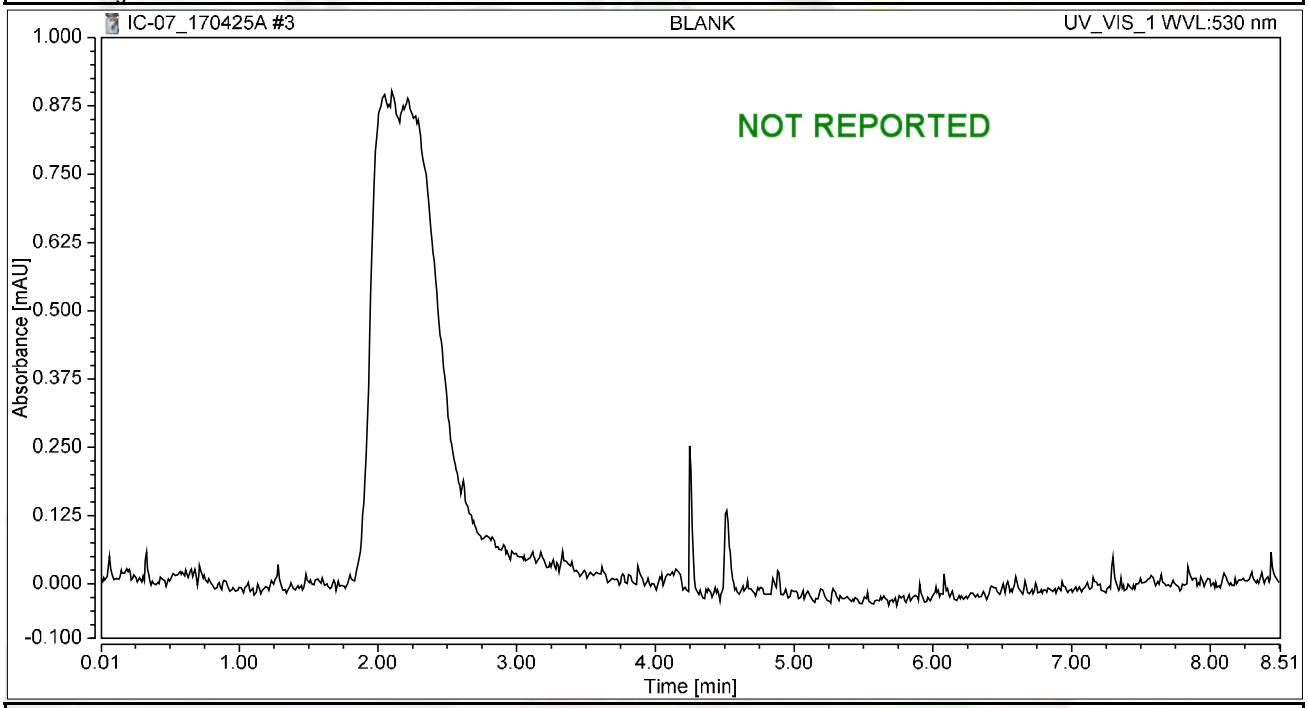
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

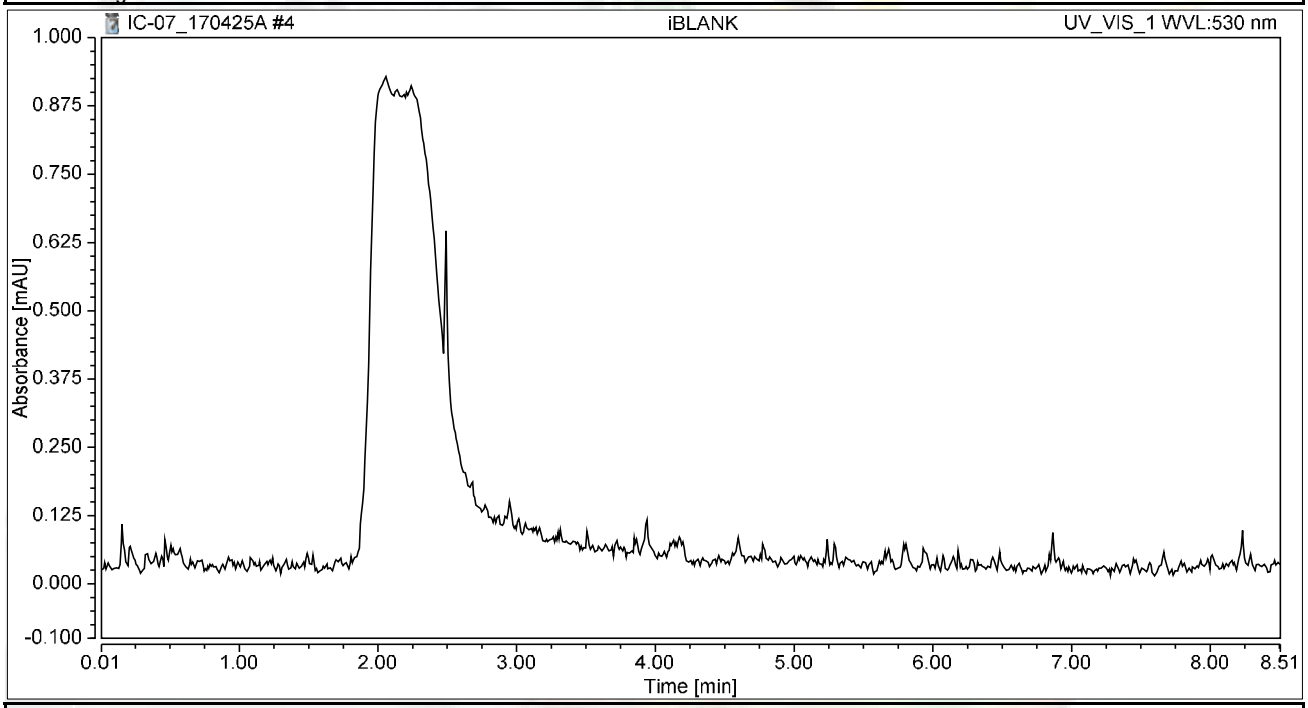
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

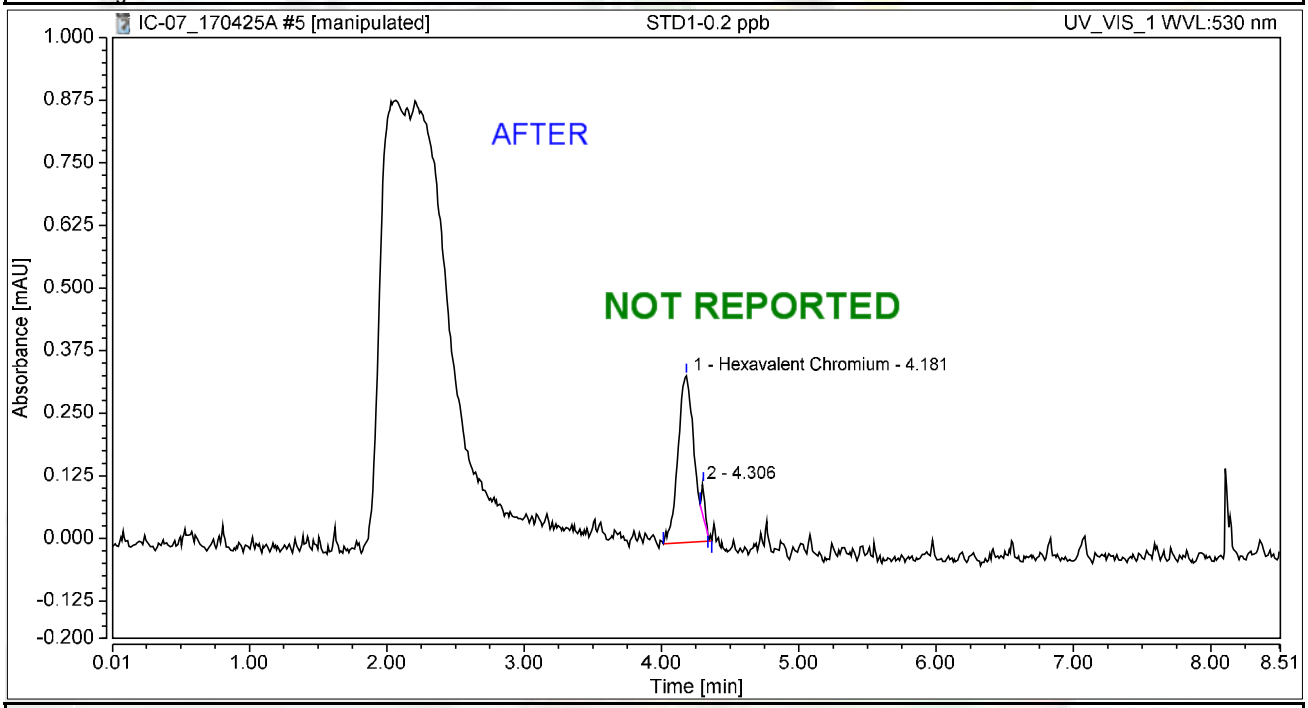
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.046	0.333	96.32	83.12	0.1906
2		4.306	0.002	0.068	3.68	16.88	n.a.
Total:			**0.048**	**0.401**	**100.00**	**100.00**	

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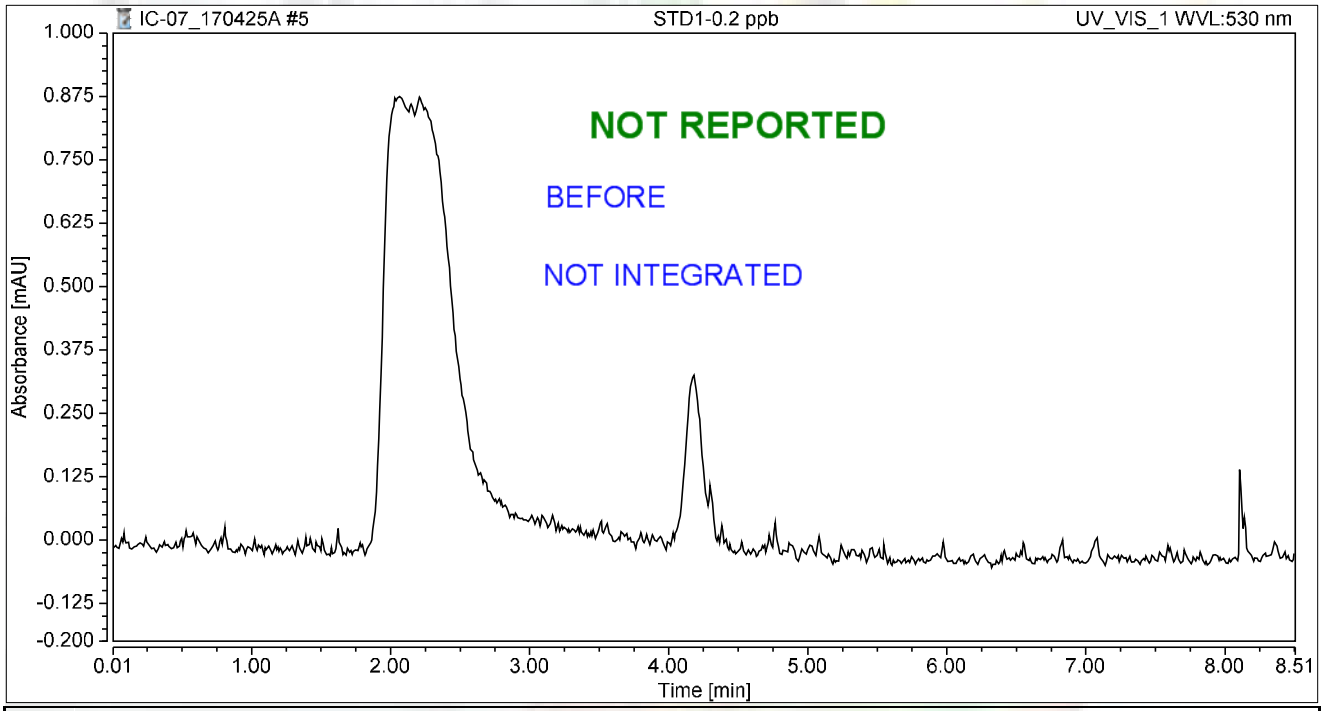
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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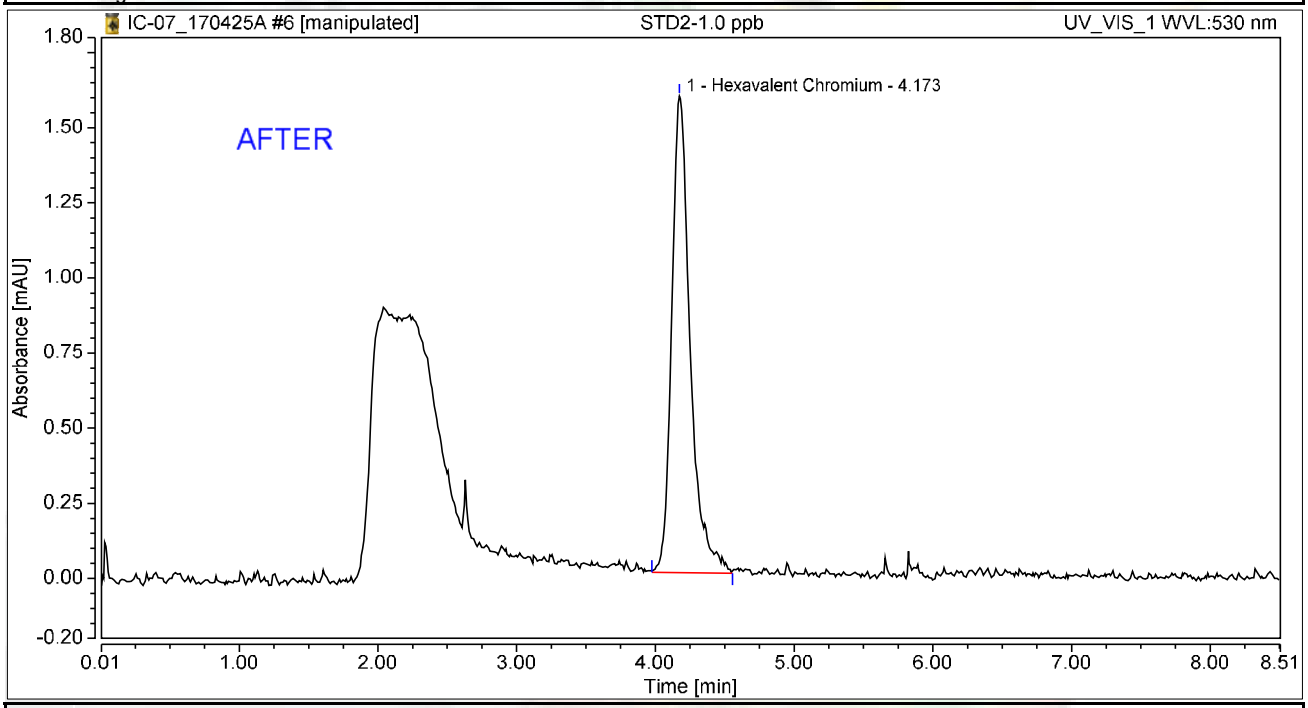
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.244	1.585	100.00	100.00	0.9996
Total:			**0.244**	**1.585**	**100.00**	**100.00**	

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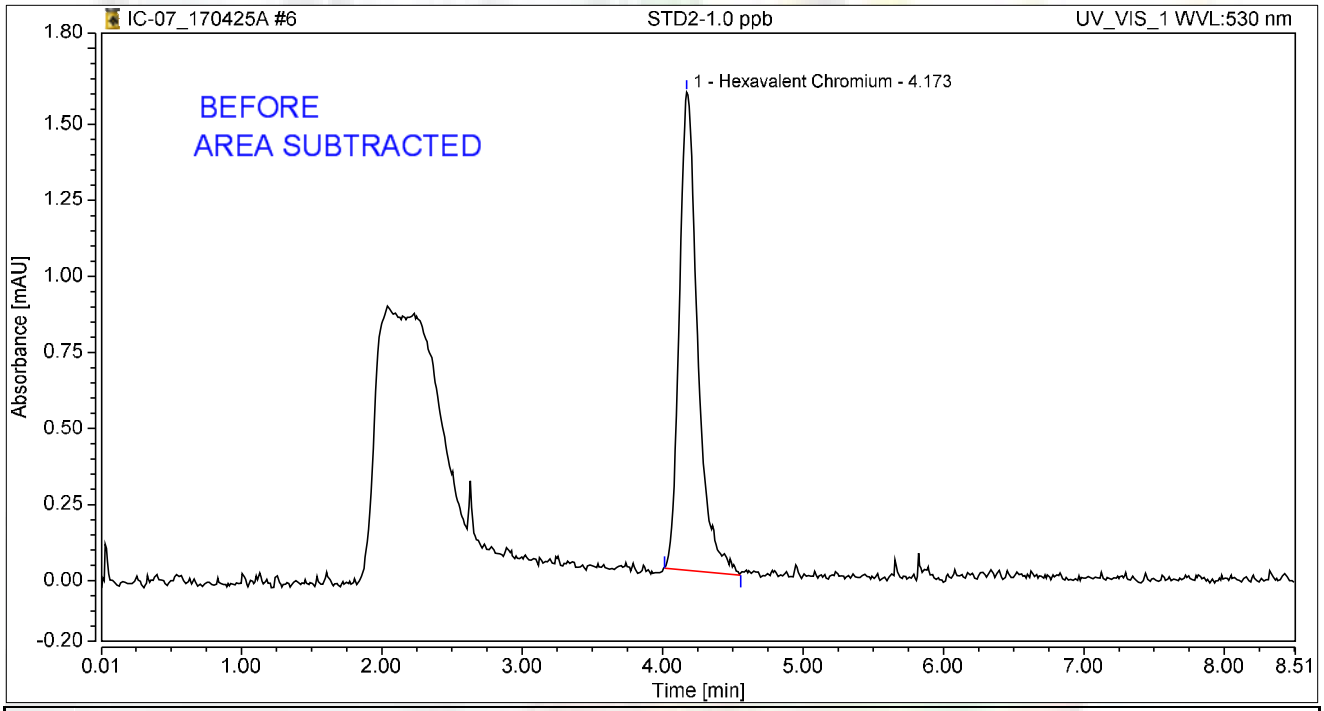
Reviewed by: Nancy 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.238	1.572	100.00	100.00	0.9911
Total:			**0.238**	**1.572**	**100.00**	**100.00**	

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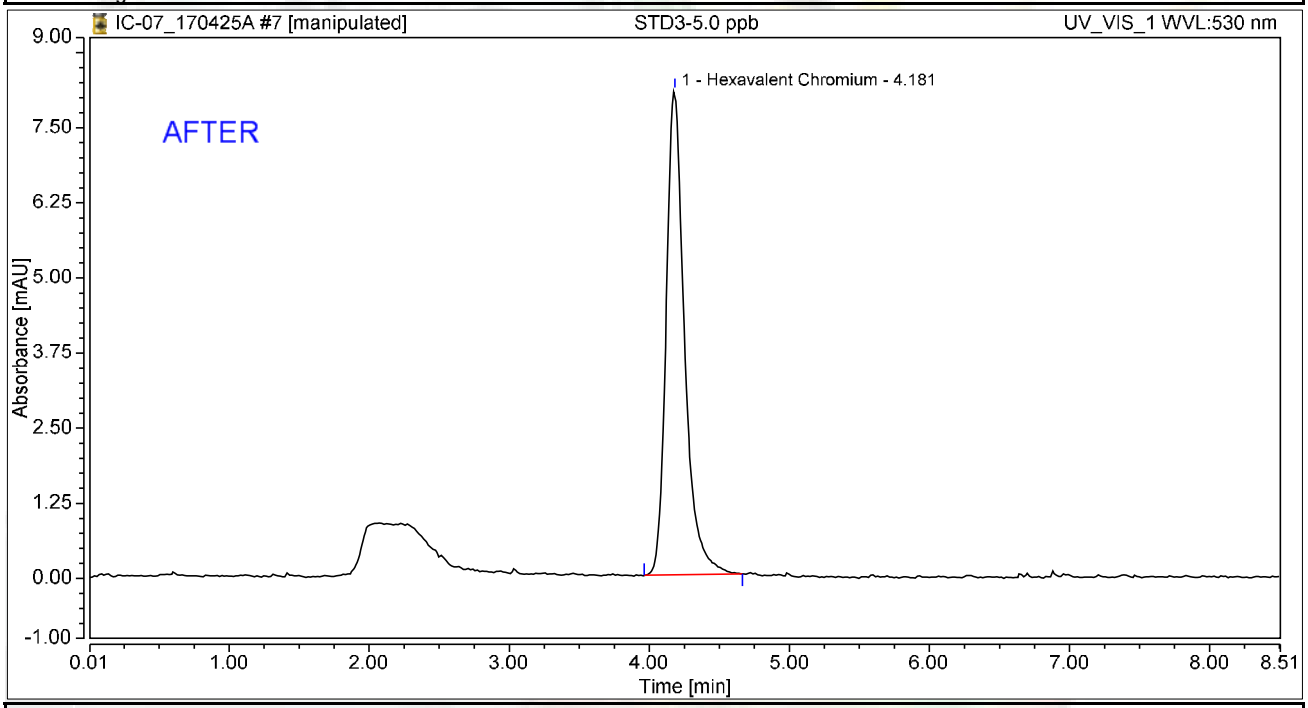
Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.224	8.059	100.00	100.00	5.0198
Total:			**1.224**	**8.059**	**100.00**	**100.00**	

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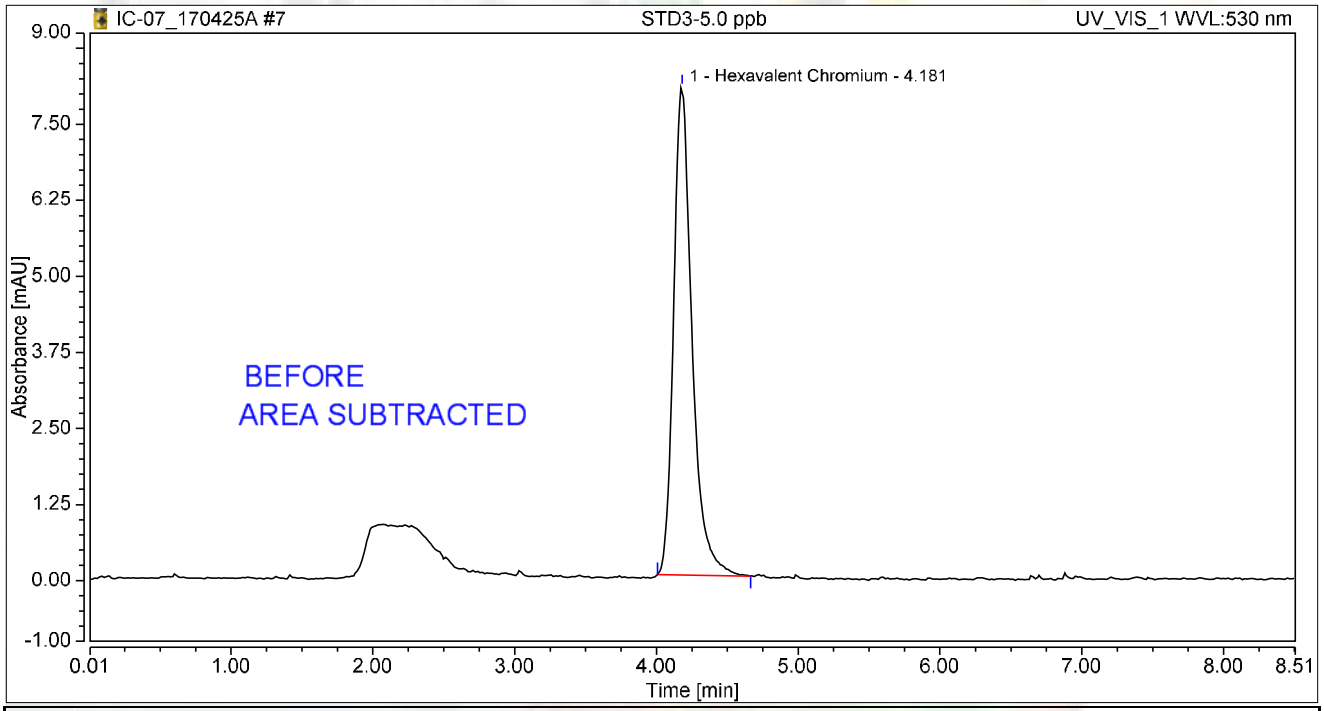
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.209	8.027	100.00	100.00	5.0326
Total:			**1.209**	**8.027**	**100.00**	**100.00**	

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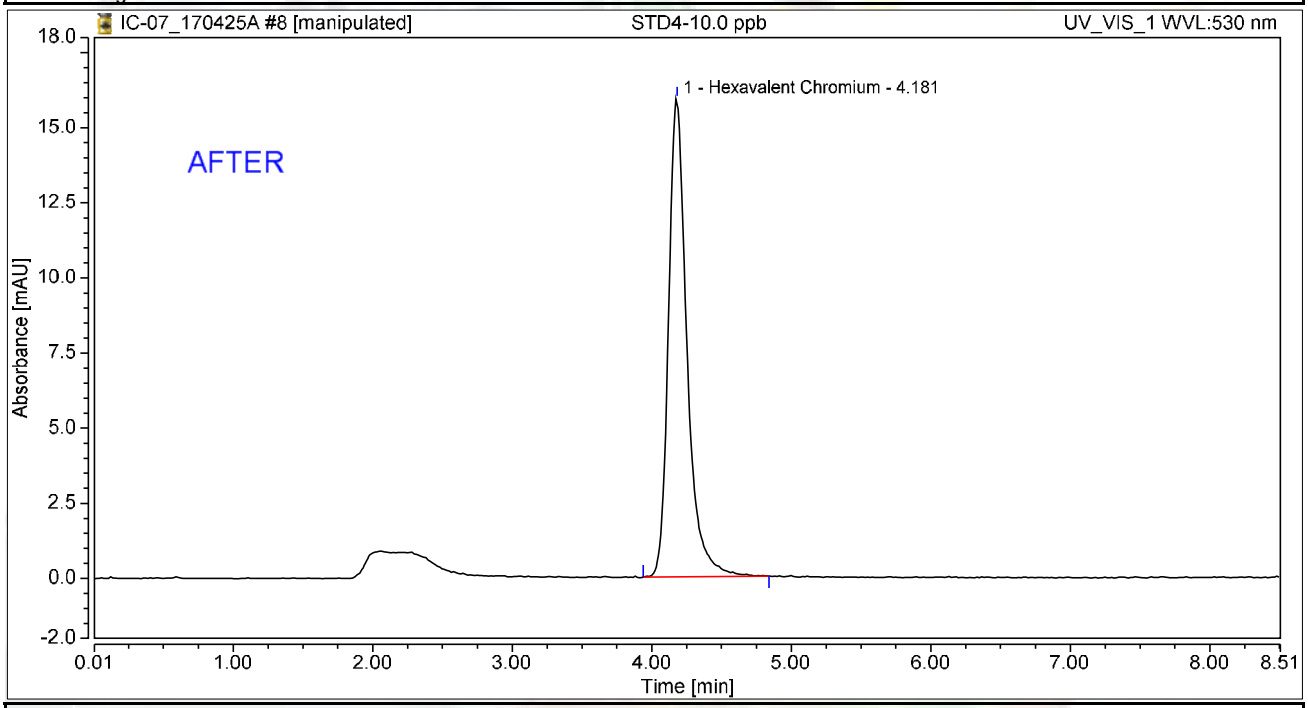
Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.438	15.921	100.00	100.00	9.9965
Total:			**2.438**	**15.921**	**100.00**	**100.00**	

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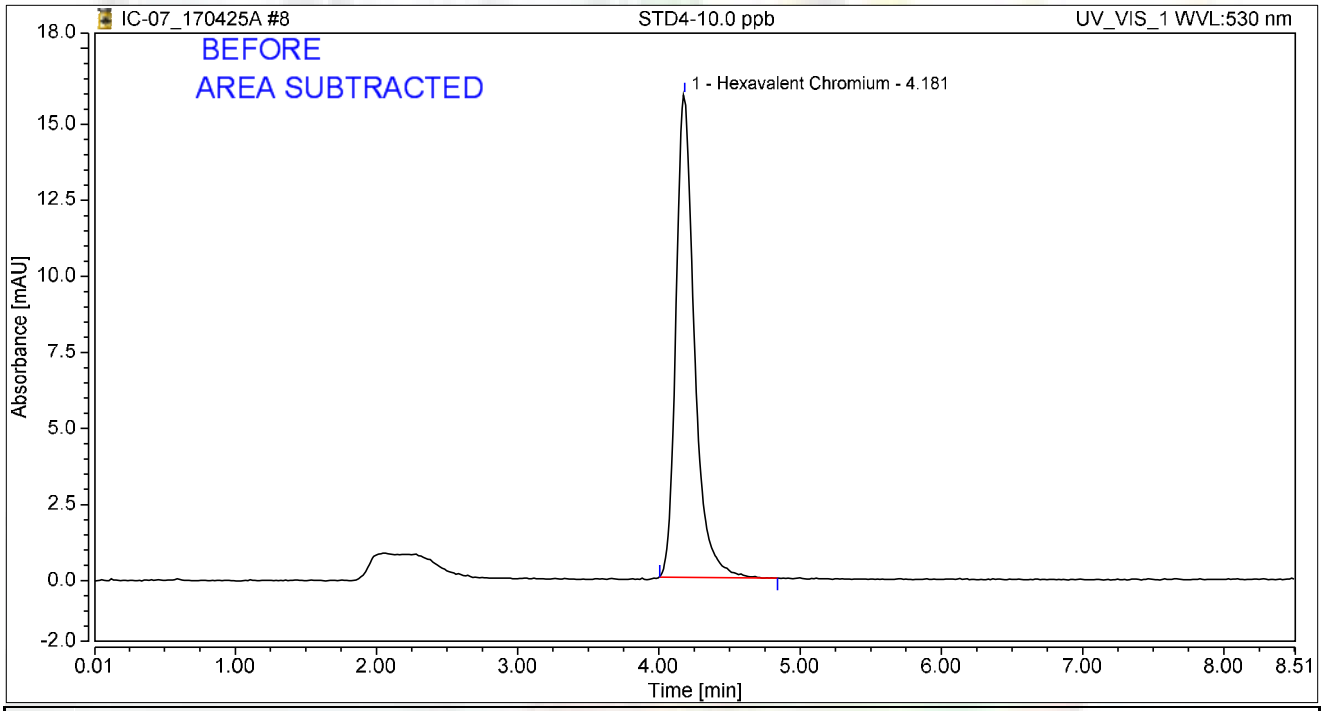
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.407	15.865	100.00	100.00	10.0165
Total:			**2.407**	**15.865**	**100.00**	**100.00**	

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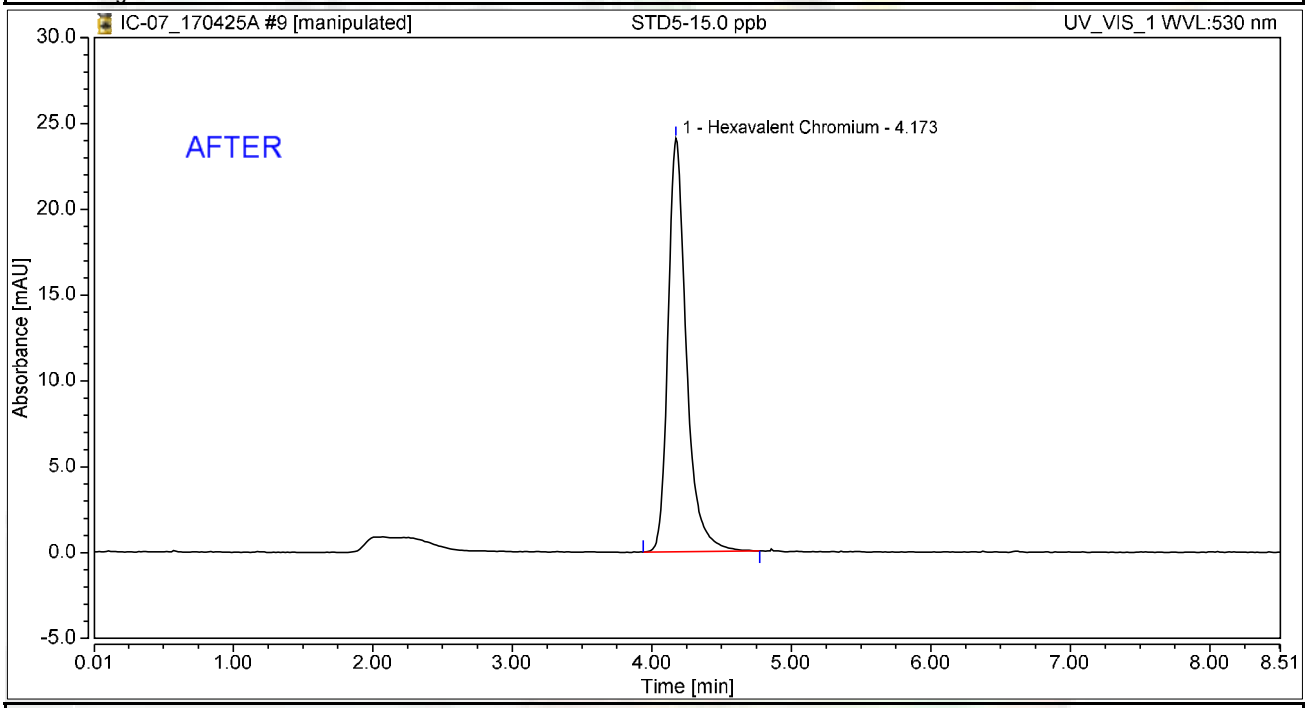
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.664	24.088	100.00	100.00	15.0230
Total:			**3.664**	**24.088**	**100.00**	**100.00**	

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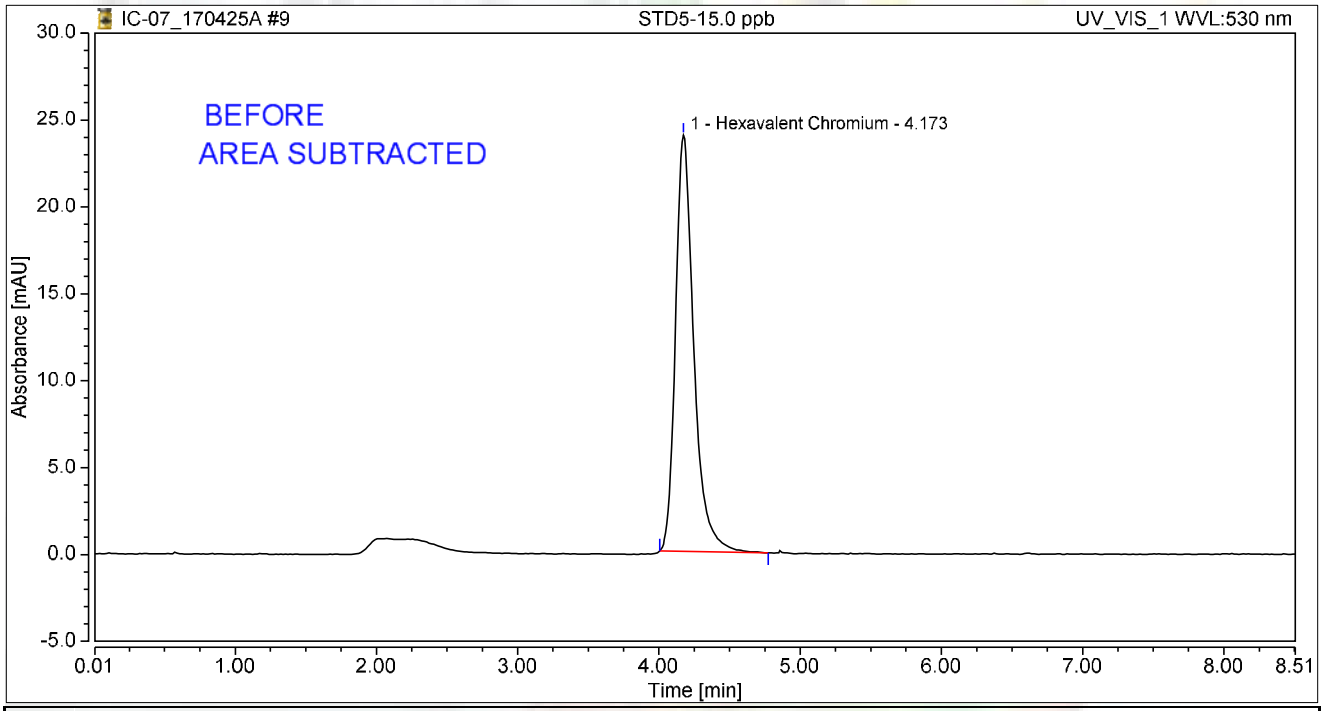
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.597	23.956	100.00	100.00	14.9652
Total:			**3.597**	**23.956**	**100.00**	**100.00**	

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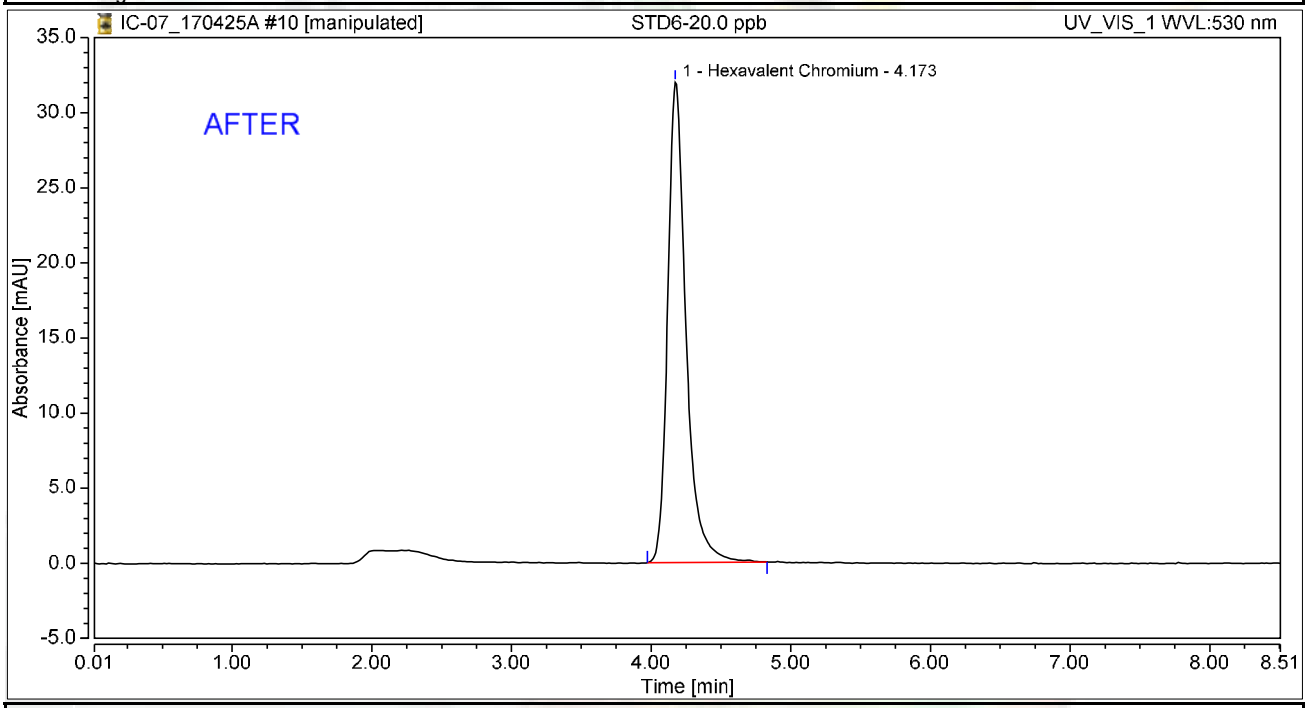
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.873	31.978	100.00	100.00	19.9794
Total:			**4.873**	**31.978**	**100.00**	**100.00**	

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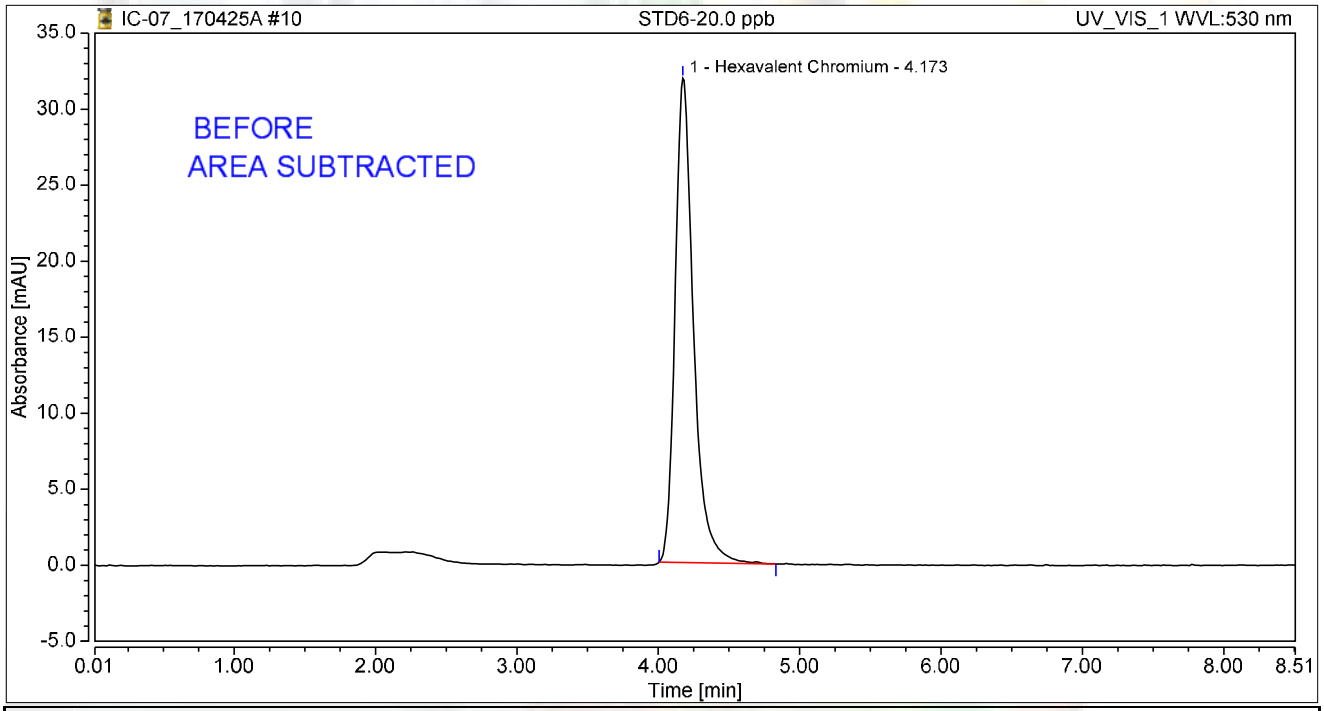
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.809	31.858	100.00	100.00	20.0099
Total:			**4.809**	**31.858**	**100.00**	**100.00**	

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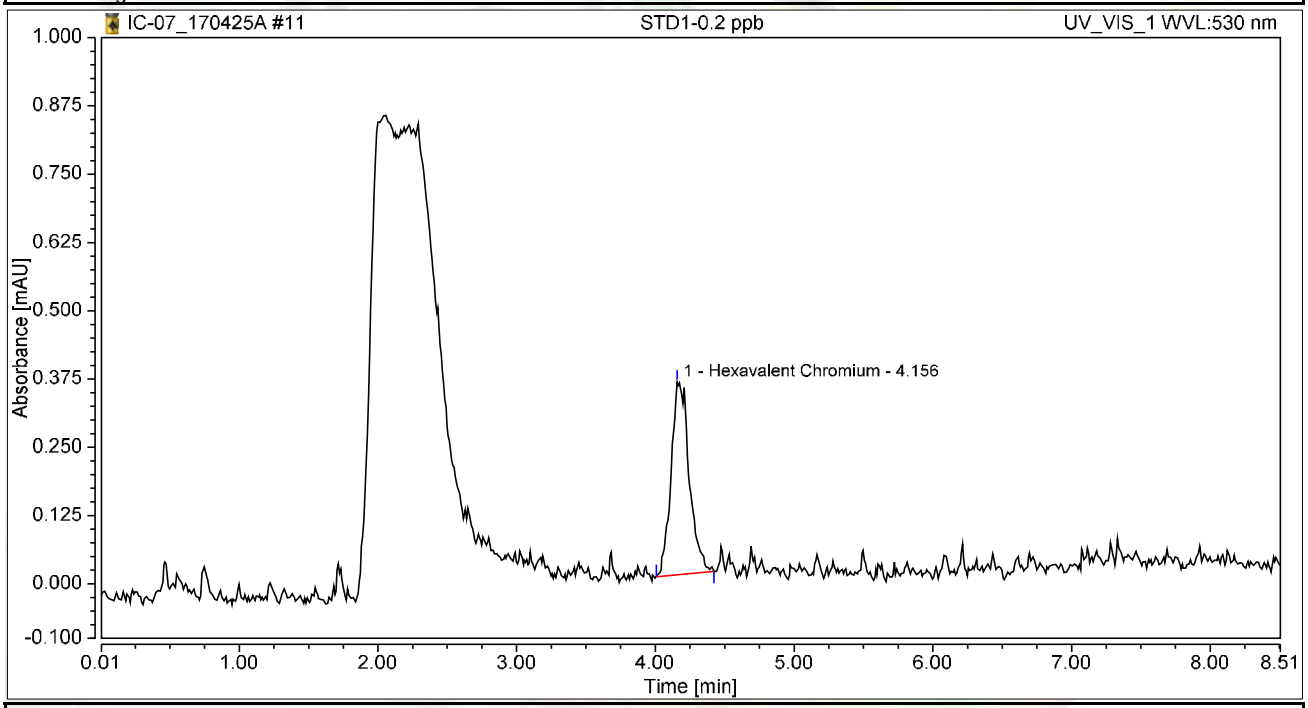
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



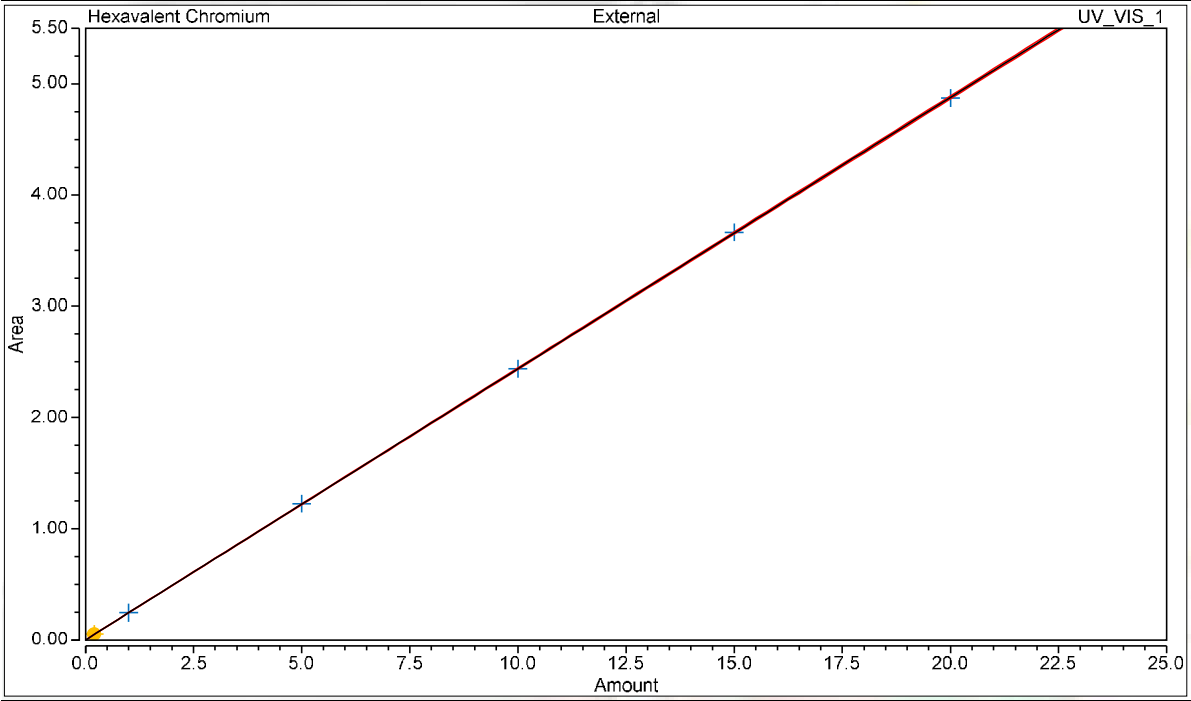
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.054	0.353	100.00	100.00	0.2201
Total:			**0.054**	**0.353**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2439
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99999

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

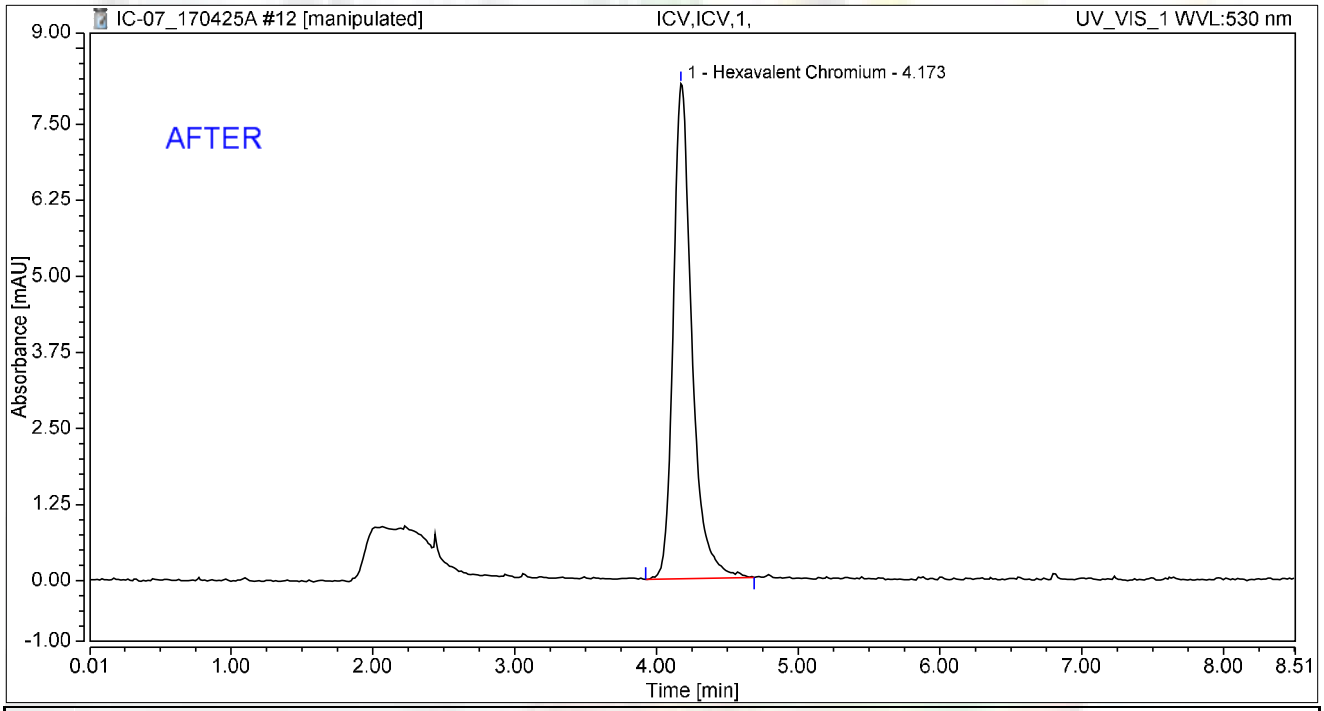
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD2-1.0 ppb	02	1.0000	0.2438	0.244	1.585
7	STD3-5.0 ppb	03	5.0000	1.2243	1.224	8.059
8	STD4-10.0 ppb	04	10.0000	2.4380	2.438	15.921
9	STD5-15.0 ppb	05	15.0000	3.6639	3.664	24.088
10	STD6-20.0 ppb	06	20.0000	4.8727	4.873	31.978
11	STD1-0.2 ppb	01	0.2000	0.0537	0.054	0.353

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.241	8.139	100.00	100.00	5.0868
Total:			**1.241**	**8.139**	**100.00**	**100.00**	

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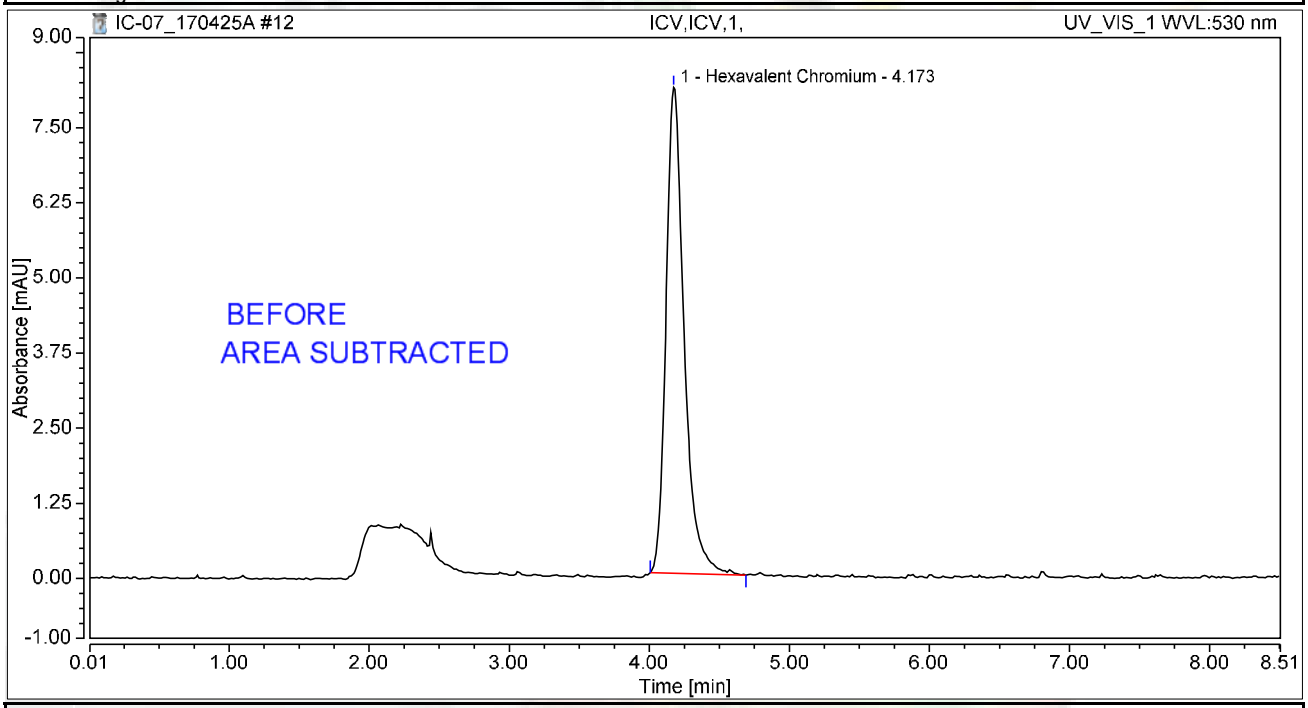
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.212	8.081	100.00	100.00	4.9703
Total:			**1.212**	**8.081**	**100.00**	**100.00**	

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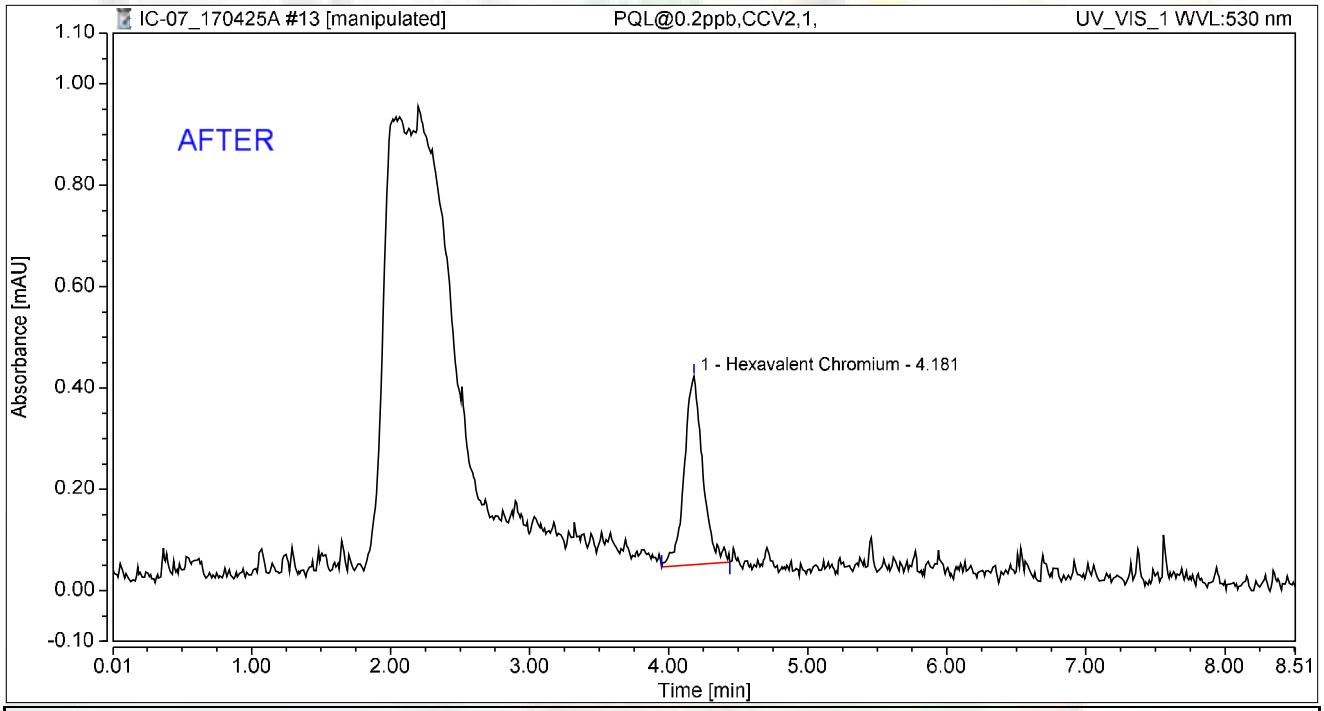
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.057	0.372	100.00	100.00	0.2353
Total:			**0.057**	**0.372**	**100.00**	**100.00**	

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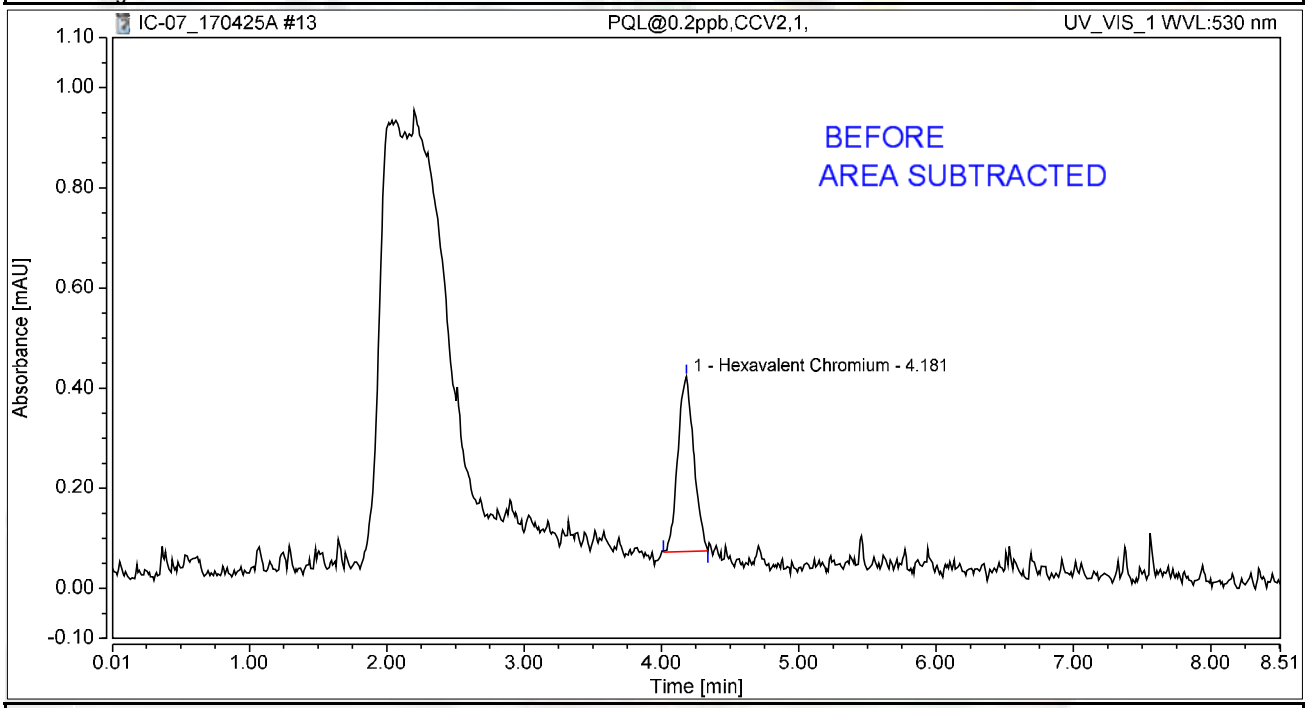
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.047	0.349	100.00	100.00	0.1927
Total:			**0.047**	**0.349**	**100.00**	**100.00**	

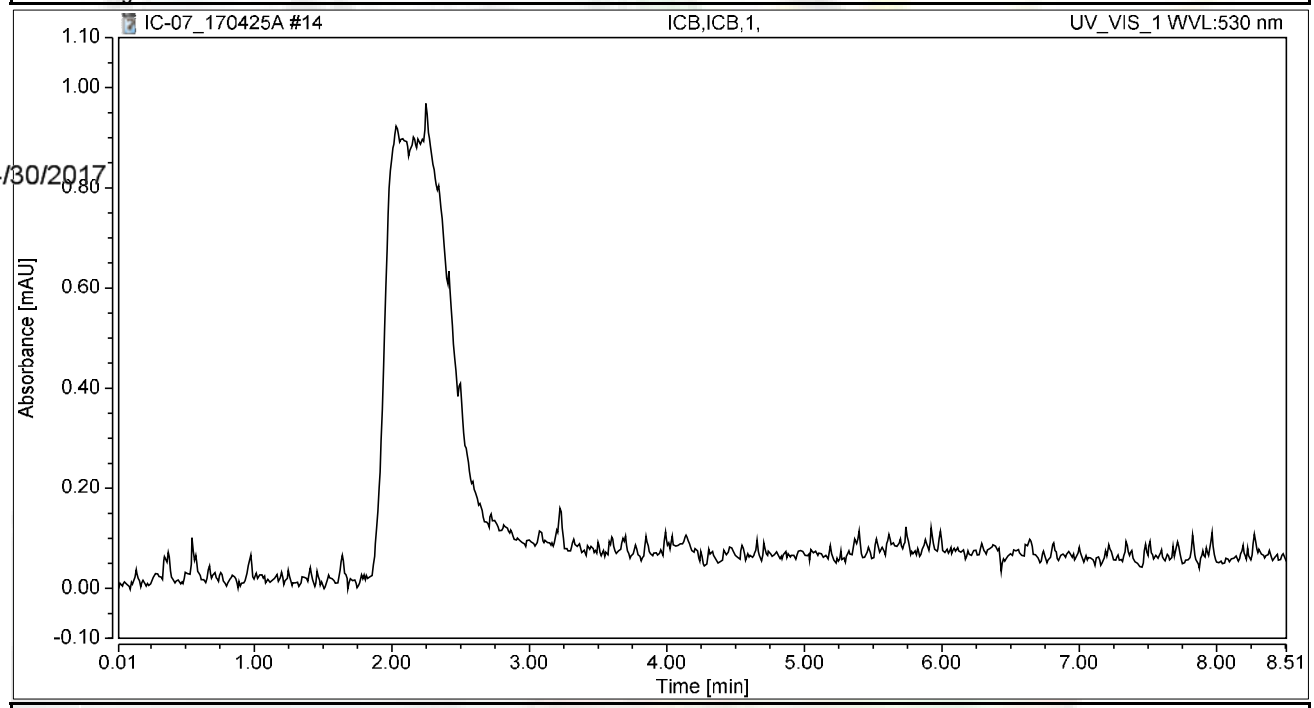
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



rba 4/30/2017

Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/12/17 9:33 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/12/17 9:44 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/12/17 9:53 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/12/17 10:03 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/12/17 10:12 AM	Reported
17	MB-R115201	MBLK	1	Hexavalent Chromium	05/12/17 10:21 AM	Reported
18	LCS-R115201	LCS	1	Hexavalent Chromium	05/12/17 10:31 AM	Reported
19	N024189-001A	SAMP	1	Hexavalent Chromium	05/12/17 10:40 AM	Reported
20	N024189-002A	SAMP	1	Hexavalent Chromium	05/12/17 10:50 AM	Reported
21	N024189-003A	SAMP	1	Hexavalent Chromium	05/12/17 10:59 AM	Not Reported
22	N024189-004A	SAMP	1	Hexavalent Chromium	05/12/17 11:09 AM	Reported
23	N024189-005A	SAMP	1	Hexavalent Chromium	05/12/17 11:18 AM	Reported
24	N024189-006A	SAMP	1	Hexavalent Chromium	05/12/17 11:28 AM	Not Reported
25	N024189-007A	SAMP	1	Hexavalent Chromium	05/12/17 11:37 AM	Reported
26	N024189-008A	SAMP	1	Hexavalent Chromium	05/12/17 11:47 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/12/17 11:56 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/12/17 12:06 PM	Reported
29	N024189-009A	SAMP	1	Hexavalent Chromium	05/12/17 12:15 PM	Reported
30	N024189-010A	SAMP	1	Hexavalent Chromium	05/12/17 12:24 PM	Reported
31	N024189-011A	SAMP	1	Hexavalent Chromium	05/12/17 12:34 PM	Reported
32	N024189-010ADUP	DUP	1	Hexavalent Chromium	05/12/17 12:43 PM	Reported
33	N024089-015A	SAMP	5	Hexavalent Chromium	05/12/17 12:53 PM	Reported
34	N024089-015AMS	MS	5	Hexavalent Chromium	05/12/17 1:03 PM	Reported
35	N024090-001A	SAMP	5	Hexavalent Chromium	05/12/17 1:12 PM	Reported
36	N024090-001AMS	MS	5	Hexavalent Chromium	05/12/17 1:21 PM	Reported
37	N024090-004A	SAMP	5	Hexavalent Chromium	05/12/17 1:31 PM	Reported
38	N024090-004AMS	MS	5	Hexavalent Chromium	05/12/17 1:40 PM	Not Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/12/17 1:50 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/12/17 1:59 PM	Reported
41	N024090-001AMSD	MSD	5	Hexavalent Chromium	05/12/17 2:09 PM	Reported
42	N024189-003A	SAMP	1	Hexavalent Chromium	05/12/17 2:18 PM	Reported

INJECTION LOG: 170512A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024189-006A	SAMP	1	Hexavalent Chromium	05/12/17 2:27 PM	Reported
44	N024090-004AMS	MS	5	Hexavalent Chromium	05/12/17 2:37 PM	Reported
45	LCS-R115202	LCS	1	Hexavalent Chromium	05/12/17 2:49 PM	Reported
46	MB-R115202	MBLK	1	Hexavalent Chromium	05/12/17 3:00 PM	Reported
47	N024184-001A	SAMP	1	Hexavalent Chromium	05/12/17 3:09 PM	Reported
48	N024184-001AMS	MS	1	Hexavalent Chromium	05/12/17 3:19 PM	Reported
49	N024184-010A	SAMP	1	Hexavalent Chromium	05/12/17 3:28 PM	Reported
50	N024184-010ADUP	DUP	1	Hexavalent Chromium	05/12/17 3:37 PM	Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/12/17 3:47 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/12/17 3:56 PM	Reported
53	N024184-001AMSD	MSD	1	Hexavalent Chromium	05/12/17 4:06 PM	Reported
54	N024184-010AMS	MS	1	Hexavalent Chromium	05/12/17 4:15 PM	Reported
55	N024184-002A	SAMP	1	Hexavalent Chromium	05/12/17 4:25 PM	Reported
56	N024184-002AMS	MS	1	Hexavalent Chromium	05/12/17 4:34 PM	Reported
57	N024184-003A	SAMP	1	Hexavalent Chromium	05/12/17 4:44 PM	Reported
58	N024184-003AMS	MS	1	Hexavalent Chromium	05/12/17 4:53 PM	Reported
59	N024184-004A	SAMP	1	Hexavalent Chromium	05/12/17 5:03 PM	Reported
60	N024184-004AMS	MS	1	Hexavalent Chromium	05/12/17 5:12 PM	Reported
61	N024184-005A	SAMP	1	Hexavalent Chromium	05/12/17 5:22 PM	Reported
62	N024184-005AMS	MS	1	Hexavalent Chromium	05/12/17 5:31 PM	Reported
63	CCV-5	CCV	1	Hexavalent Chromium	05/12/17 5:40 PM	Reported
64	CCB-5	CCB	1	Hexavalent Chromium	05/12/17 5:50 PM	Reported
65	N024184-006A	SAMP	1	Hexavalent Chromium	05/12/17 5:59 PM	Reported
66	N024184-006AMS	MS	1	Hexavalent Chromium	05/12/17 6:09 PM	Reported
67	N024184-007A	SAMP	1	Hexavalent Chromium	05/12/17 6:18 PM	Reported
68	N024184-007AMS	MS	1	Hexavalent Chromium	05/12/17 6:28 PM	Reported
69	N024184-008A	SAMP	1	Hexavalent Chromium	05/12/17 6:37 PM	Reported
70	N024184-008AMS	MS	1	Hexavalent Chromium	05/12/17 6:47 PM	Reported
71	N024184-009A	SAMP	1	Hexavalent Chromium	05/12/17 6:56 PM	Reported
72	N024184-009AMS	MS	1	Hexavalent Chromium	05/12/17 7:06 PM	Reported
73	N024184-011A	SAMP	1	Hexavalent Chromium	05/12/17 7:15 PM	Reported
74	N024184-011AMS	MS	1	Hexavalent Chromium	05/12/17 7:25 PM	Reported
75	CCV-6	CCV1	1	Hexavalent Chromium	05/12/17 7:34 PM	Reported
76	CCB-6	CCB	1	Hexavalent Chromium	05/12/17 7:43 PM	Reported
77	N024184-012A	SAMP	1	Hexavalent Chromium	05/12/17 7:53 PM	Reported
78	N024184-012AMS	MS	1	Hexavalent Chromium	05/12/17 8:02 PM	Reported
79	N024184-013A	SAMP	1	Hexavalent Chromium	05/12/17 8:12 PM	Reported
80	N024184-013AMS	MS	1	Hexavalent Chromium	05/12/17 8:21 PM	Reported
81	N024184-014A	SAMP	1	Hexavalent Chromium	05/12/17 8:31 PM	Reported
82	N024184-014AMS	MS	1	Hexavalent Chromium	05/12/17 8:40 PM	Reported
83	CCV-7	CCV	1	Hexavalent Chromium	05/12/17 8:50 PM	Reported
84	CCB-7	CCB	1	Hexavalent Chromium	05/12/17 8:59 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170512A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**12/May/17 21:29:58**
No. of Injections:	**87**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/12/2017 09:33	Finished	
13	BLANK	2	1000	Unknown		05/12/2017 09:44	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/12/2017 09:53	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/12/2017 10:03	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/12/2017 10:12	Finished	CCB R170428A
17	MB-H2O,MBLK,1	6	1000	Unknown		05/12/2017 10:21	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/12/2017 10:31	Finished	LCS, IWST-170330B
19	N024189-001A,SAMP	8	1000	Unknown		05/12/2017 10:40	Finished	SAMP, 10mL
20	N024189-002A,SAMP	9	1000	Unknown		05/12/2017 10:50	Finished	SAMP, 10mL
21	N024189-003A,SAMP	10	1000	Unknown		05/12/2017 10:59	Finished	SAMP, 10mL
22	N024189-004A,SAMP	11	1000	Unknown		05/12/2017 11:09	Finished	SAMP, 10mL
23	N024189-005A,SAMP	12	1000	Unknown		05/12/2017 11:18	Finished	SAMP, 10mL
24	N024189-006A,SAMP	13	1000	Unknown		05/12/2017 11:28	Finished	SAMP, 10mL
25	N024189-007A,SAMP	14	1000	Unknown		05/12/2017 11:37	Finished	SAMP, 10mL
26	N024189-008A,SAMP	15	1000	Unknown		05/12/2017 11:47	Finished	SAMP, 10mL
27	CCV-2,CCV1,1,	16	1000	Unknown		05/12/2017 11:56	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	17	1000	Unknown		05/12/2017 12:06	Finished	CCB R170419B
29	N024189-009A,SAMP	18	1000	Unknown		05/12/2017 12:15	Finished	SAMP, 10mL
30	N024189-010A,SAMP	19	1000	Unknown		05/12/2017 12:24	Finished	SAMP, 10mL
31	N024189-011A,SAMP	20	1000	Unknown		05/12/2017 12:34	Finished	SAMP, 10mL
32	N024189-010ADUP,D	21	1000	Unknown		05/12/2017 12:43	Finished	DUP, 10mL
33	N024089-015A,SAMP	22	1000	Unknown		05/12/2017 12:53	Finished	SAMP, 2>10mL
34	N024089-015AMS,MS	23	1000	Unknown		05/12/2017 13:03	Finished	MS (1ppb), IWST-170330B,2>1
35	N024090-001A,SAMP	24	1000	Unknown		05/12/2017 13:12	Finished	SAMP, 2>10mL
36	N024090-001AMS,MS	25	1000	Unknown		05/12/2017 13:21	Finished	MS (1ppb), IWST-170330B,2>1
37	N024090-004A,SAMP	26	1000	Unknown		05/12/2017 13:31	Finished	SAMP, 2>10mL
38	N024090-004AMS,MS	27	1000	Unknown		05/12/2017 13:40	Finished	MS (1ppb), IWST-170330B,2>1
39	CCV-3,CCV,1,	28	1000	Unknown		05/12/2017 13:50	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	29	1000	Unknown		05/12/2017 13:59	Finished	CCB R170428A
41	N024090-001AMSD,M	30	1000	Unknown		05/12/2017 14:09	Finished	MSD (1ppb), IWST-170330B,2>
42	N024189-003A,SAMP	31	1000	Unknown		05/12/2017 14:18	Finished	SAMP, 10mL
43	N024189-006A,SAMP	32	1000	Unknown		05/12/2017 14:27	Finished	SAMP, 10mL
44	N024090-004AMS,MS	33	1000	Unknown		05/12/2017 14:37	Finished	MS (1ppb), IWST-170330B,2>1
45	LCS-2,LCS,1	1	1000	Unknown		05/12/2017 14:49	Finished	LCS, IWST-170330B
46	MB-2,MBLK,1	2	1000	Unknown		05/12/2017 15:00	Finished	MB R170428A
47	N024184-001A,SAMP	3	1000	Unknown		05/12/2017 15:09	Finished	SAMP, 10mL
48	N024184-001AMS,MS	4	1000	Unknown		05/12/2017 15:19	Finished	MS (1ppb), IWST-170330B,0.2
49	N024184-010A,SAMP	5	1000	Unknown		05/12/2017 15:28	Finished	SAMP, 10mL
50	N024184-010ADUP,D	6	1000	Unknown		05/12/2017 15:37	Finished	DUP, 10mL
51	CCV-4,CCV1,1,	7	1000	Unknown		05/12/2017 15:47	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	8	1000	Unknown		05/12/2017 15:56	Finished	CCB R170428A
53	N024184-001AMSD,M	9	1000	Unknown		05/12/2017 16:06	Finished	MSD (1ppb), IWST-170330B,0.
54	N024184-010AMS,MS	10	1000	Unknown		05/12/2017 16:15	Finished	MS (1ppb), IWST-170330B,0.2
55	N024184-002A,SAMP	11	1000	Unknown		05/12/2017 16:25	Finished	SAMP, 10mL
56	N024184-002AMS,MS	12	1000	Unknown		05/12/2017 16:34	Finished	MS (1ppb), IWST-170330B,0.2
57	N024184-003A,SAMP	13	1000	Unknown		05/12/2017 16:44	Finished	SAMP, 10mL
58	N024184-003AMS,MS	14	1000	Unknown		05/12/2017 16:53	Finished	MS (1ppb), IWST-170330B,0.2
59	N024184-004A,SAMP	15	1000	Unknown		05/12/2017 17:03	Finished	SAMP, 10mL
60	N024184-004AMS,MS	16	1000	Unknown		05/12/2017 17:12	Finished	MS (1ppb), IWST-170330B,0.2

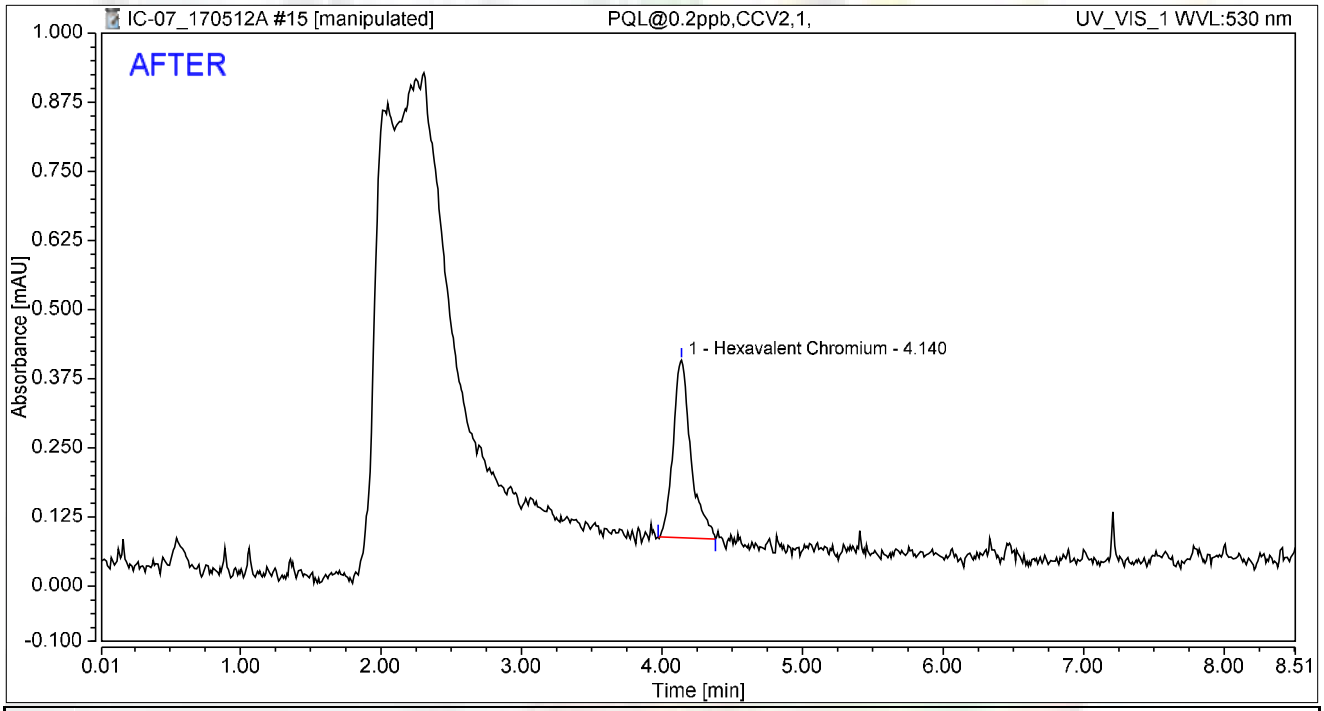
61	N024184-005A,SAMP	17	1000	Unknown		05/12/2017 17:22	Finished	SAMP, 10mL
62	N024184-005AMS,MS	18	1000	Unknown		05/12/2017 17:31	Finished	MS (1ppb), IWST-170330B,0.2
63	CCV-5,CCV,1,	19	1000	Unknown		05/12/2017 17:40	Finished	CCV @5ppb, IWST-170330B
64	CCB-5,CCB,1,	20	1000	Unknown		05/12/2017 17:50	Finished	CCB R170428A
65	N024184-006A,SAMP	21	1000	Unknown		05/12/2017 17:59	Finished	SAMP, 10mL
66	N024184-006AMS,MS	22	1000	Unknown		05/12/2017 18:09	Finished	MS (1ppb), IWST-170330B,0.2
67	N024184-007A,SAMP	23	1000	Unknown		05/12/2017 18:18	Finished	SAMP, 10mL
68	N024184-007AMS,MS	24	1000	Unknown		05/12/2017 18:28	Finished	MS (1ppb), IWST-170330B,0.2
69	N024184-008A,SAMP	25	1000	Unknown		05/12/2017 18:37	Finished	SAMP, 10mL
70	N024184-008AMS,MS	26	1000	Unknown		05/12/2017 18:47	Finished	MS (1ppb), IWST-170330B,0.2
71	N024184-009A,SAMP	27	1000	Unknown		05/12/2017 18:56	Finished	SAMP, 10mL
72	N024184-009AMS,MS	28	1000	Unknown		05/12/2017 19:06	Finished	MS (1ppb), IWST-170330B,0.2
73	N024184-011A,SAMP	29	1000	Unknown		05/12/2017 19:15	Finished	SAMP, 10mL
74	N024184-011AMS,MS	30	1000	Unknown		05/12/2017 19:25	Finished	MS (1ppb), IWST-170330B,0.2
75	CCV-6,CCV1,1,	31	1000	Unknown		05/12/2017 19:34	Finished	CCV @10ppb, IWST-170330B
76	CCB-6,CCB,1,	32	1000	Unknown		05/12/2017 19:43	Finished	CCB R170428A
77	N024184-012A,SAMP	33	1000	Unknown		05/12/2017 19:53	Finished	SAMP, 10mL
78	N024184-012AMS,MS	34	1000	Unknown		05/12/2017 20:02	Finished	MS (1ppb), IWST-170330B,0.2
79	N024184-013A,SAMP	35	1000	Unknown		05/12/2017 20:12	Finished	SAMP, 10mL
80	N024184-013AMS,MS	36	1000	Unknown		05/12/2017 20:21	Finished	MS (1ppb), IWST-170330B,0.2
81	N024184-014A,SAMP	37	1000	Unknown		05/12/2017 20:31	Finished	SAMP, 10mL
82	N024184-014AMS,MS	38	1000	Unknown		05/12/2017 20:40	Finished	MS (1ppb), IWST-170330B,0.2
83	CCV-7,CCV,1,	39	1000	Unknown		05/12/2017 20:50	Finished	CCV @5ppb, IWST-170330B
84	CCB-7,CCB,1,	40	1000	Unknown		05/12/2017 20:59	Finished	CCB R170428A
85	SHUTDOWN	41	1000	Unknown		05/12/2017 21:09	Finished	
86	Eluent: R170511F	42	1000	Unknown		n.a.	Finished	Eluent
87	PCR: R170511G	43	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.047	0.321	100.00	100.00	0.1936
Total:			**0.047**	**0.321**	**100.00**	**100.00**	

rba 5/16/2017

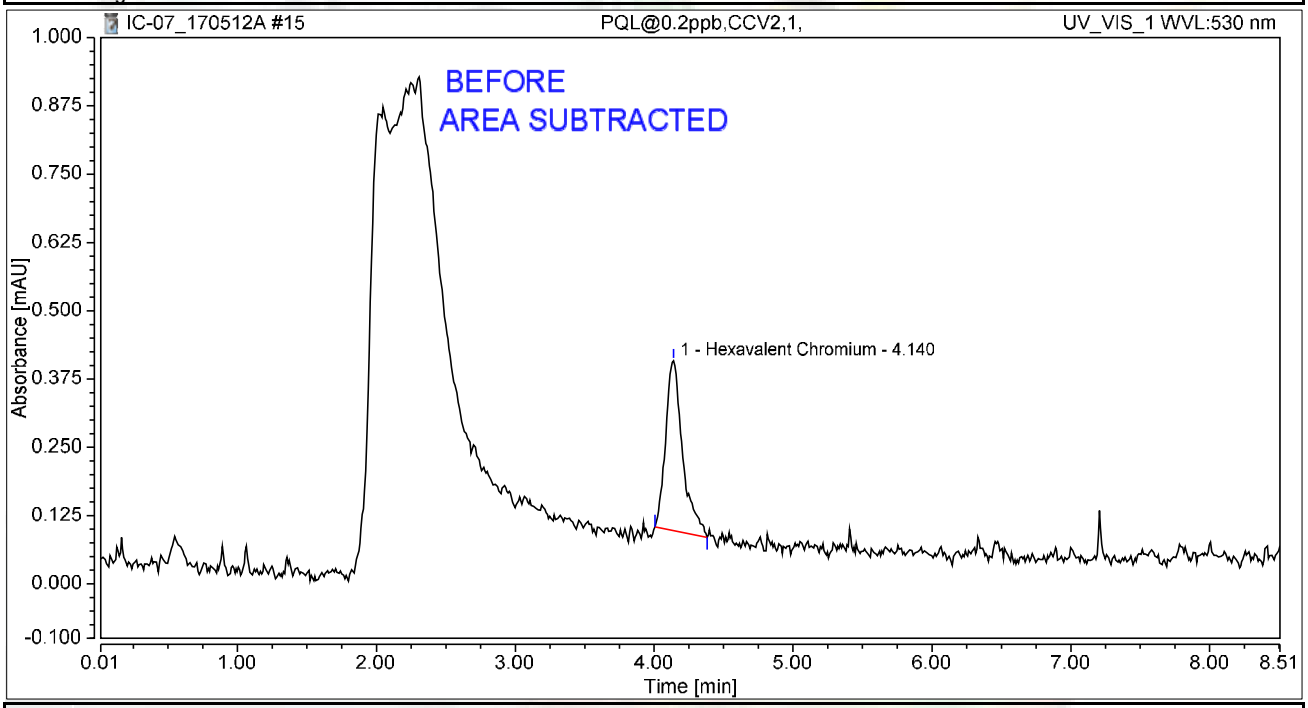
Reviewed by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 10:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.044	0.311	100.00	100.00	0.1809
Total:			**0.044**	**0.311**	**100.00**	**100.00**	

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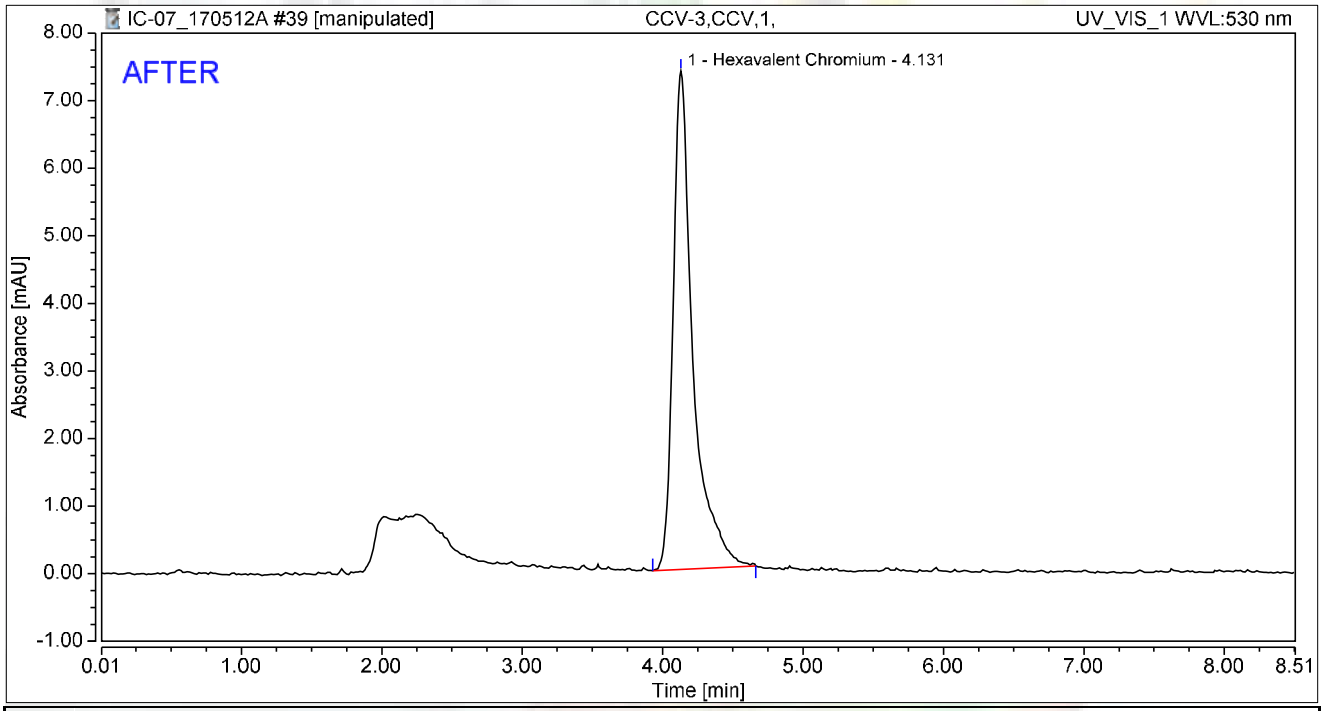
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 13:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.206	7.375	100.00	100.00	4.9440
Total:			**1.206**	**7.375**	**100.00**	**100.00**	

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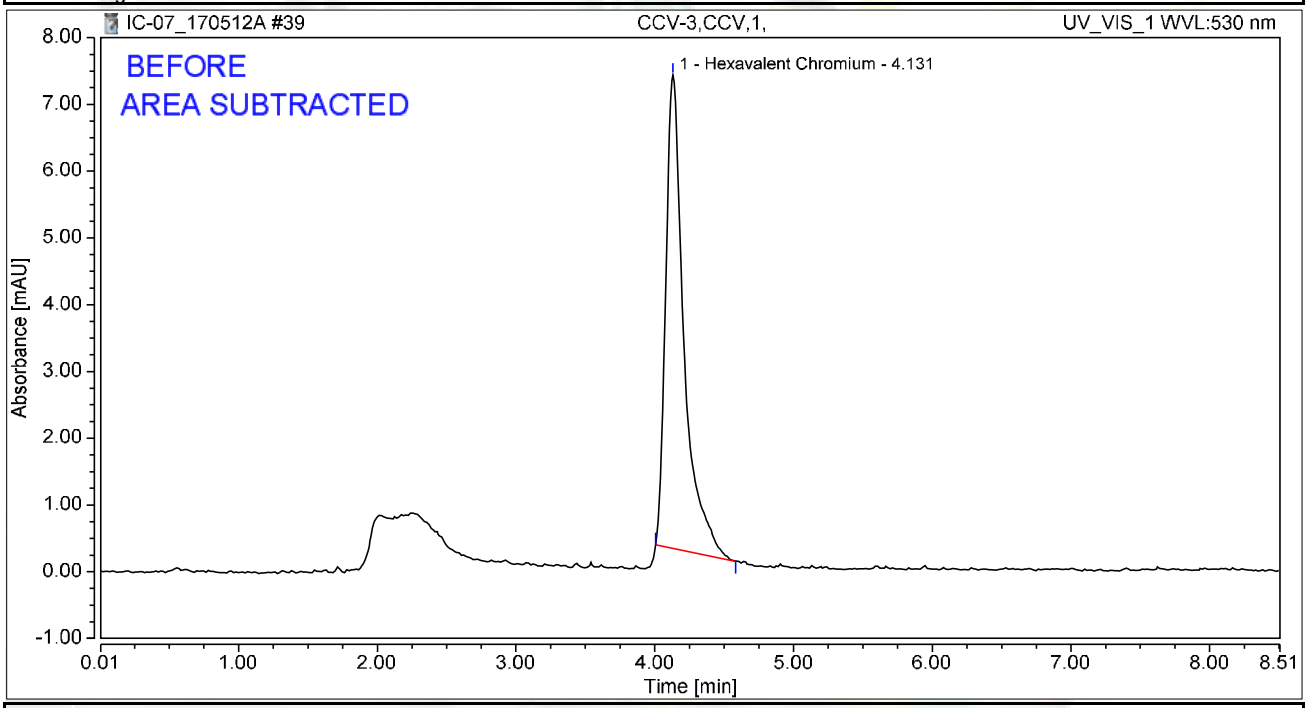
Reviewed
by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 13:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.082	7.089	100.00	100.00	4.4358
Total:			**1.082**	**7.089**	**100.00**	**100.00**	

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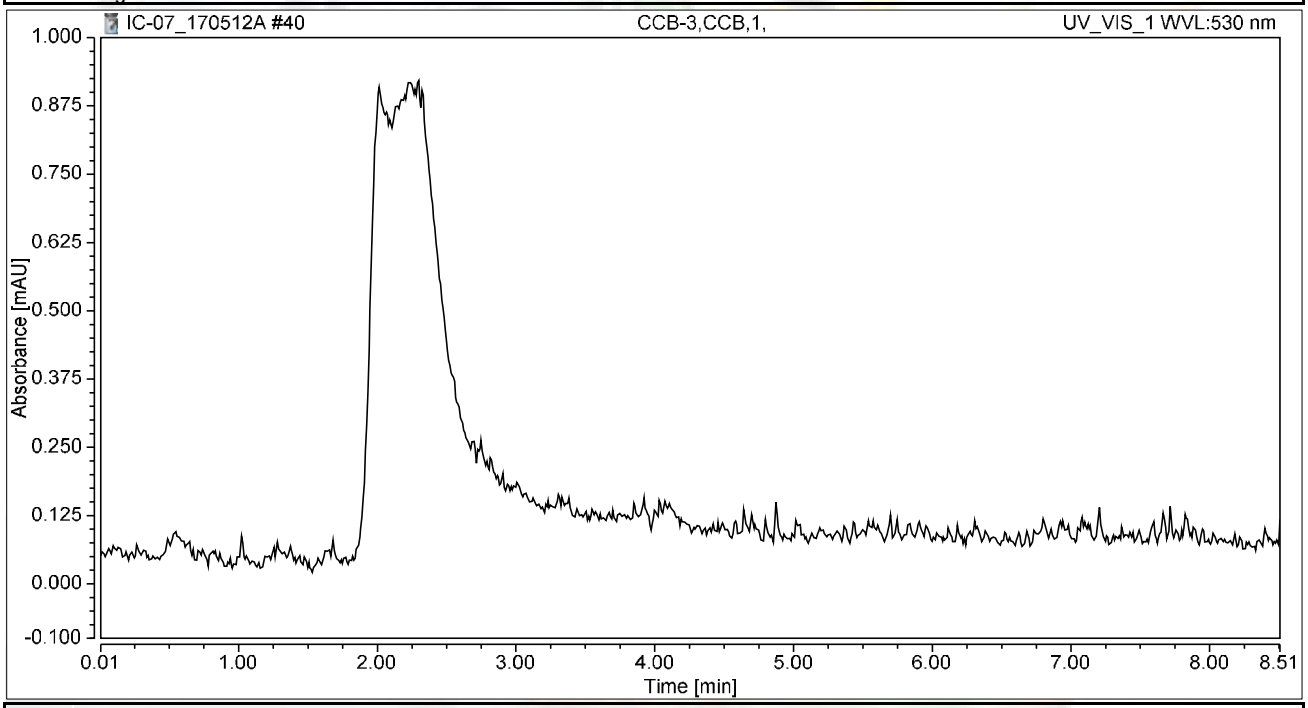
Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 13:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

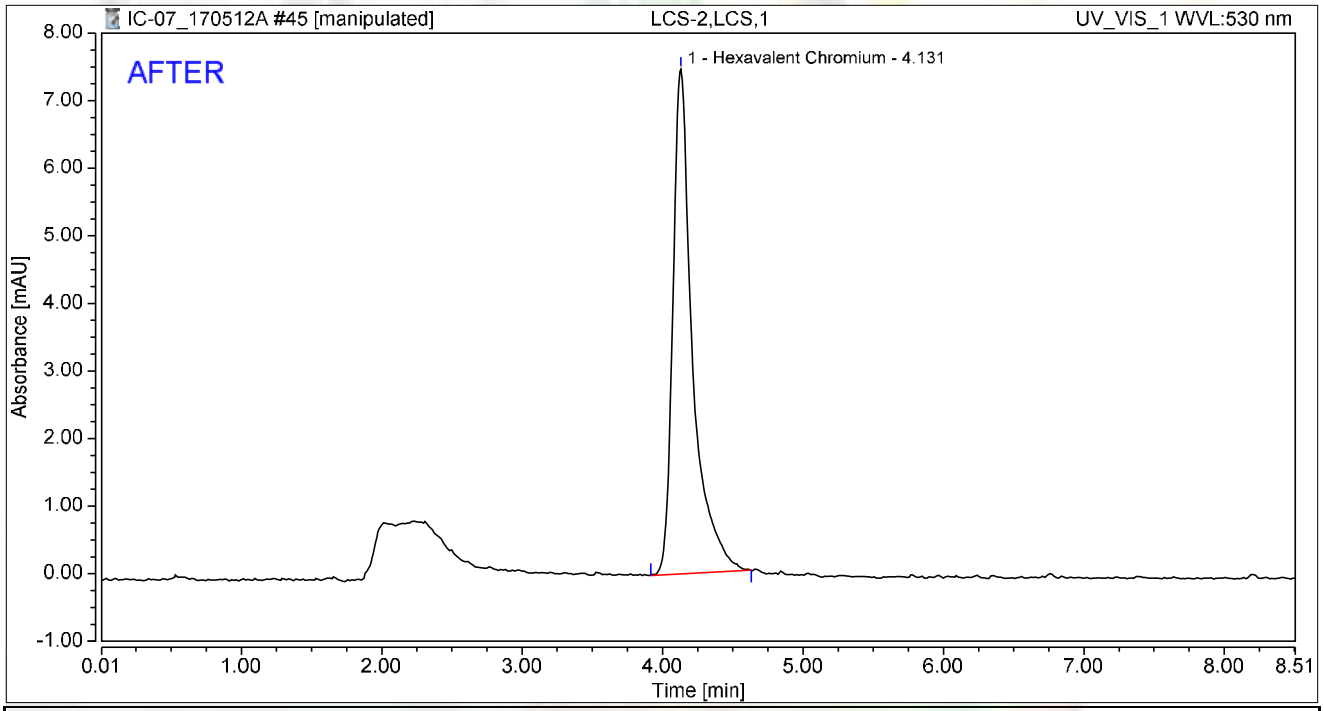
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.213	7.469	100.00	100.00	4.9755
Total:			**1.213**	**7.469**	**100.00**	**100.00**	

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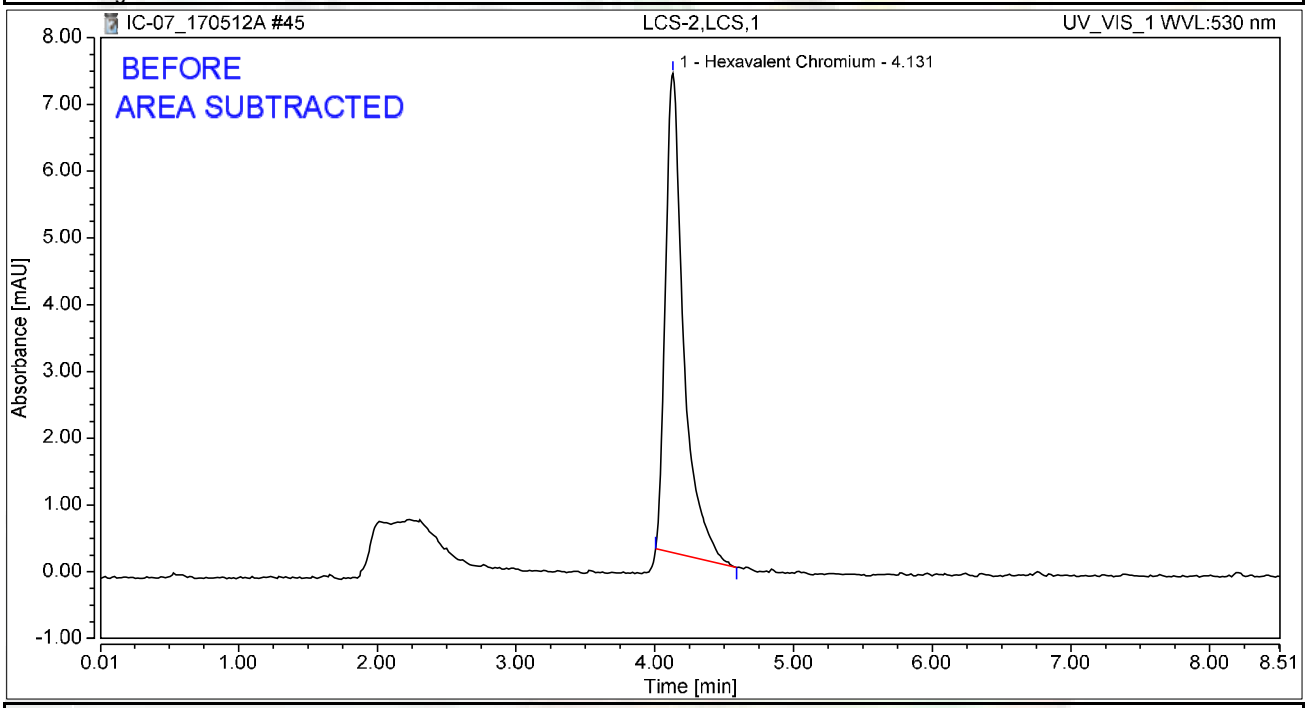
Reviewed by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 14:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.096	7.182	100.00	100.00	4.4950
Total:			**1.096**	**7.182**	**100.00**	**100.00**	

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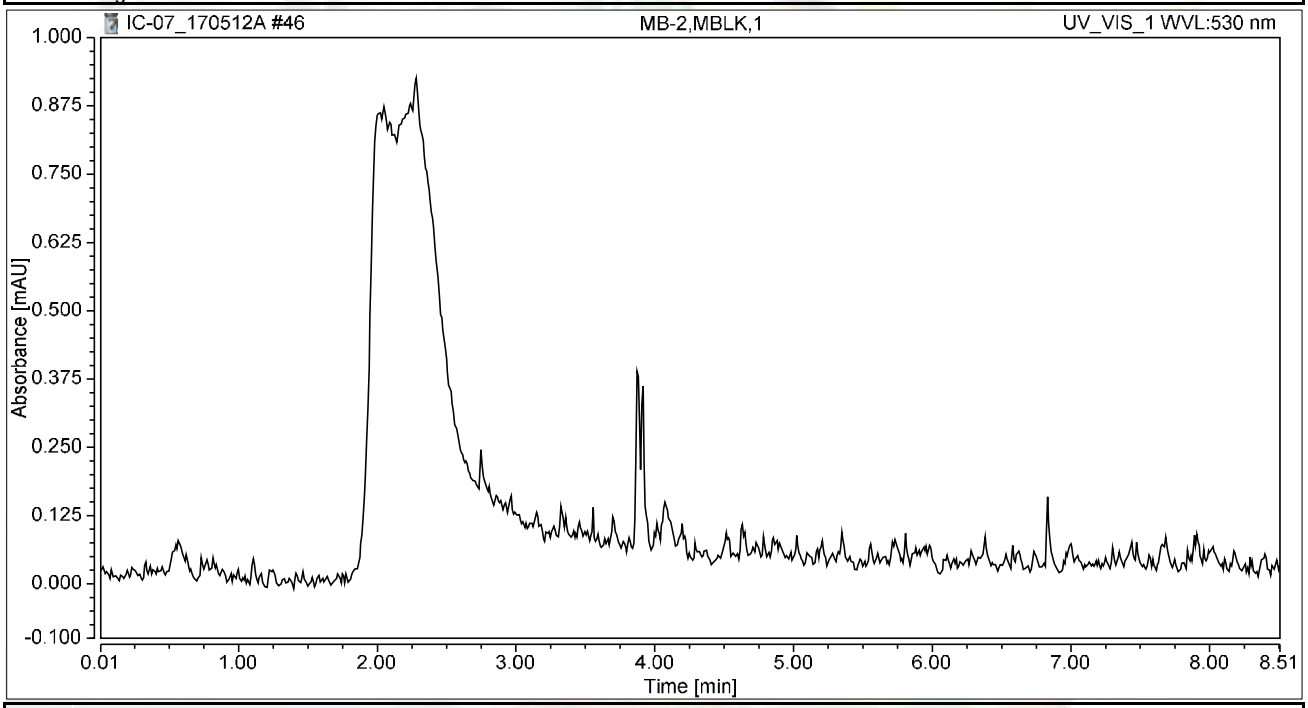
Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

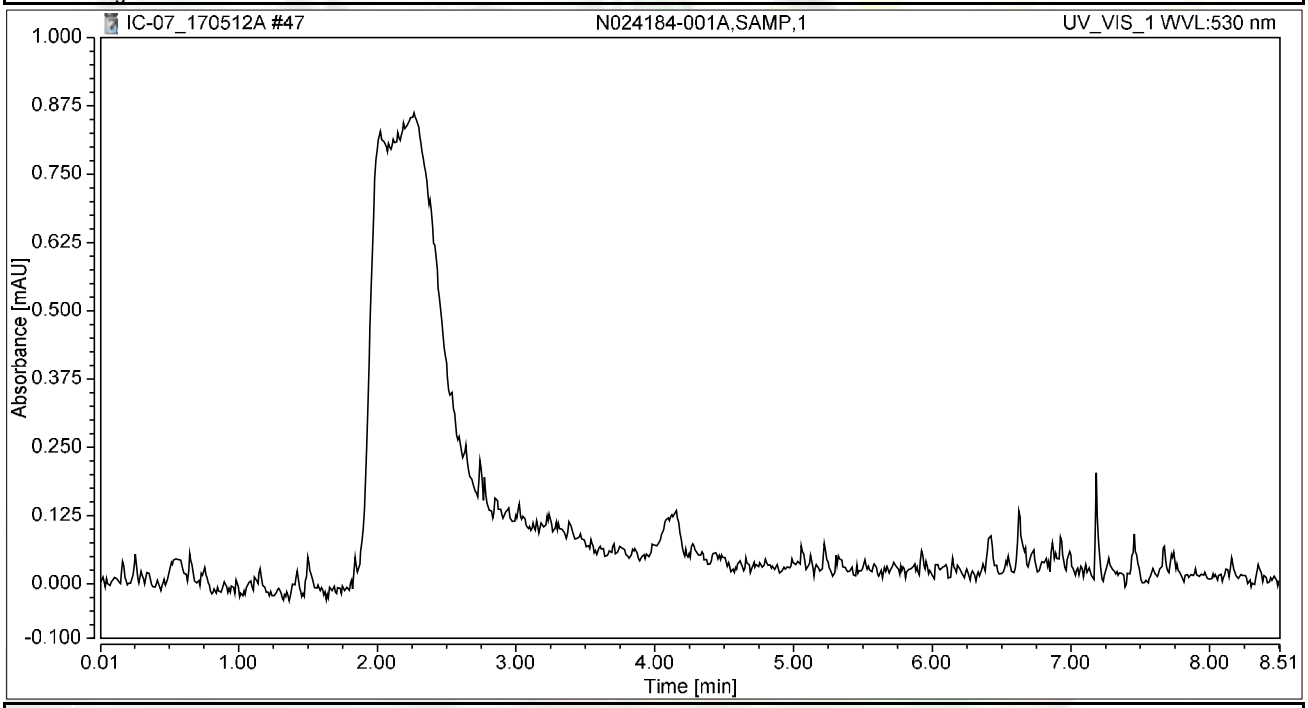
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

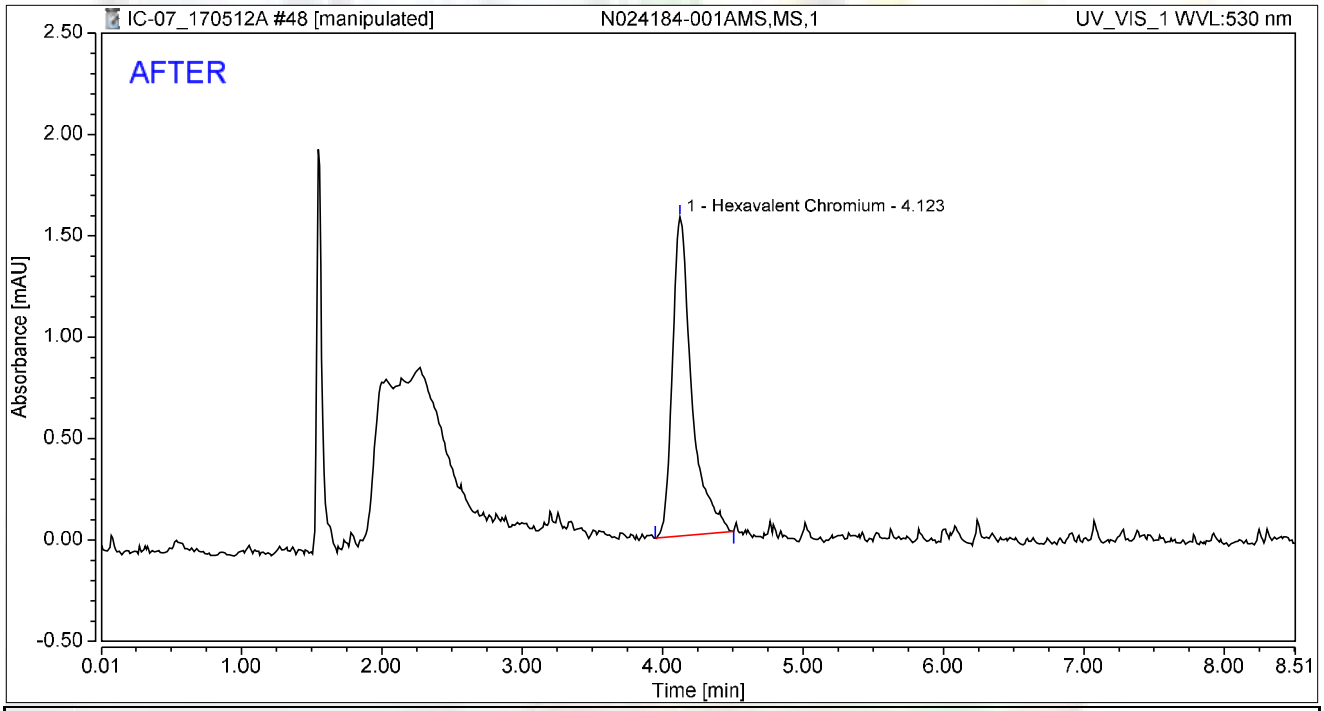
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.252	1.573	100.00	100.00	1.0330
Total:			**0.252**	**1.573**	**100.00**	**100.00**	

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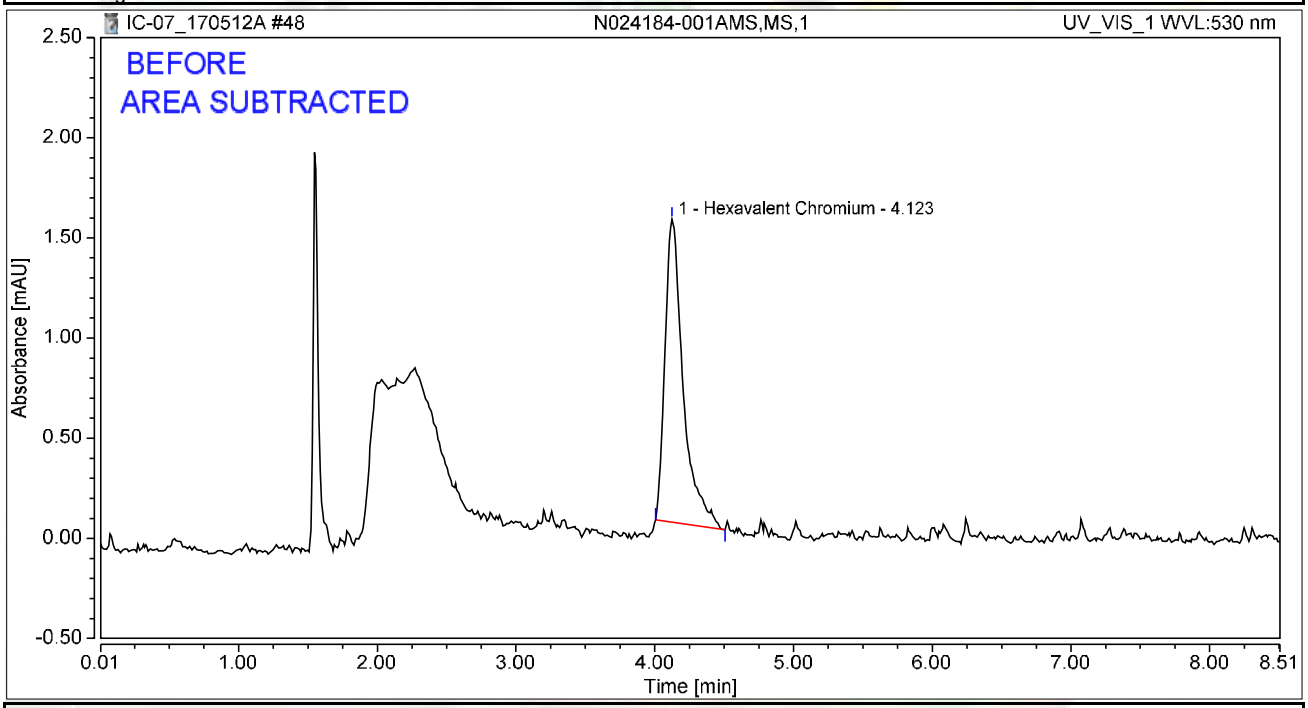
Reviewed by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.231	1.513	100.00	100.00	0.9461
Total:			**0.231**	**1.513**	**100.00**	**100.00**	

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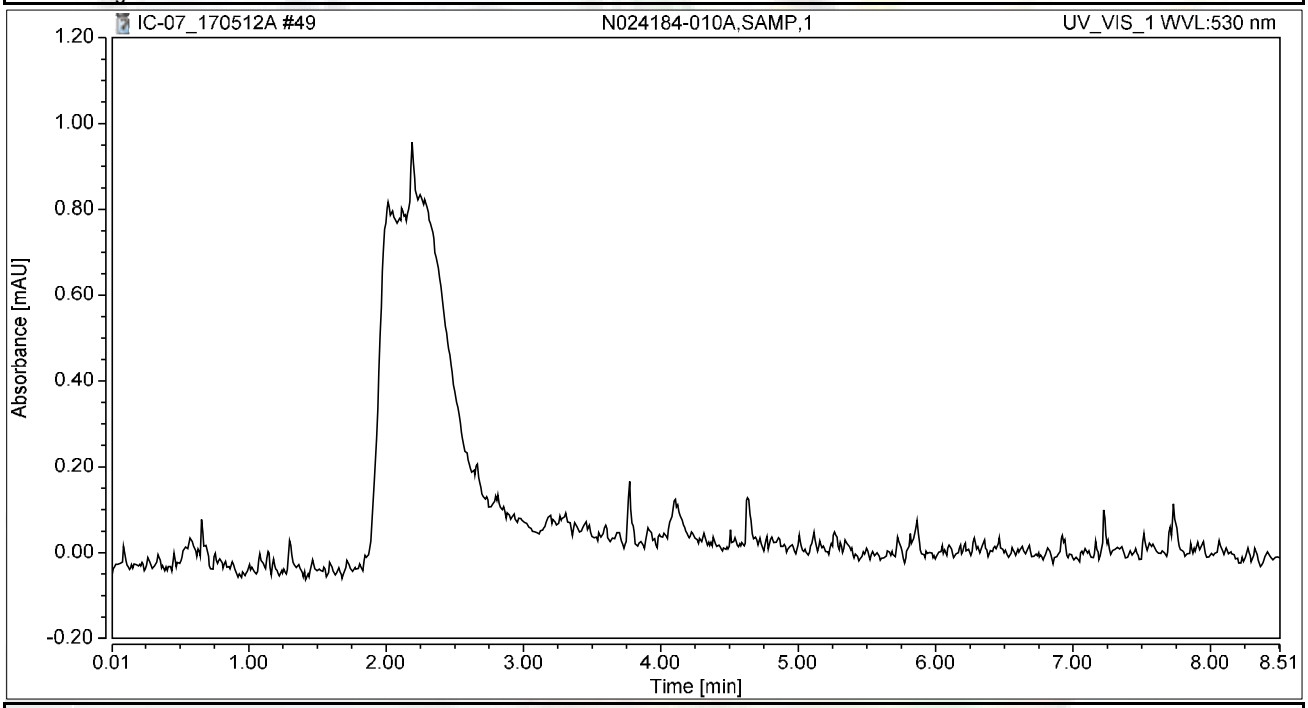
Chromatogram and Results

Injection Details

Injection Name:	**N024184-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

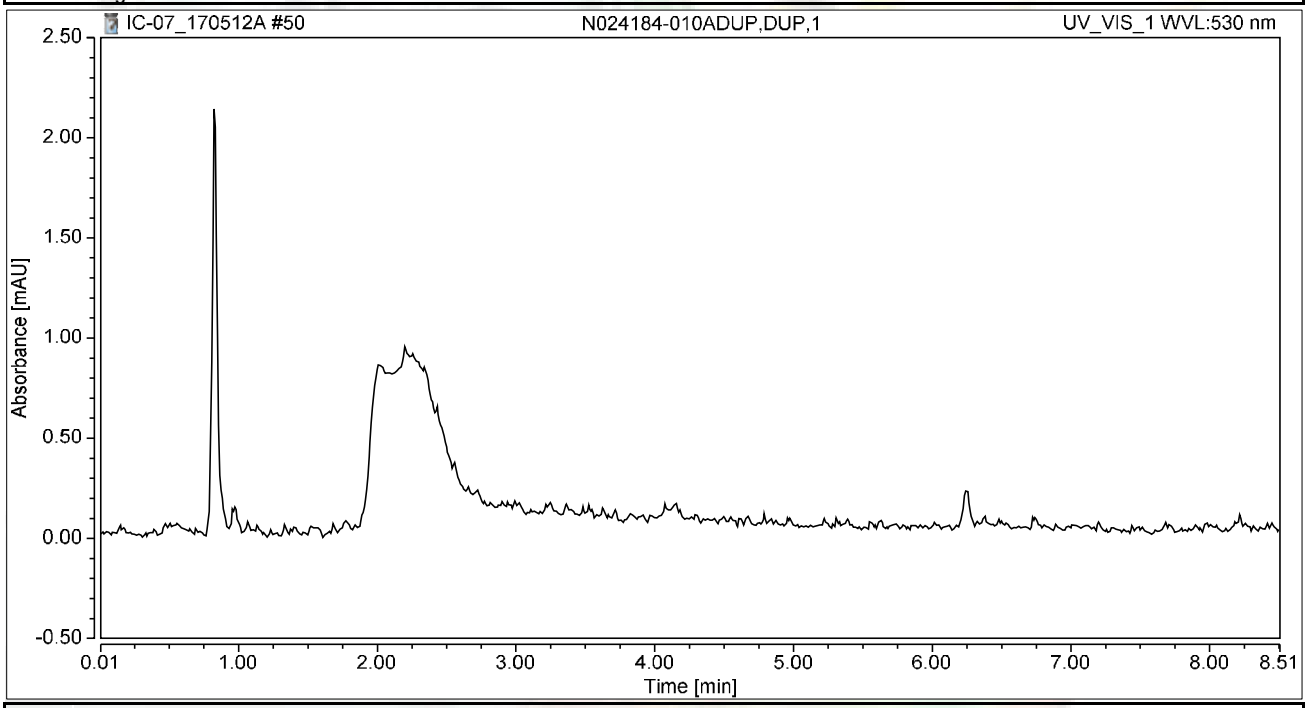
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-010ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

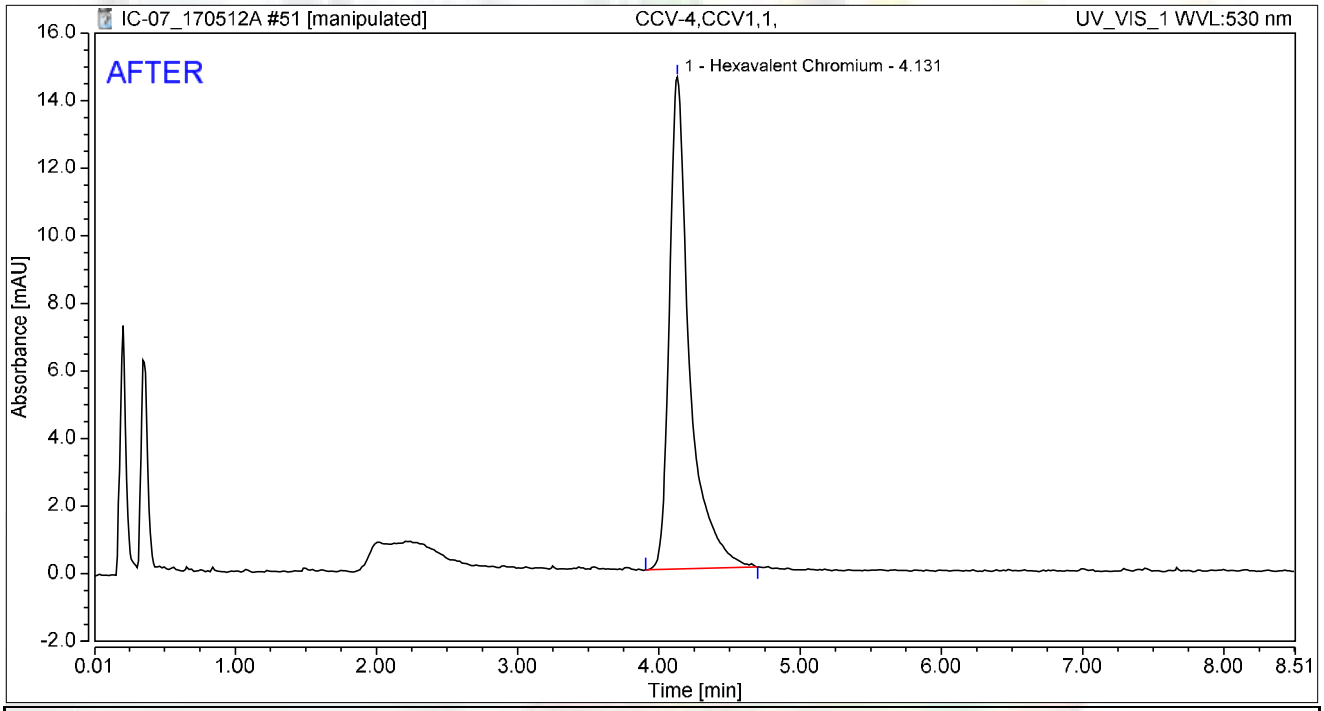
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.405	14.556	100.00	100.00	9.8614
Total:			**2.405**	**14.556**	**100.00**	**100.00**	

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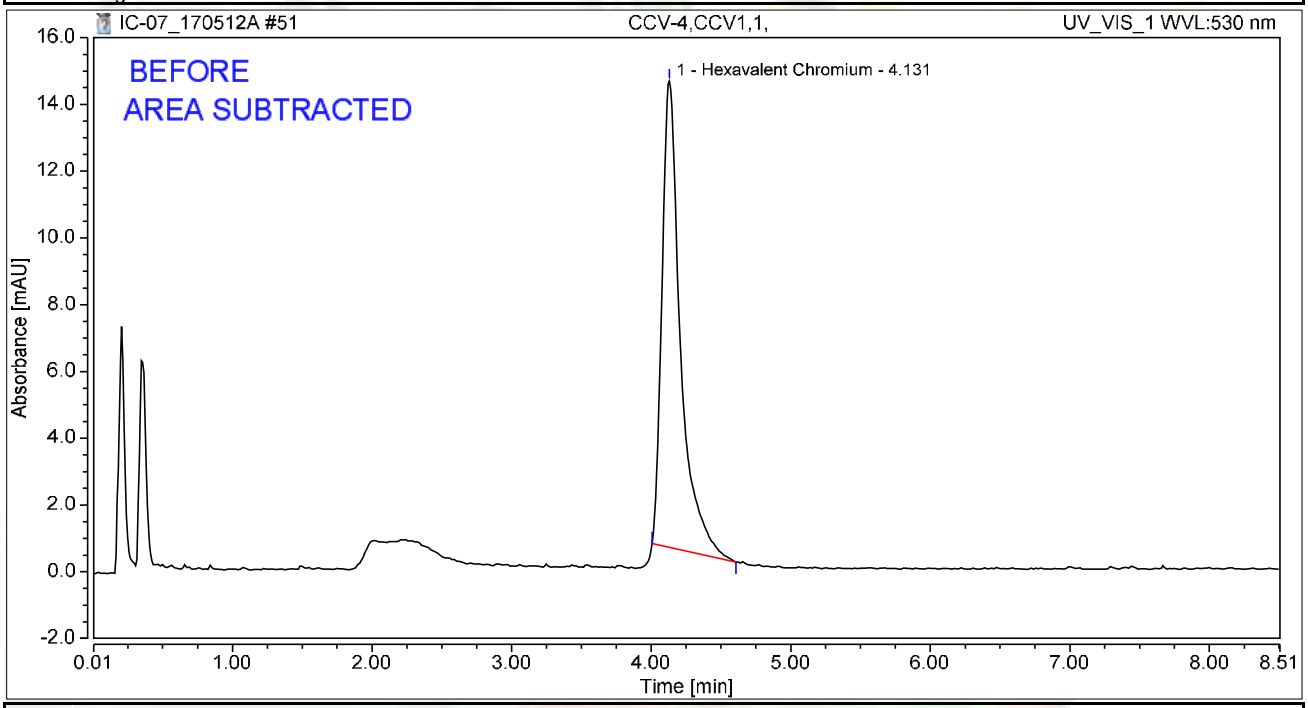
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.147	13.975	100.00	100.00	8.8016
Total:			**2.147**	**13.975**	**100.00**	**100.00**	

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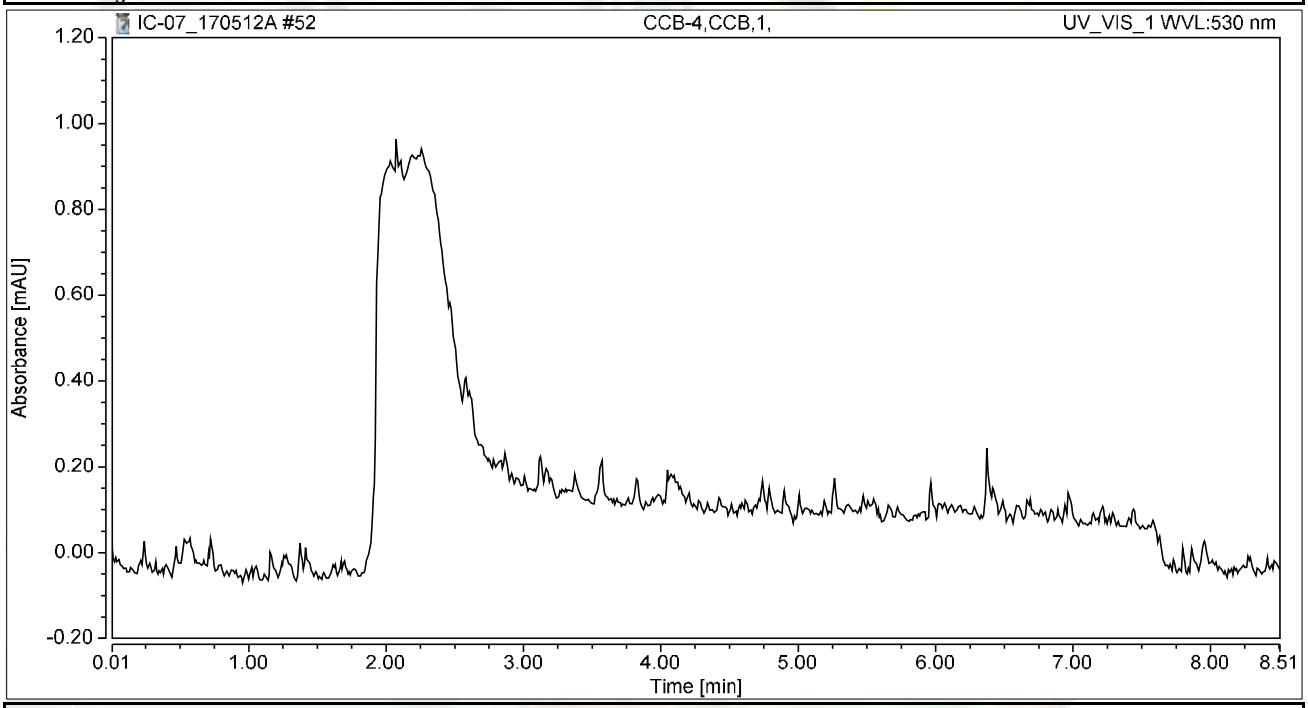
Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 15:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

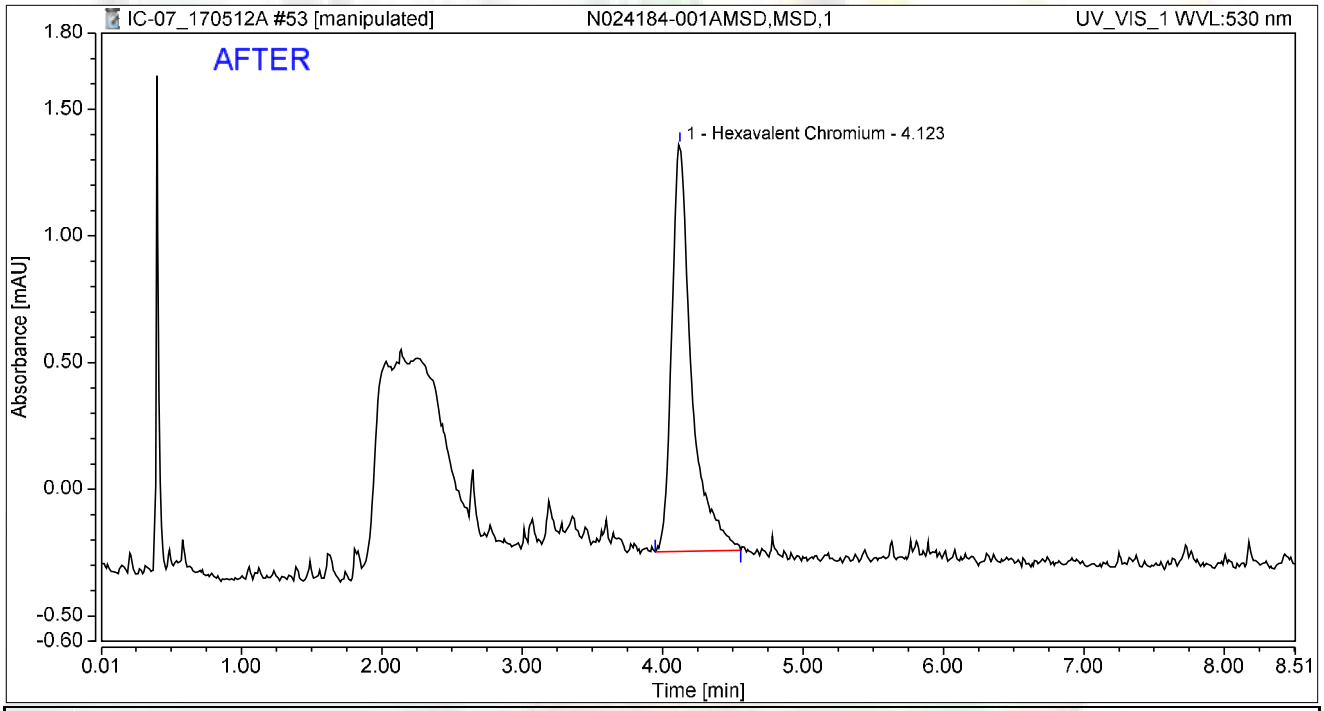
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-001AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.264	1.605	100.00	100.00	1.0813
Total:			**0.264**	**1.605**	**100.00**	**100.00**	

rba 5/16/2017

Reviewed by: 5/25/2017

My first report/Integration

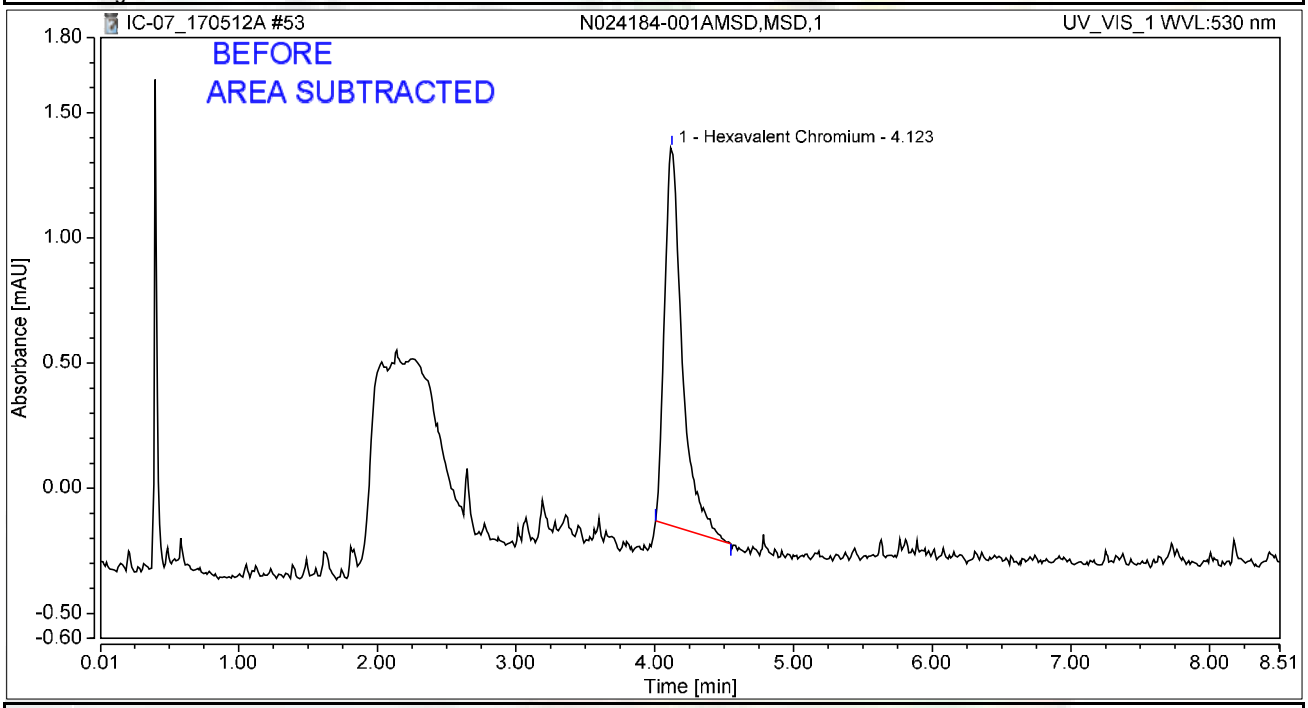
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024184-001AMSD,MSD,1**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.225	1.510	100.00	100.00	0.9206
Total:			**0.225**	**1.510**	**100.00**	**100.00**	

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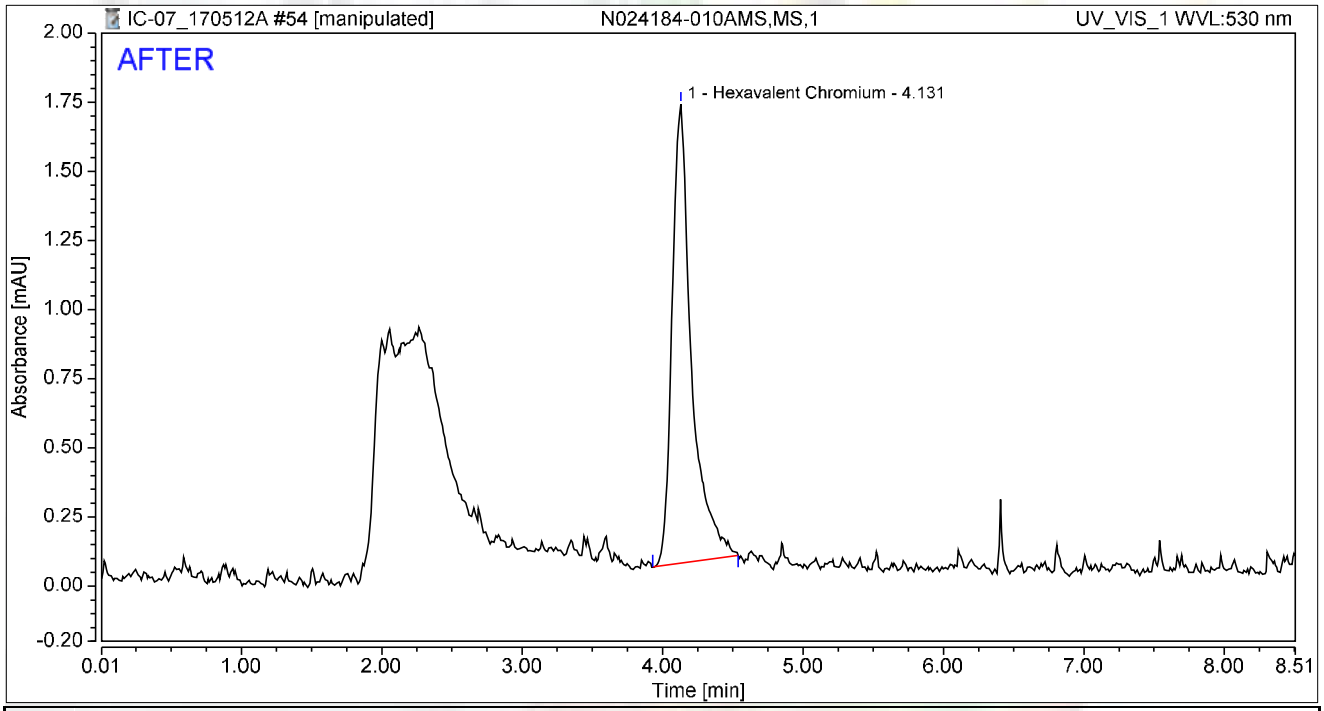
Chromatogram and Results

Injection Details

Injection Name:	**N024184-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.266	1.660	100.00	100.00	1.0890
Total:			**0.266**	**1.660**	**100.00**	**100.00**	

rba 5/16/2017

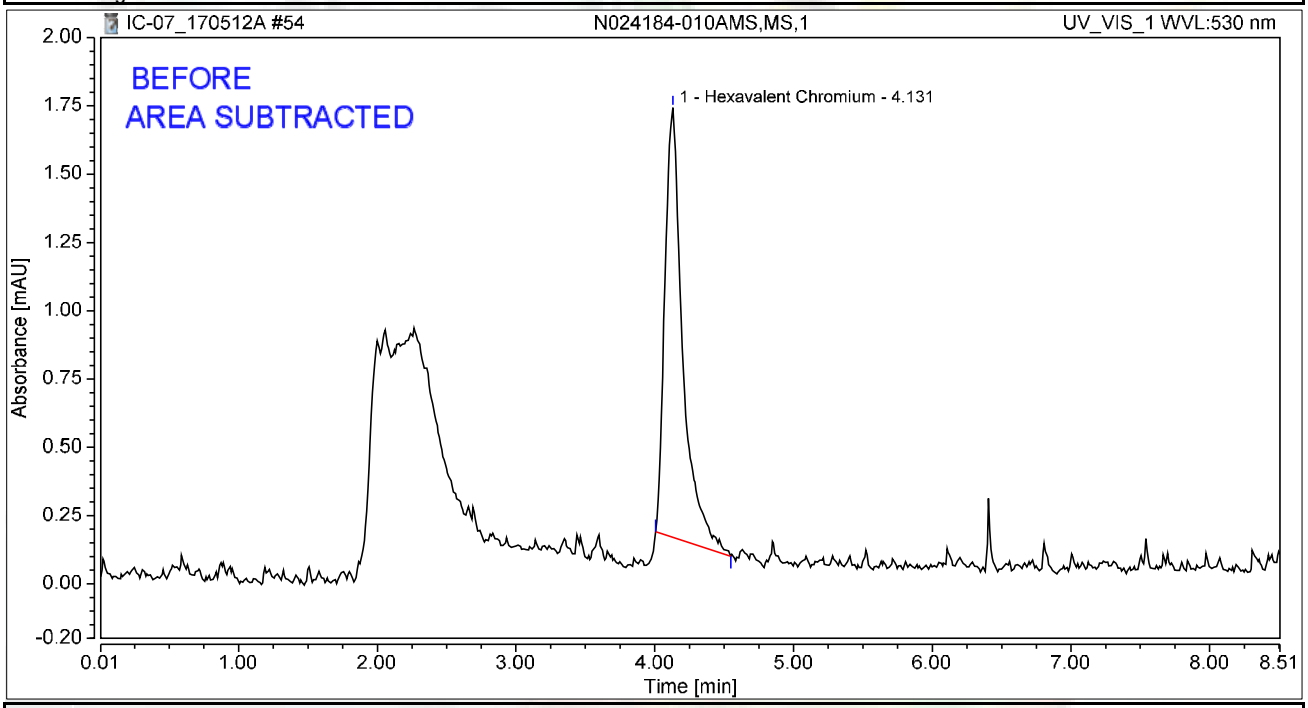
Reviewed by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.235	1.573	100.00	100.00	0.9647
Total:			**0.235**	**1.573**	**100.00**	**100.00**	

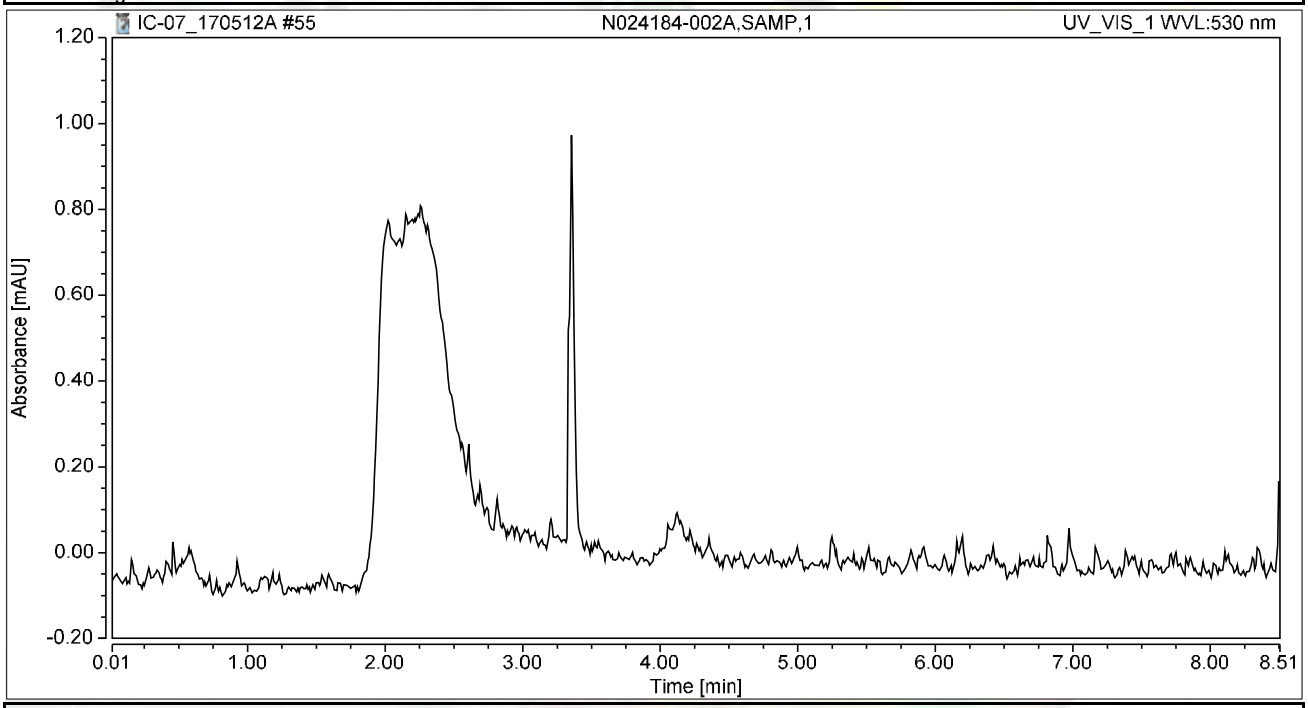
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

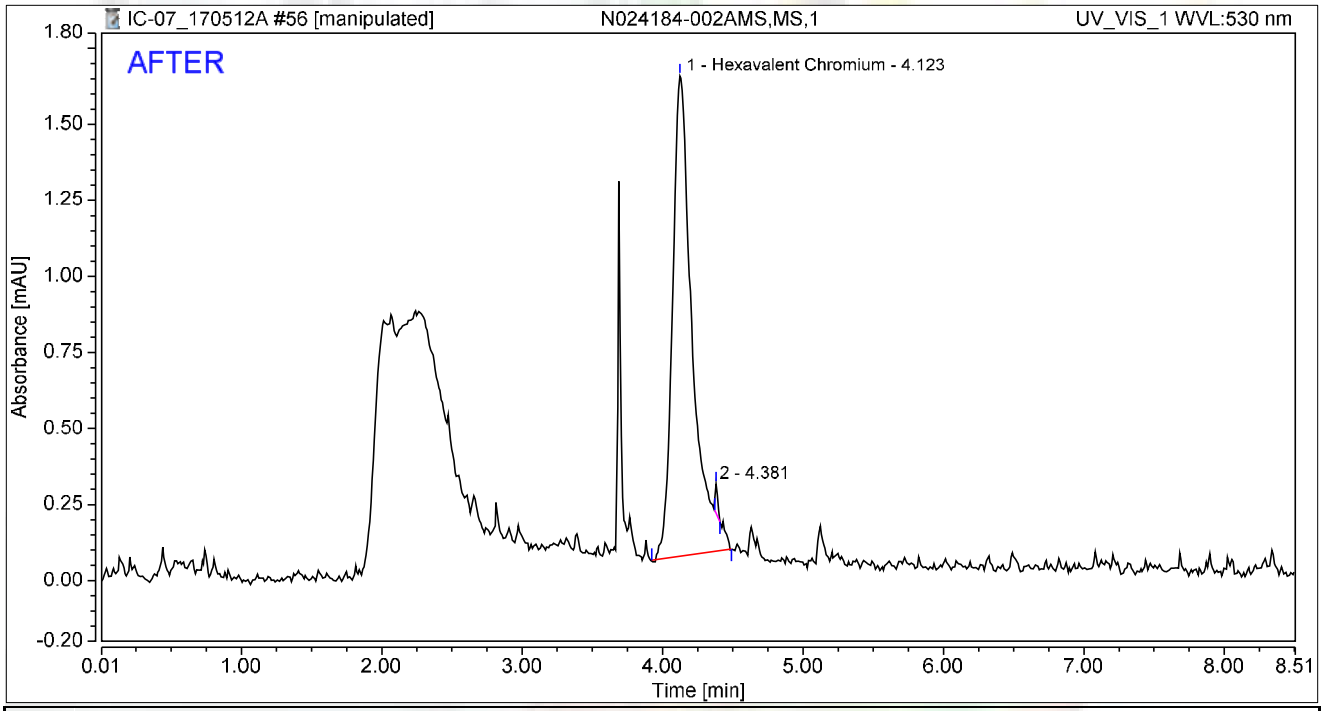
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.258	1.579	99.38	94.32	1.0563
2		4.381	0.002	0.095	0.62	5.68	n.a.
Total:			**0.259**	**1.674**	**100.00**	**100.00**	

rba 5/16/2017

Reviewed by: 5/25/2017
My first report/integration

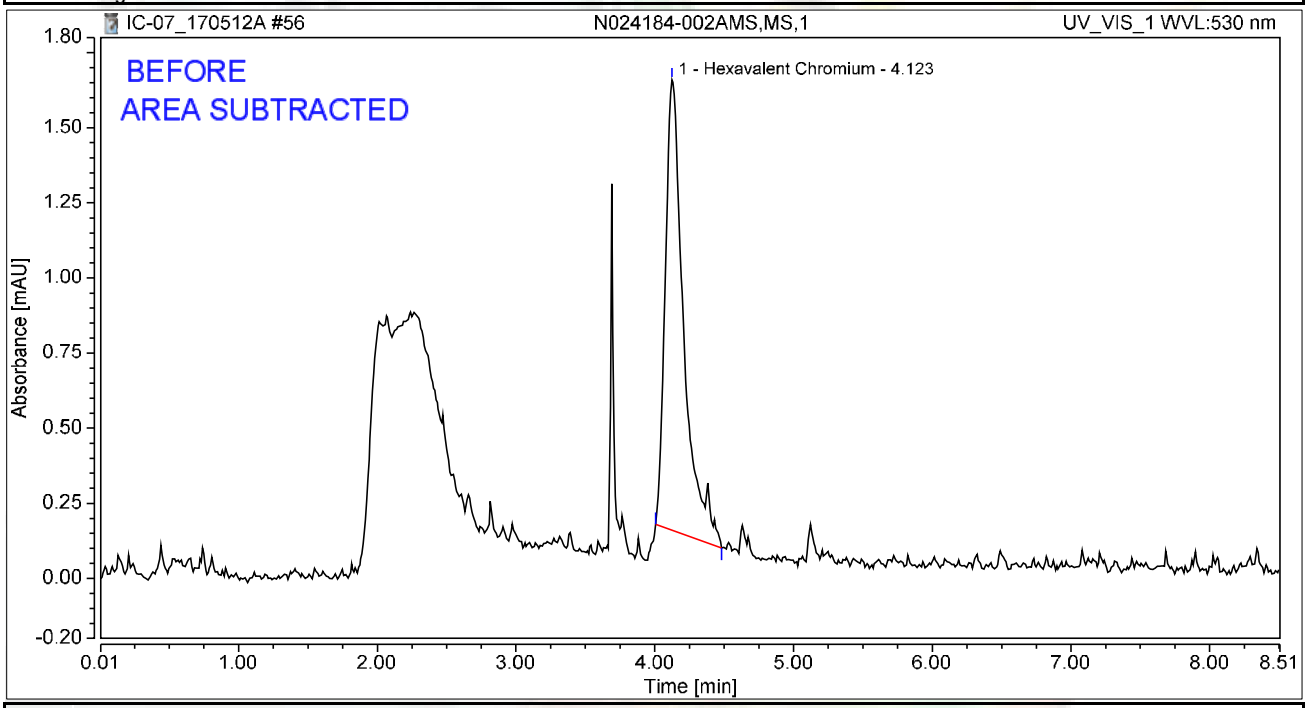
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024184-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.232	1.498	100.00	100.00	0.9496
Total:			**0.232**	**1.498**	**100.00**	**100.00**	

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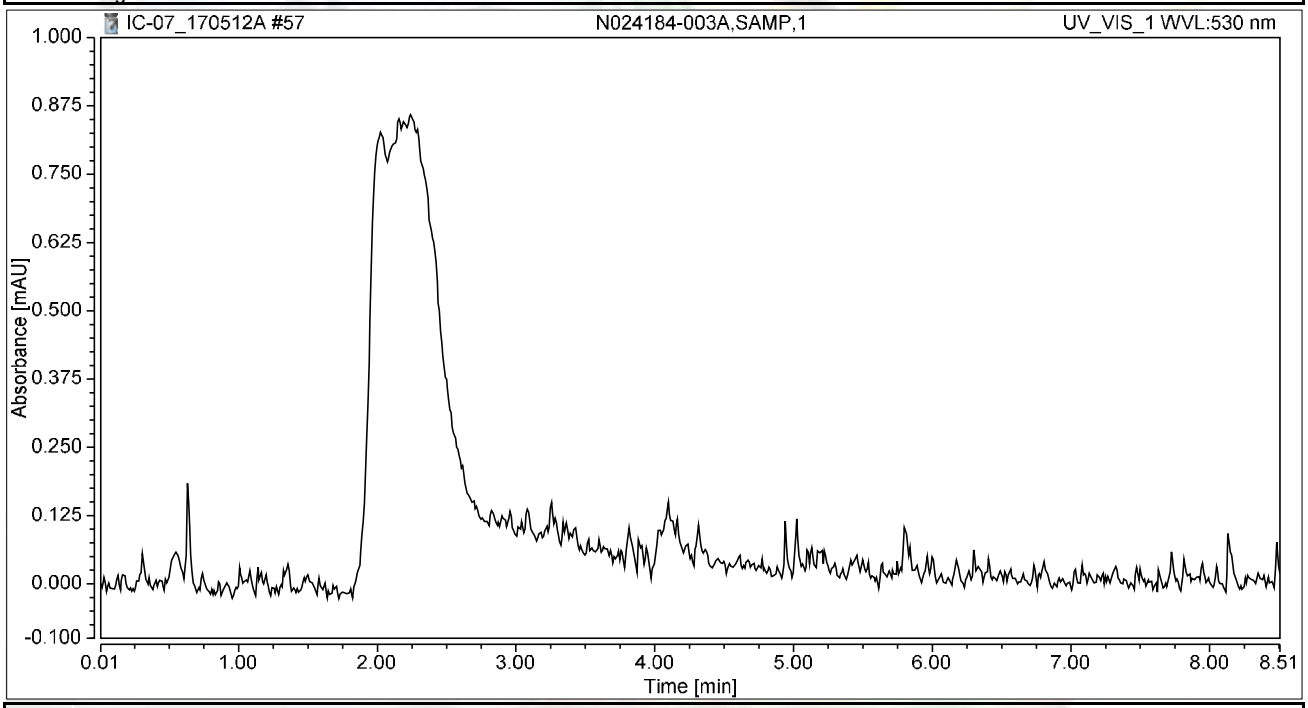
Chromatogram and Results

Injection Details

Injection Name:	**N024184-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

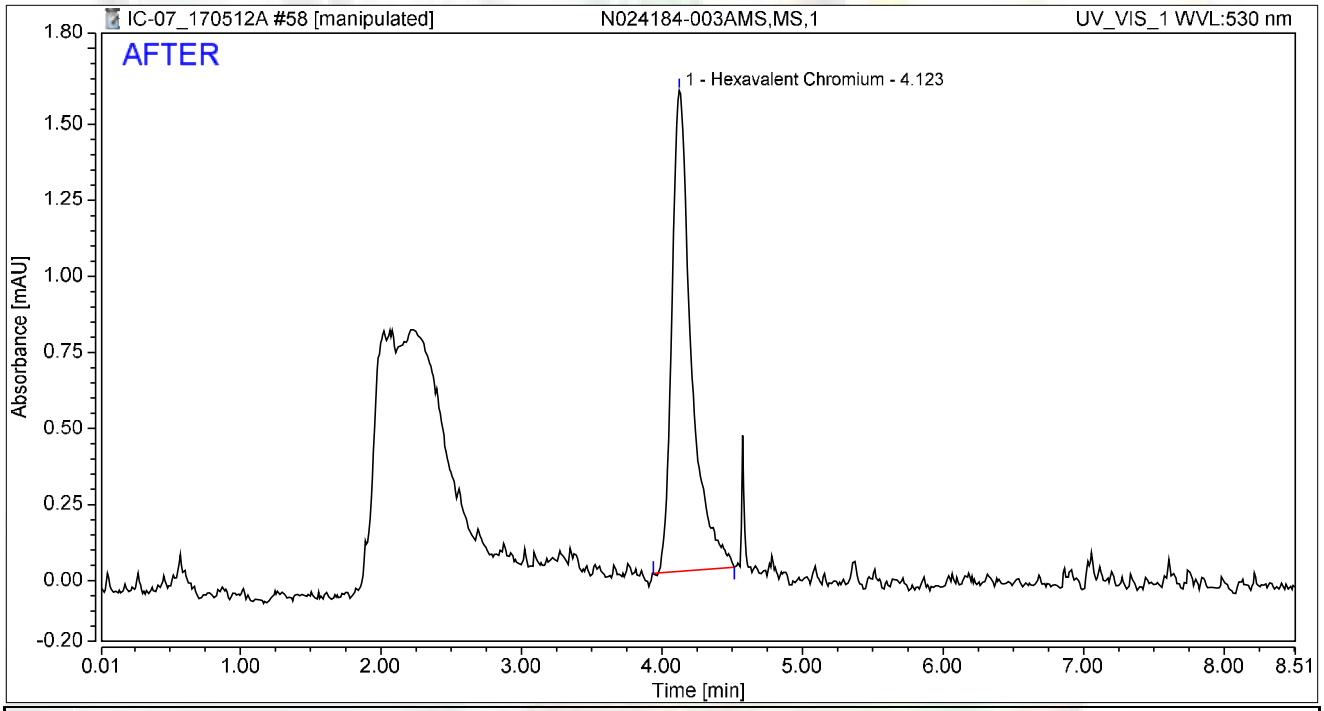
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.254	1.581	100.00	100.00	1.0398
Total:			**0.254**	**1.581**	**100.00**	**100.00**	

rba 5/16/2017

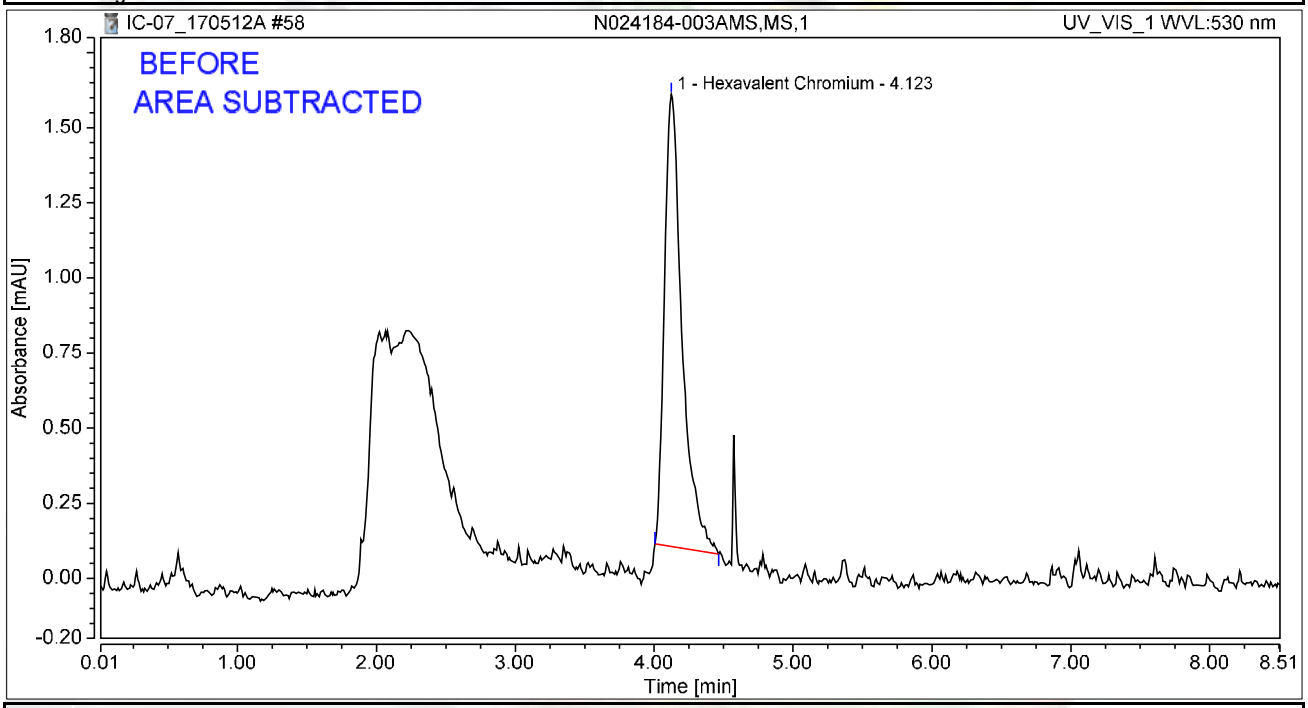
Reviewed by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.222	1.505	100.00	100.00	0.9093
Total:			**0.222**	**1.505**	**100.00**	**100.00**	

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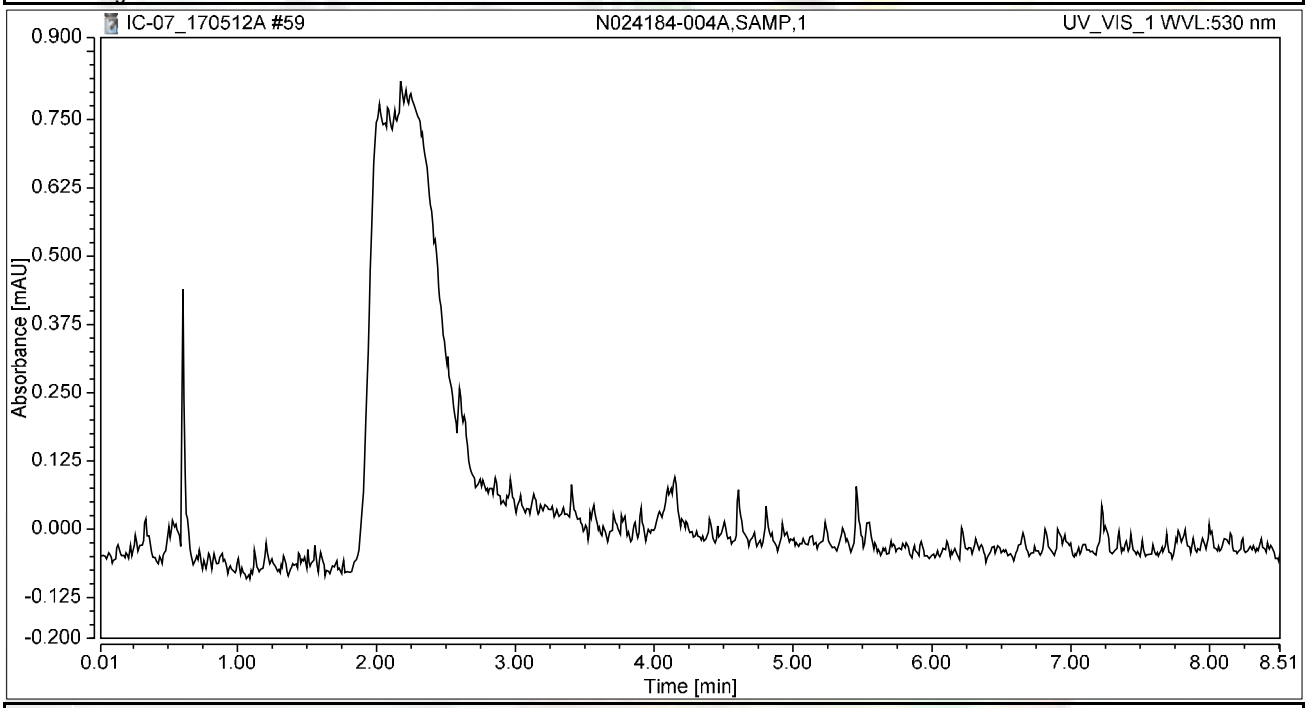
Chromatogram and Results

Injection Details

Injection Name:	**N024184-004A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

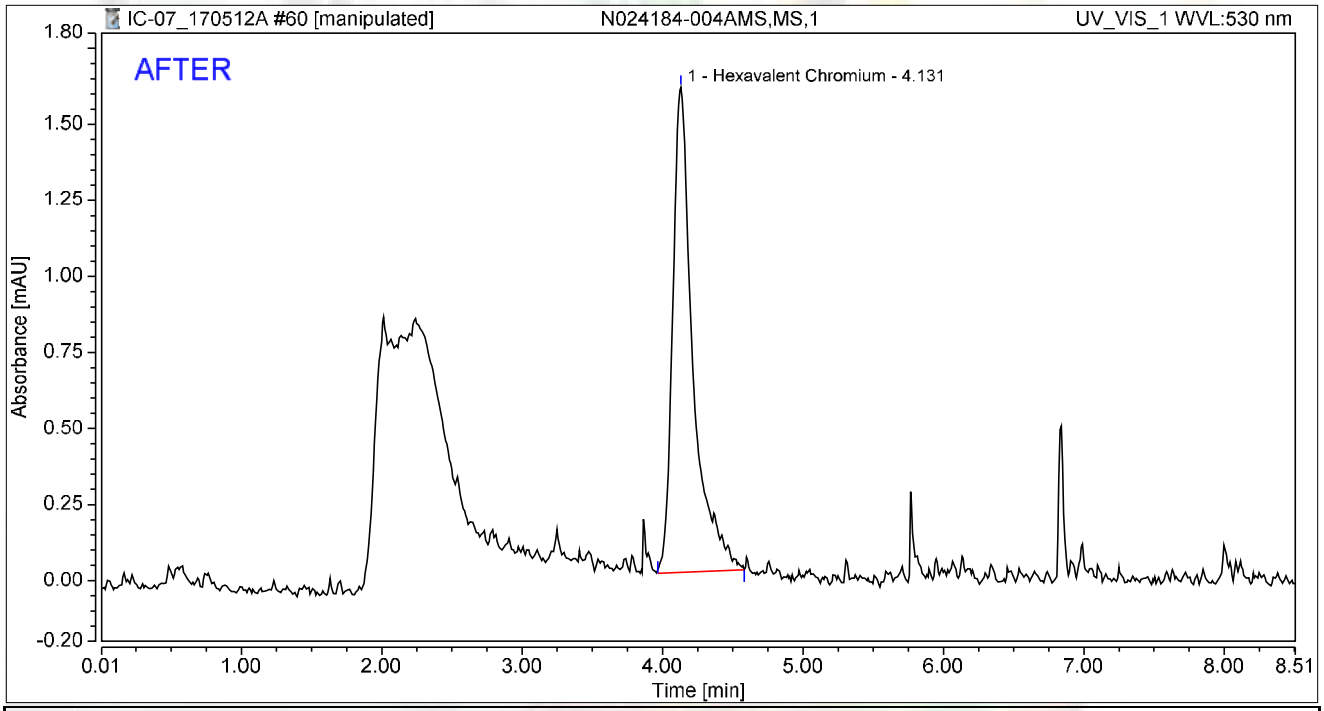
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.267	1.595	100.00	100.00	1.0935
Total:			**0.267**	**1.595**	**100.00**	**100.00**	

rba 5/16/2017

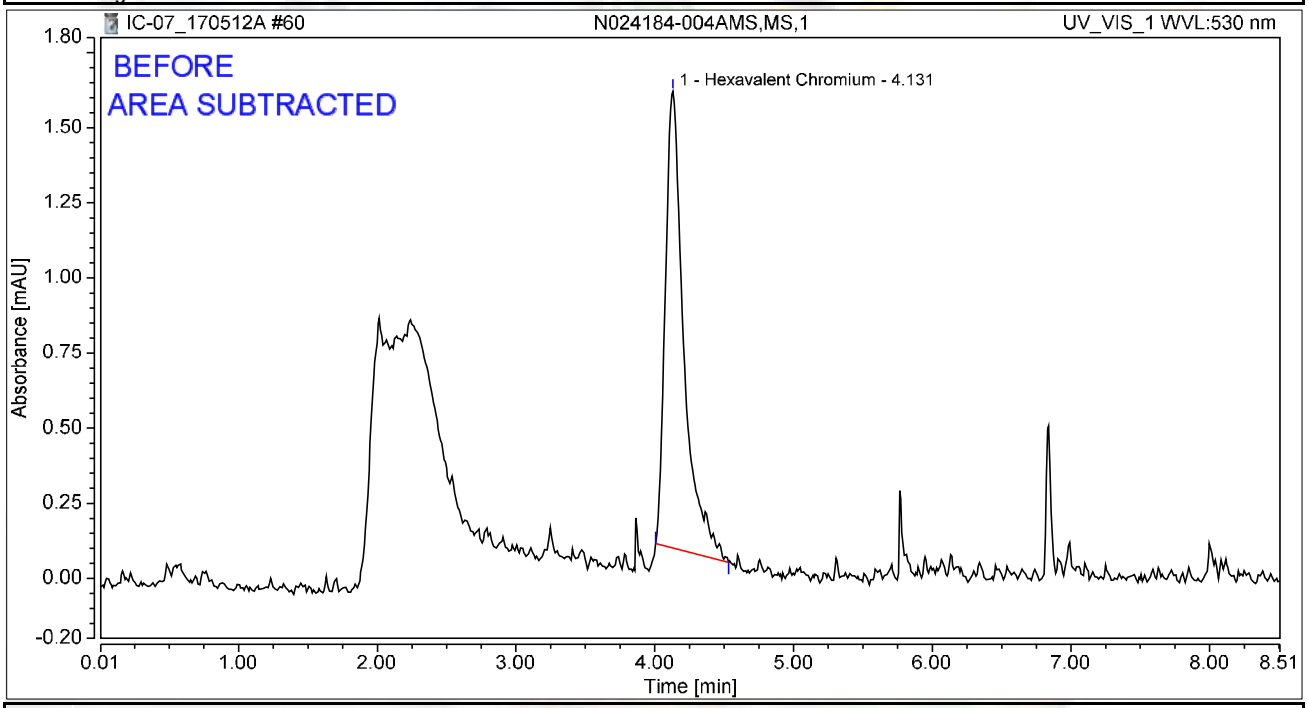
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-004AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.235	1.520	100.00	100.00	0.9653
Total:			**0.235**	**1.520**	**100.00**	**100.00**	

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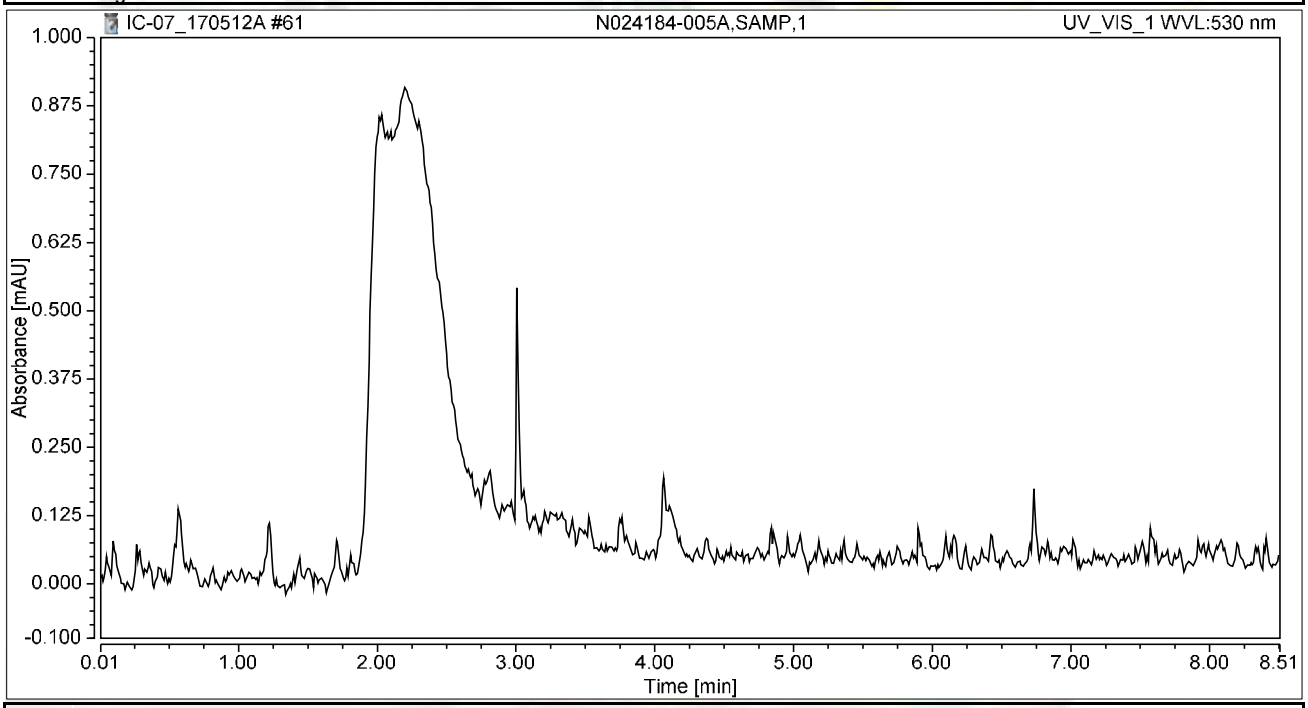
Chromatogram and Results

Injection Details

Injection Name:	**N024184-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

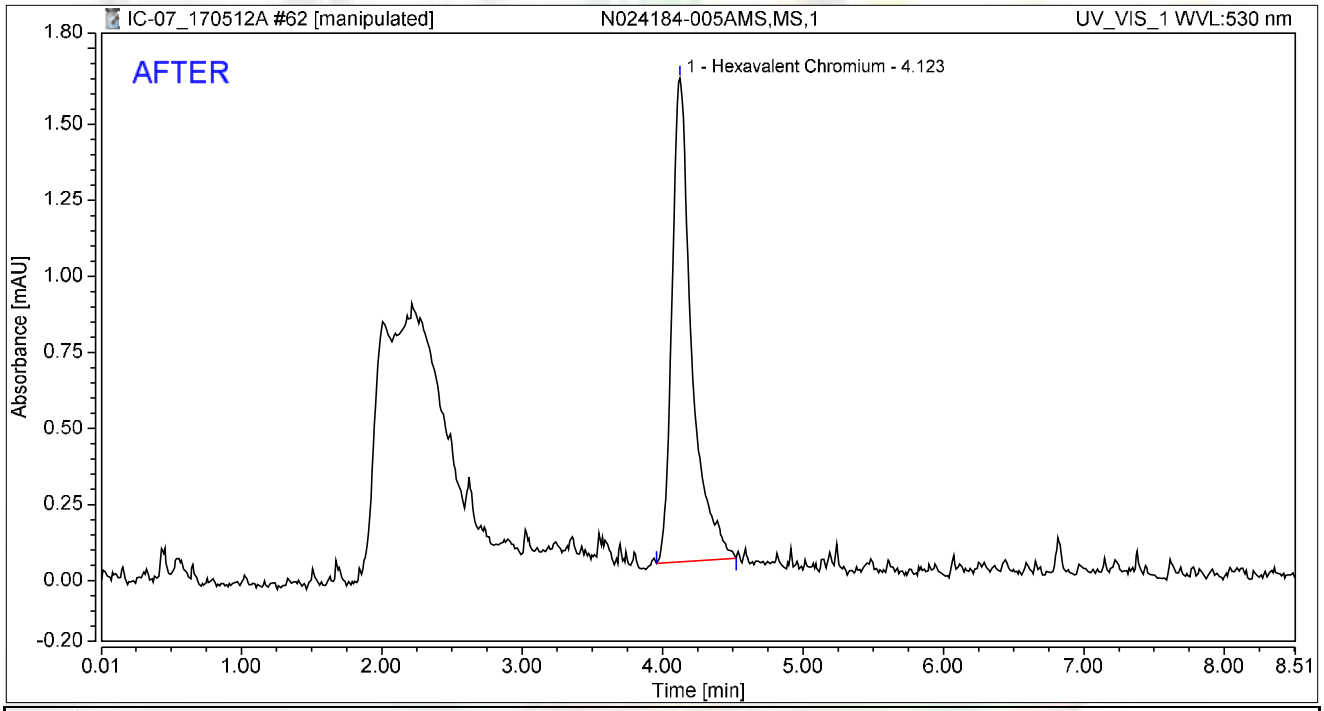
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.259	1.591	100.00	100.00	1.0602
Total:			**0.259**	**1.591**	**100.00**	**100.00**	

rba 5/16/2017

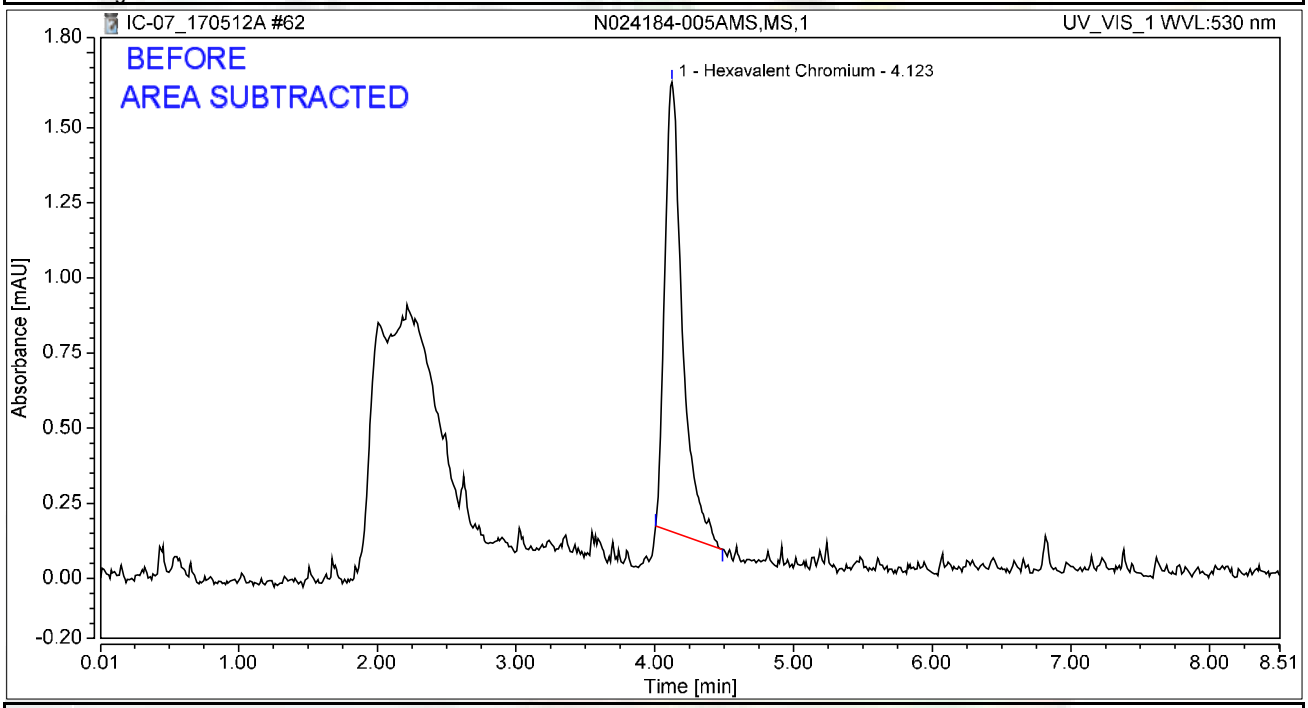
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.222	1.497	100.00	100.00	0.9122
Total:			**0.222**	**1.497**	**100.00**	**100.00**	

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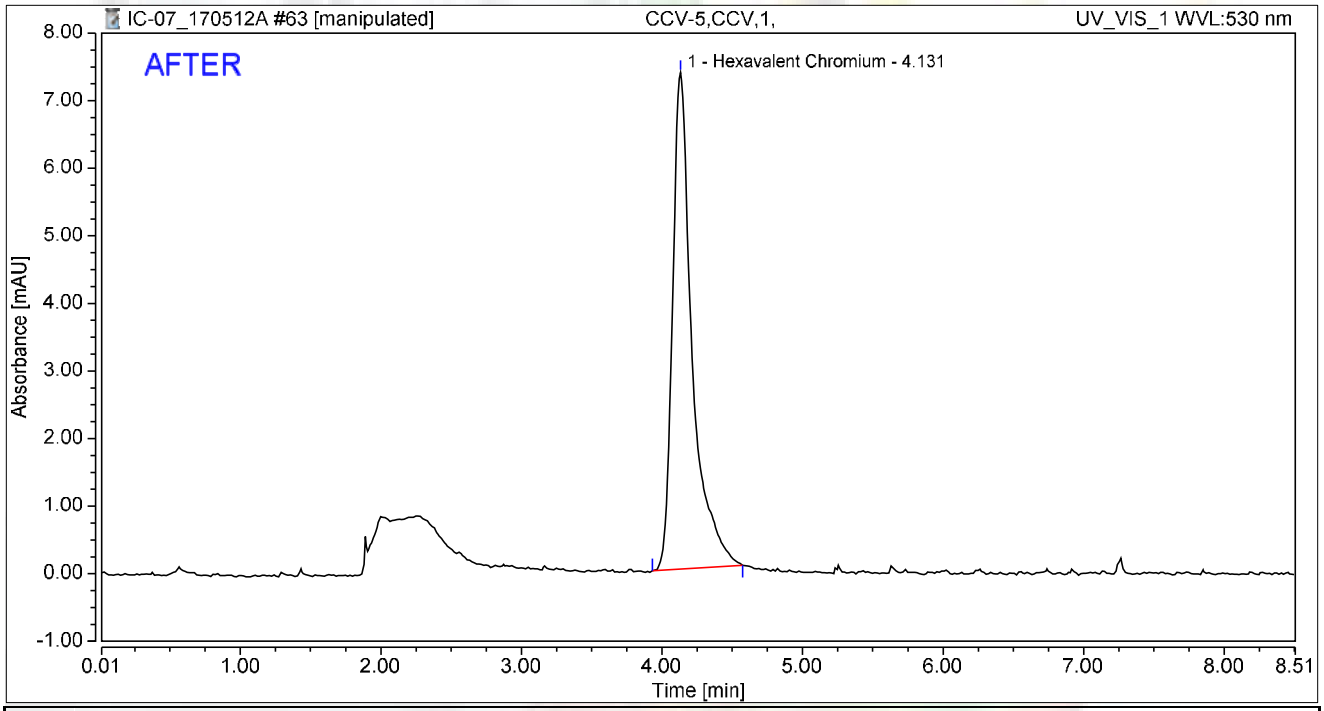
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.186	7.345	100.00	100.00	4.8634
Total:			**1.186**	**7.345**	**100.00**	**100.00**	

rba 5/16/2017

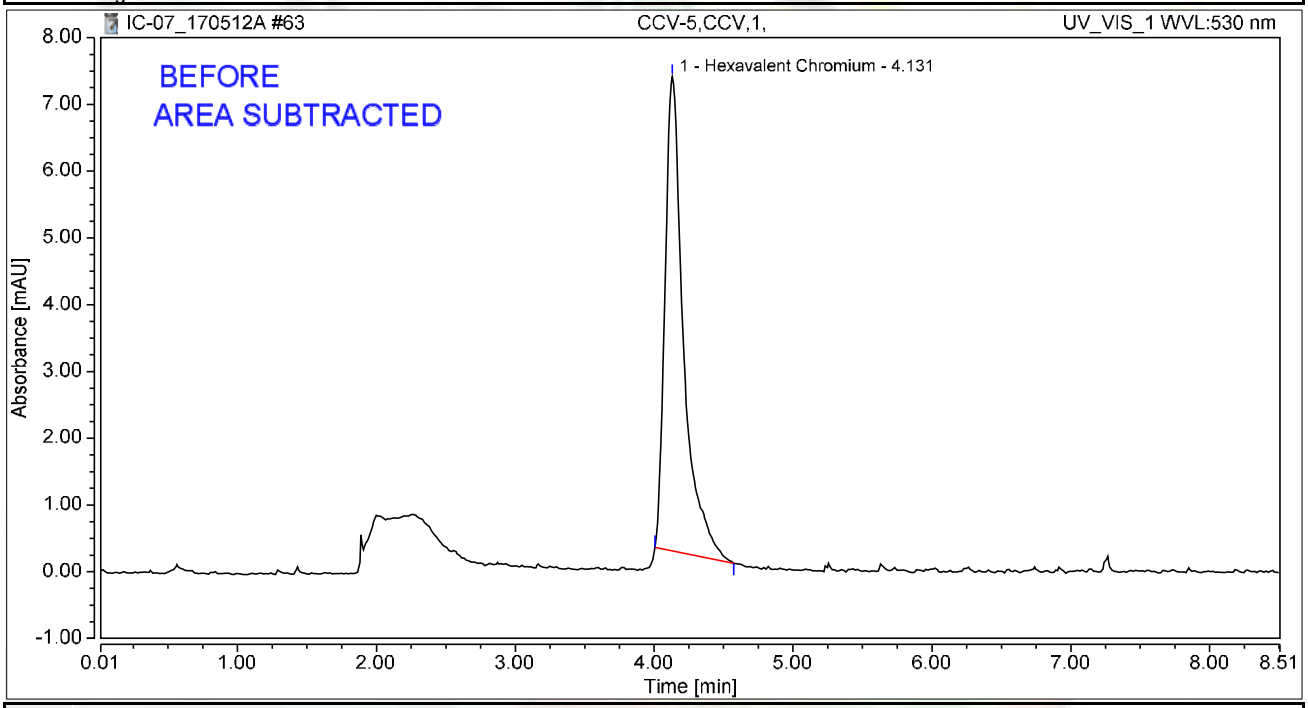
Reviewed by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.094	7.106	100.00	100.00	4.4864
Total:			**1.094**	**7.106**	**100.00**	**100.00**	

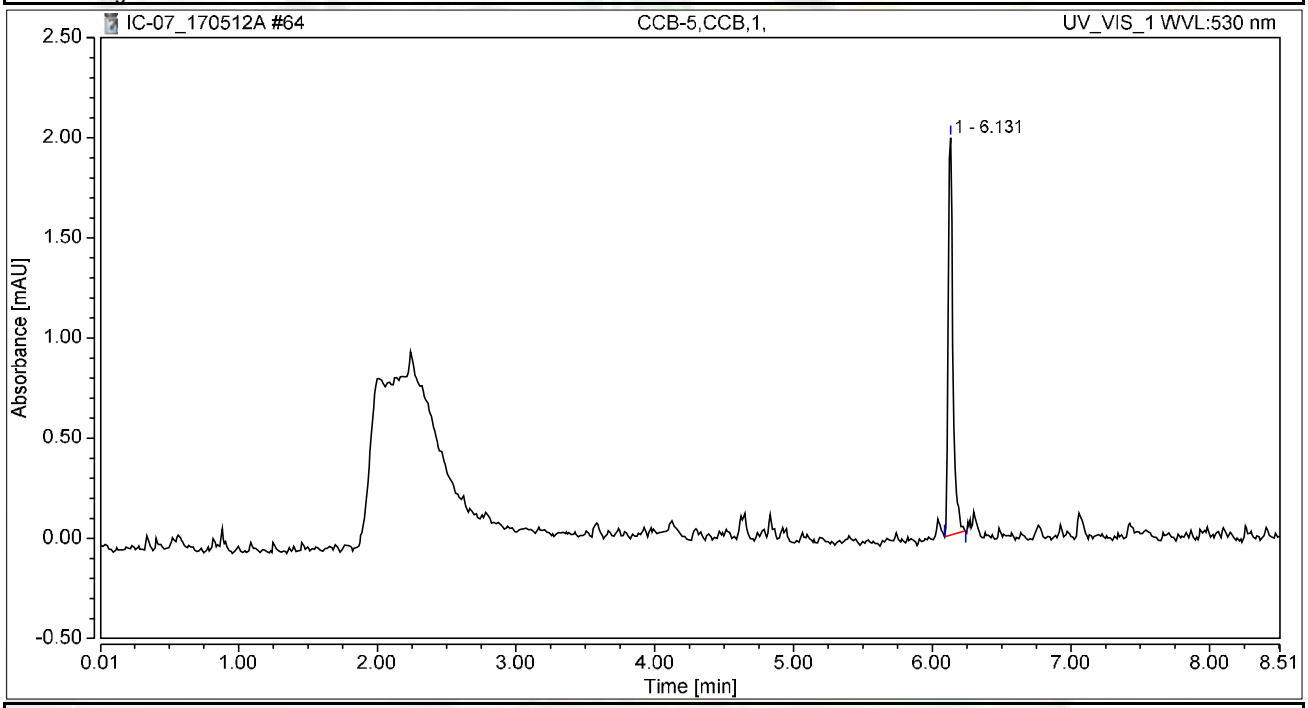
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

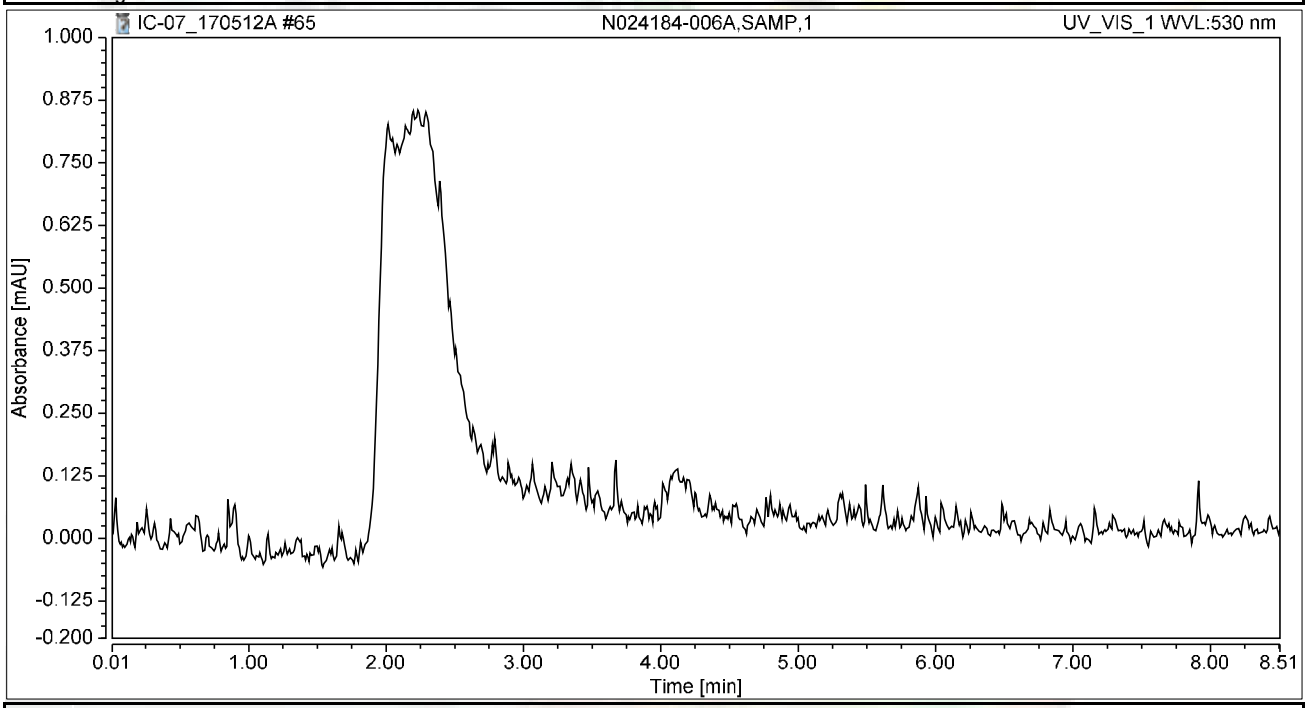
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		6.131	0.079	1.984	100.00	100.00	n.a.
Total:			**0.079**	**1.984**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

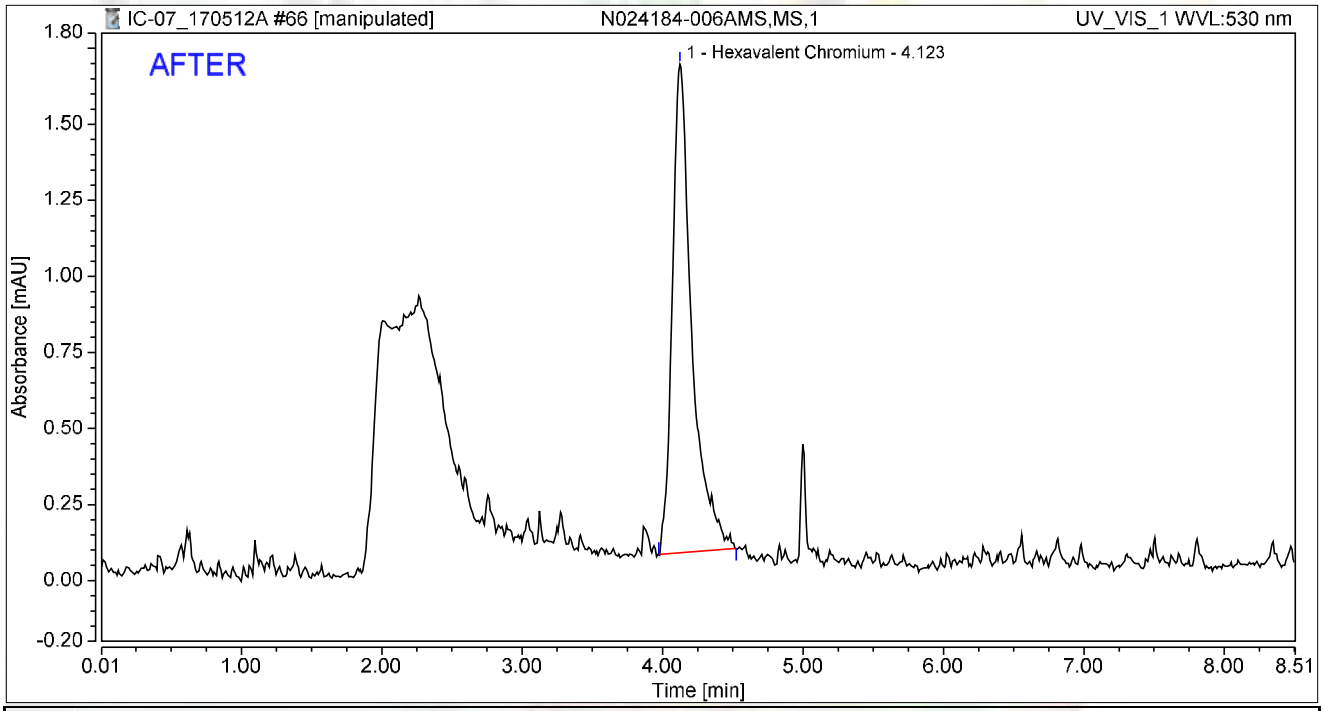
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.258	1.607	100.00	100.00	1.0597
Total:			**0.258**	**1.607**	**100.00**	**100.00**	

rba 5/16/2017

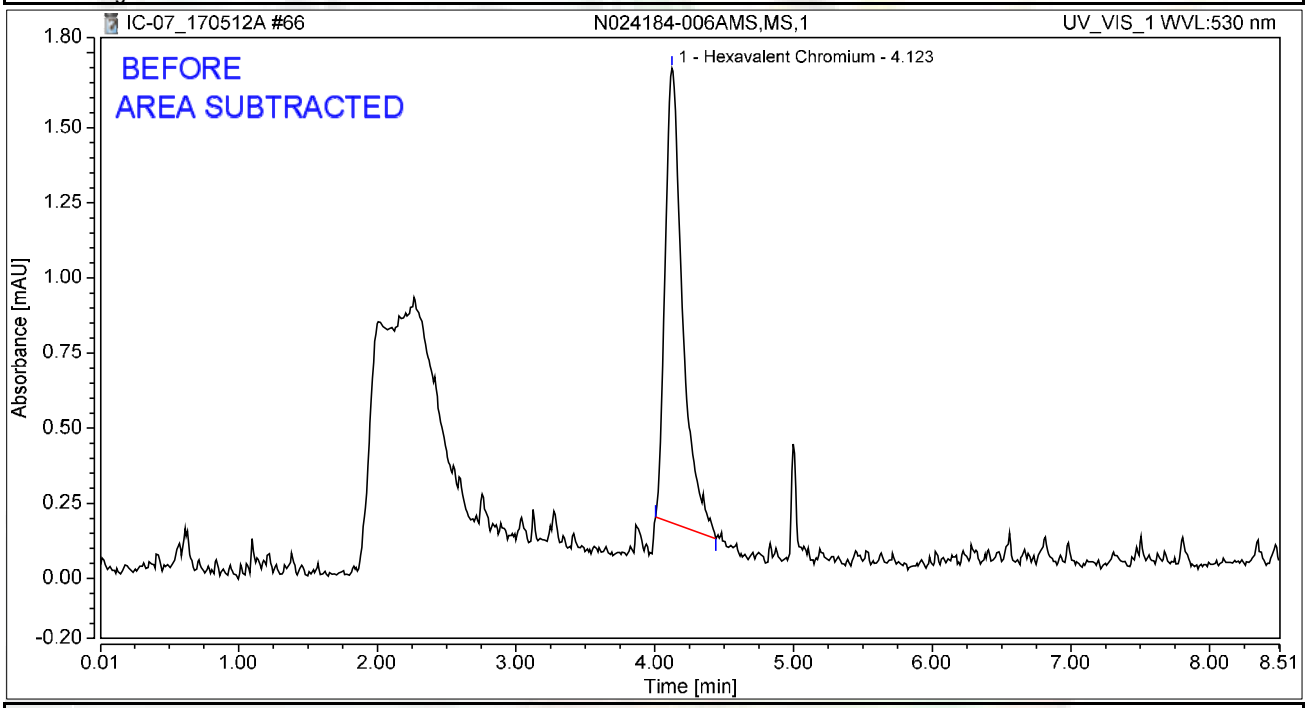
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.223	1.513	100.00	100.00	0.9143
Total:			**0.223**	**1.513**	**100.00**	**100.00**	

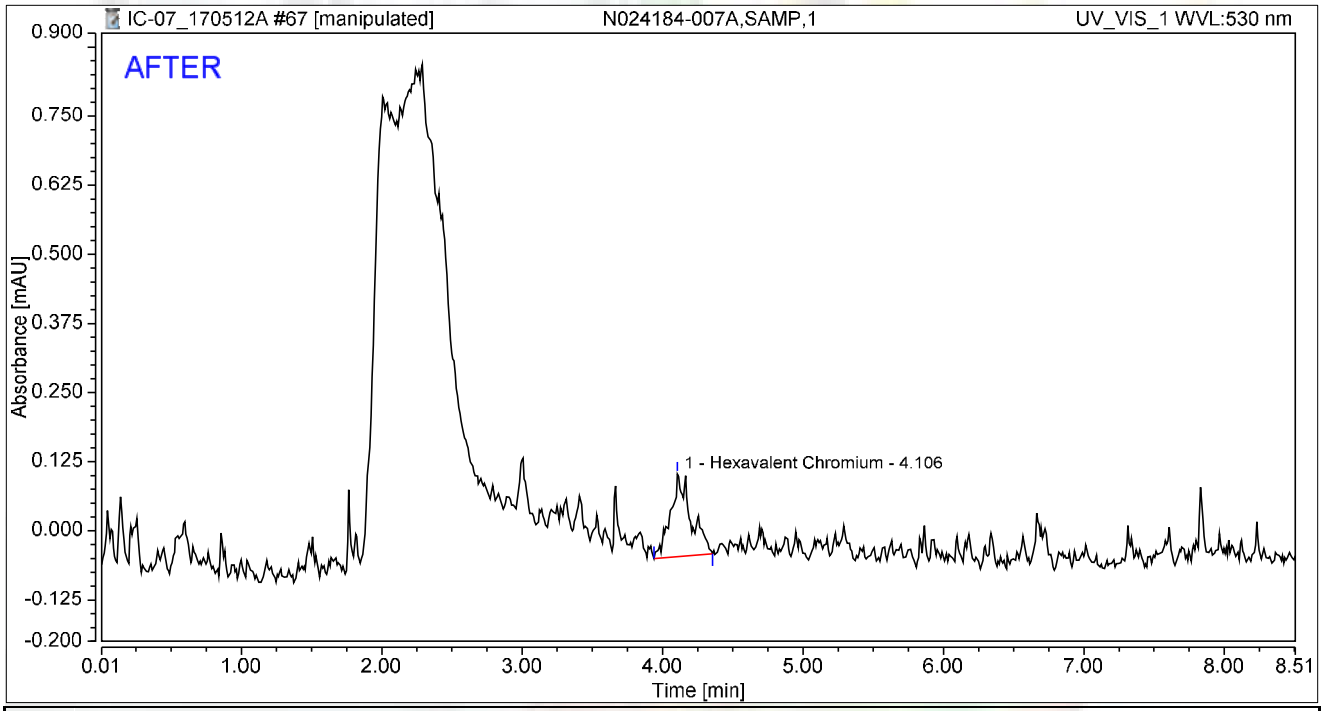
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.106	0.025	0.149	100.00	100.00	0.1036
Total:			**0.025**	**0.149**	**100.00**	**100.00**	

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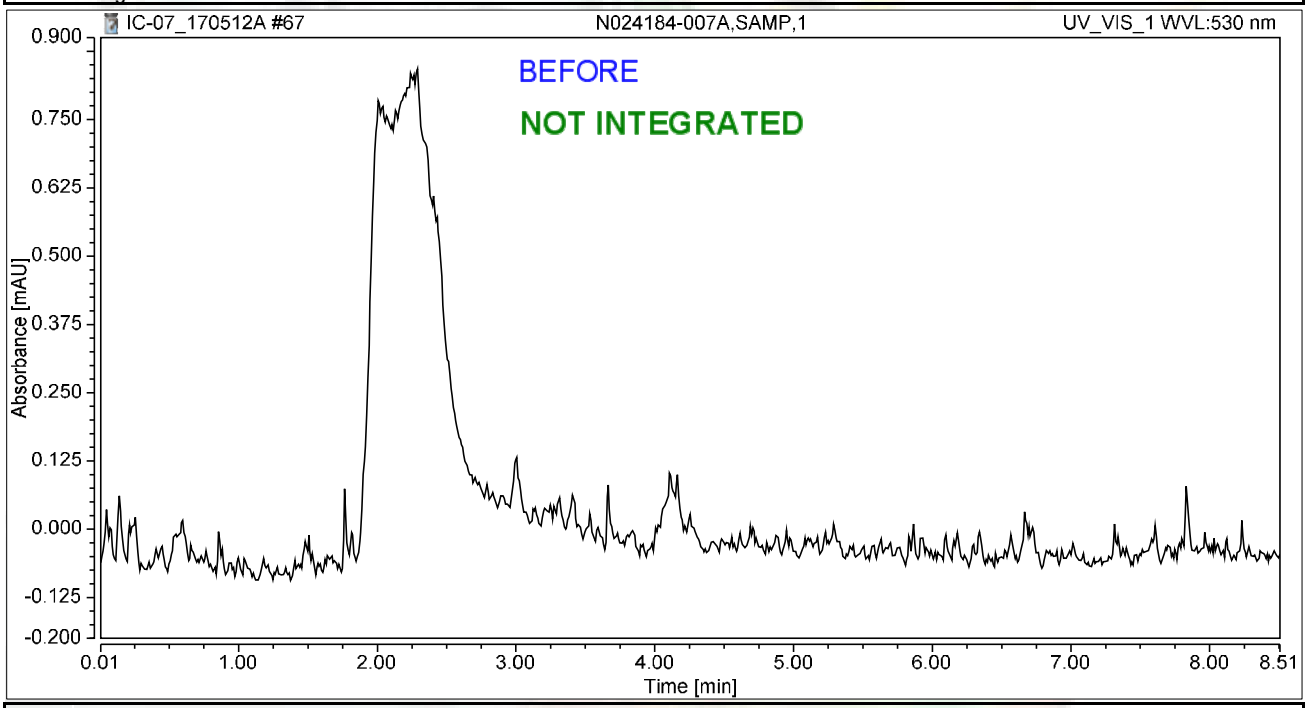
Chromatogram and Results

Injection Details

Injection Name:	**N024184-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

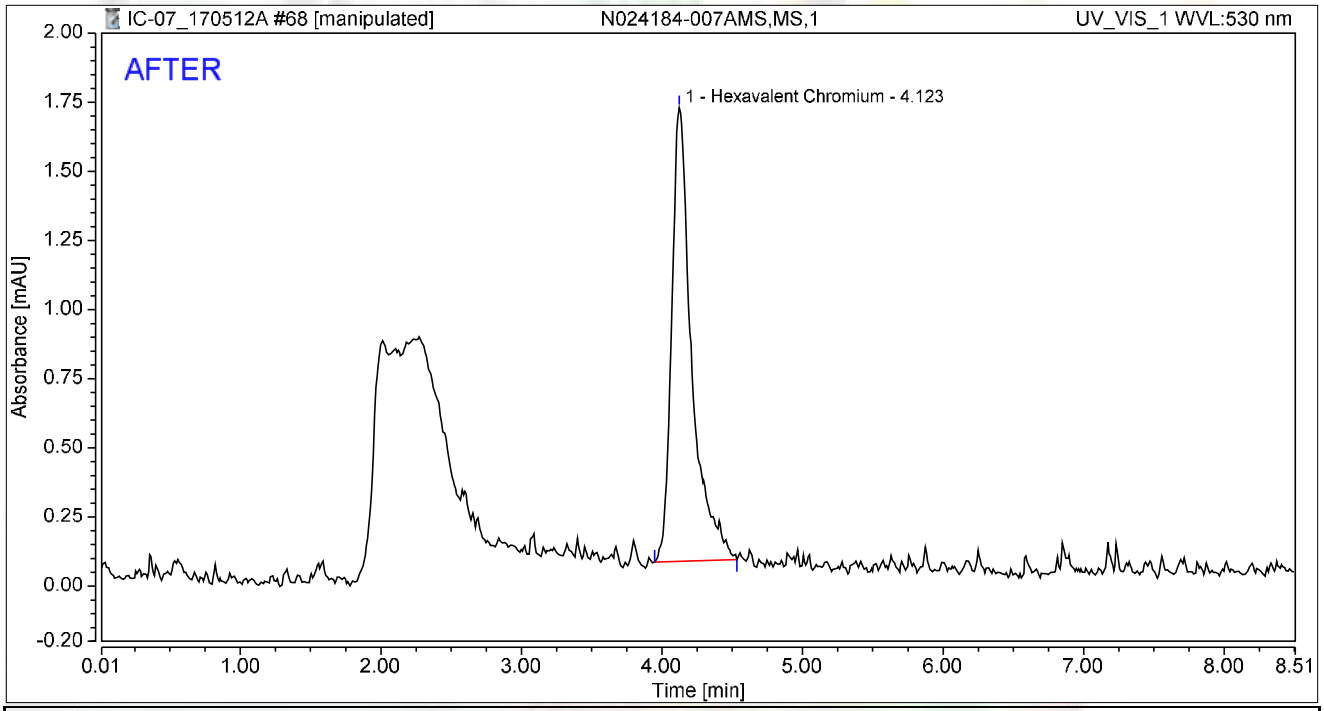
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.271	1.642	100.00	100.00	1.1121
Total:			**0.271**	**1.642**	**100.00**	**100.00**	

rba 5/16/2017

Reviewed by: 5/25/2017

My first report integration

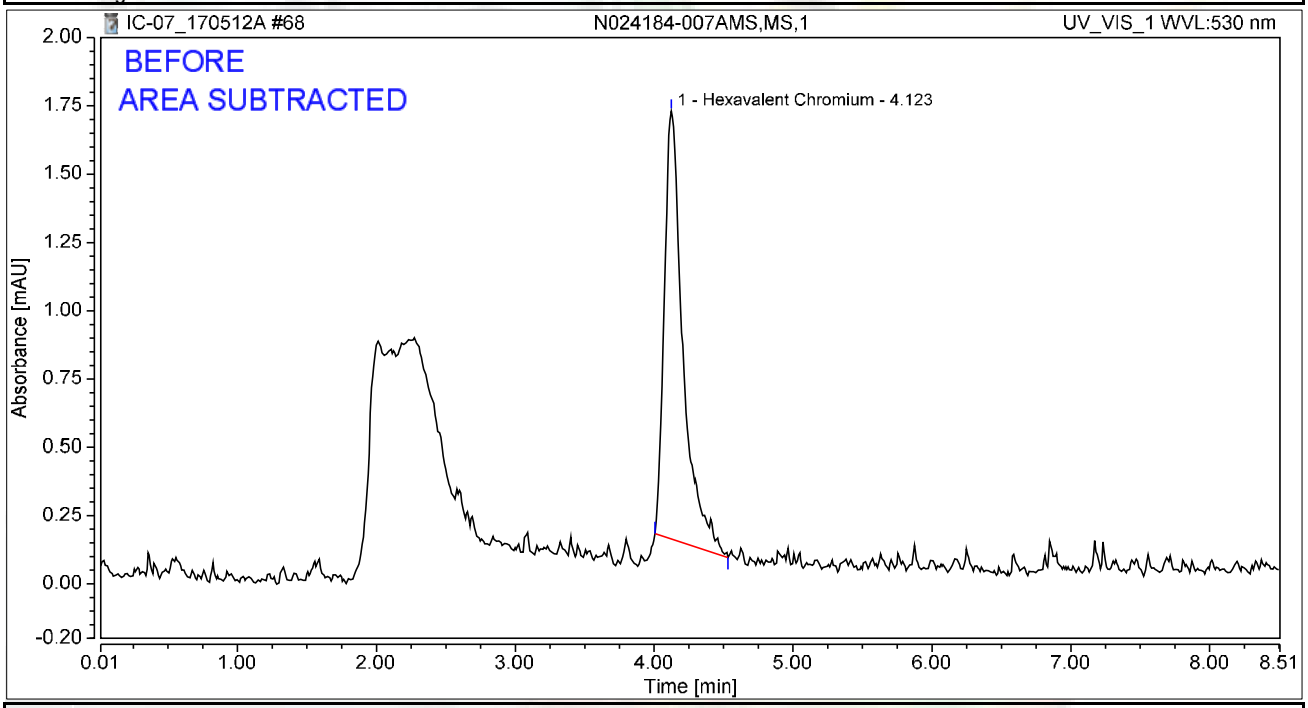
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024184-007AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

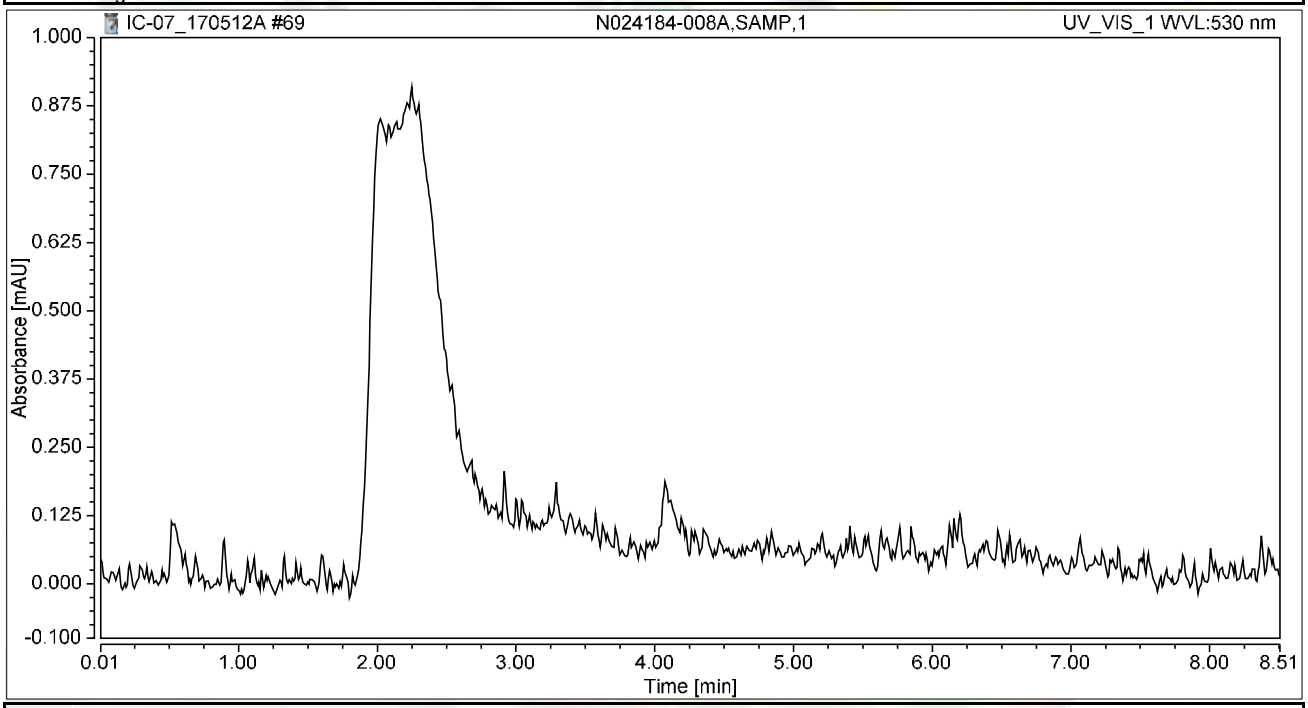
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.244	1.566	100.00	100.00	0.9993
Total:			**0.244**	**1.566**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-008A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

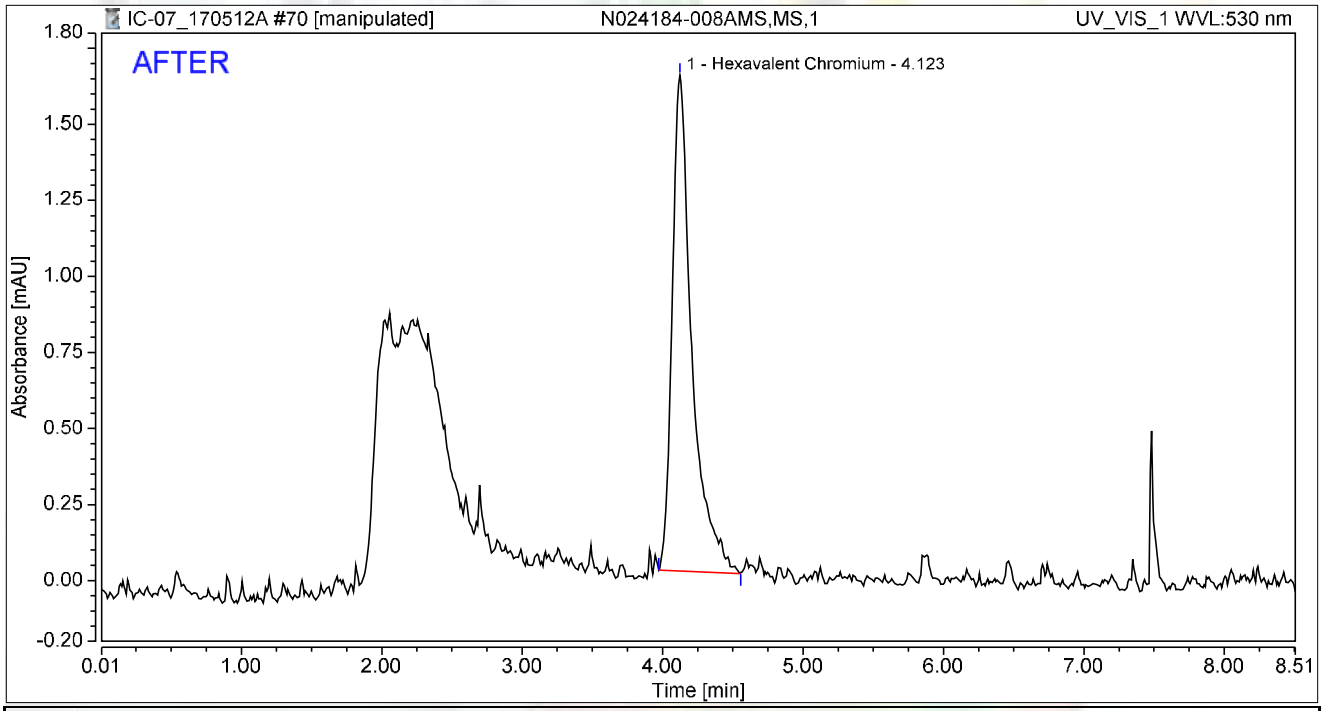
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.265	1.631	100.00	100.00	1.0875
Total:			**0.265**	**1.631**	**100.00**	**100.00**	

rba 5/16/2017

Reviewed by: 5/25/2017

My first report/Integration

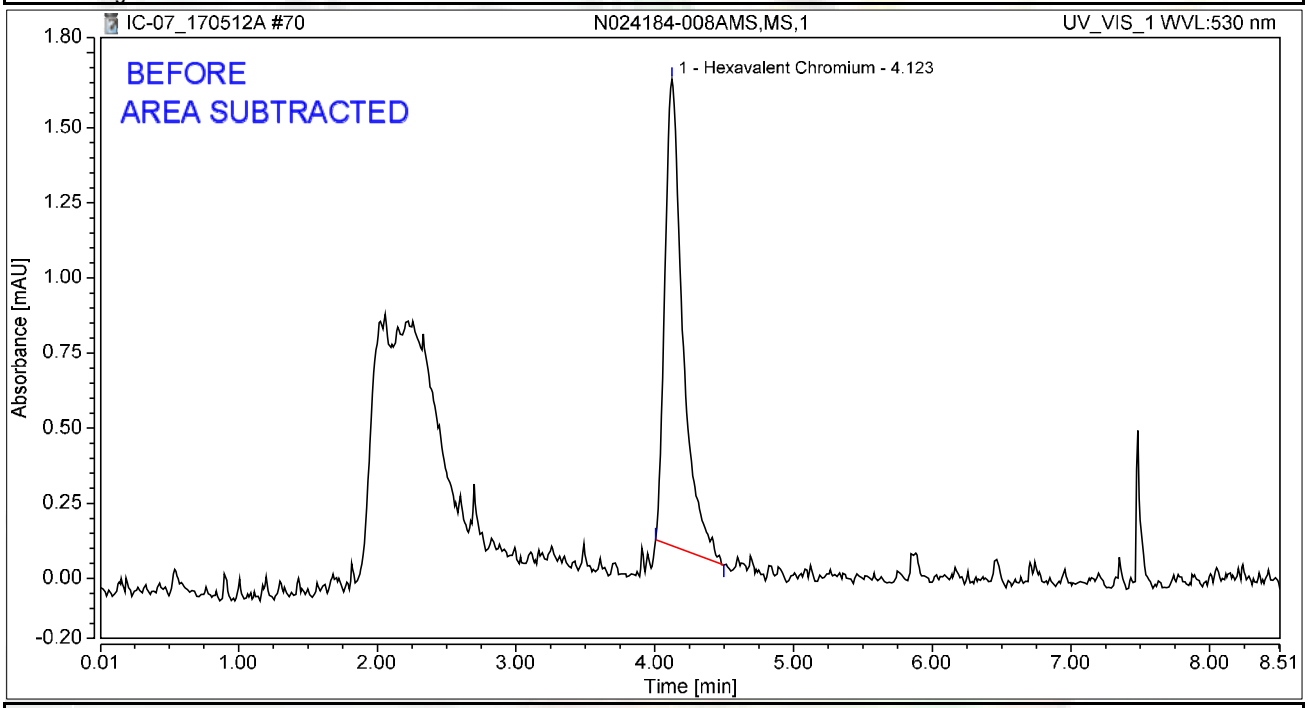
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024184-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.235	1.553	100.00	100.00	0.9622
Total:			**0.235**	**1.553**	**100.00**	**100.00**	

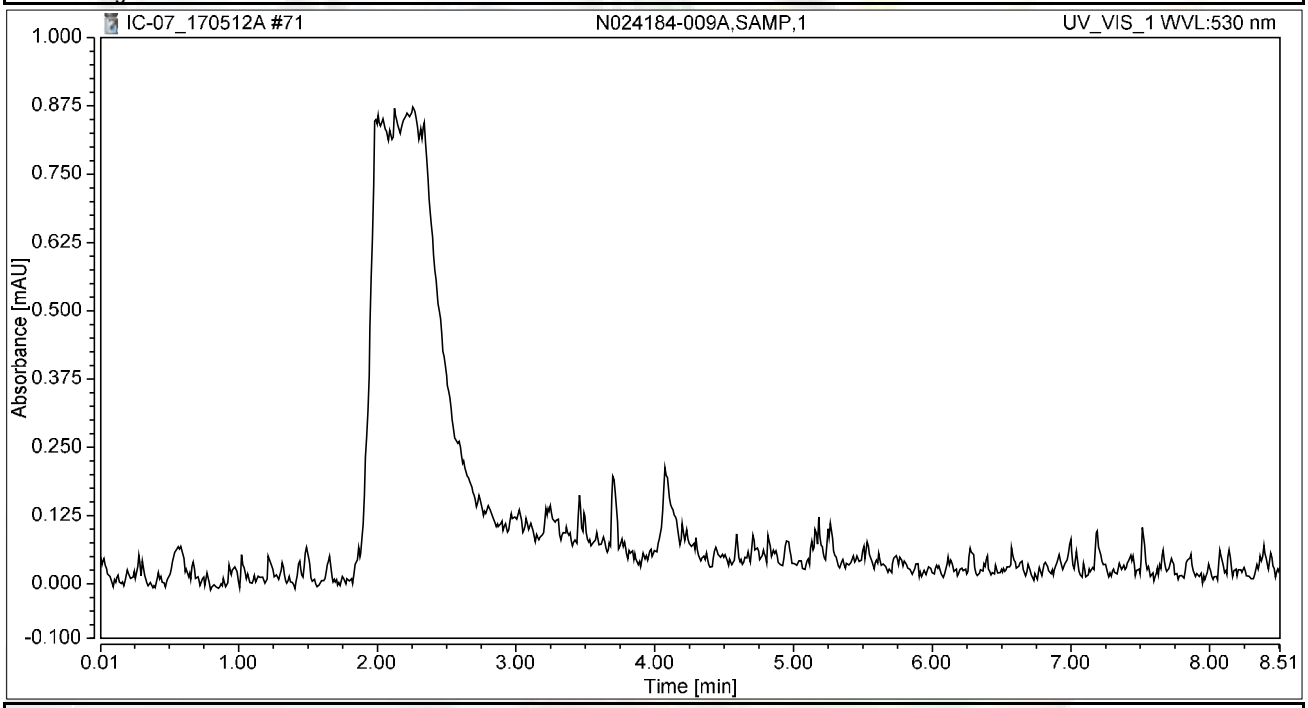
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

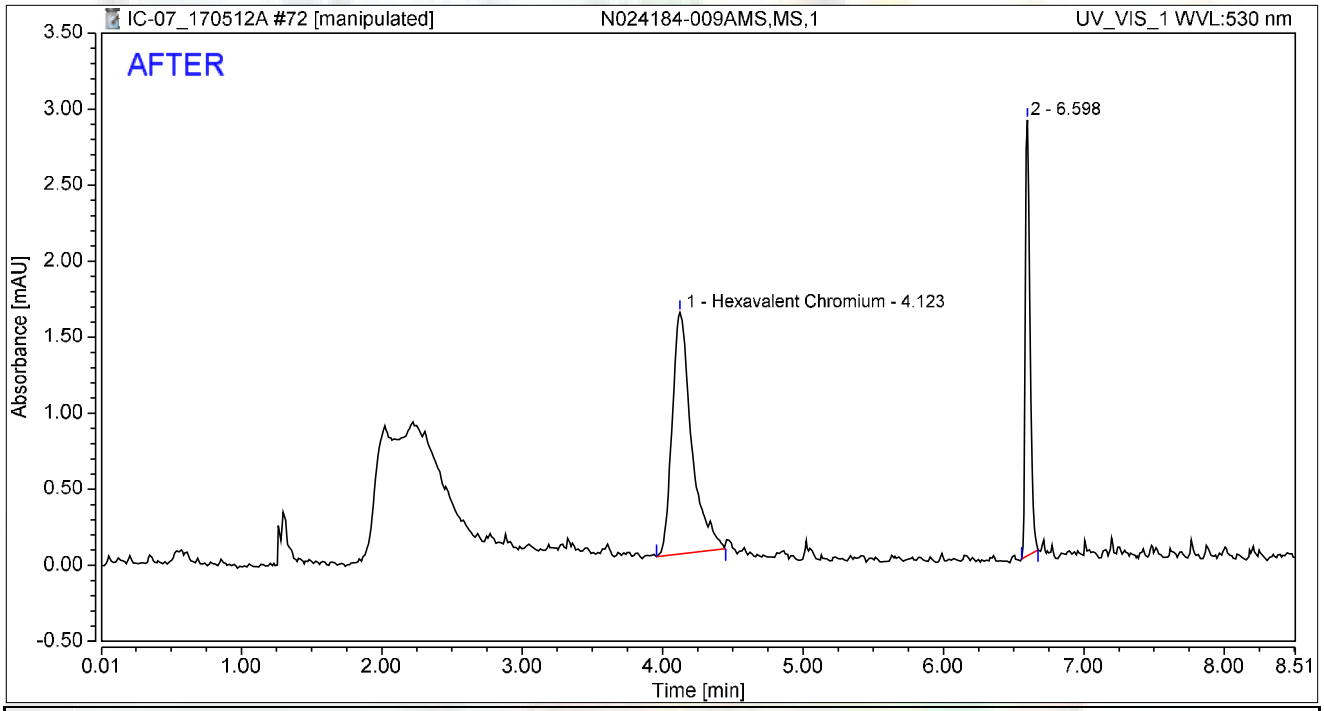
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.255	1.590	69.67	35.68	1.0442
2		6.598	0.111	2.866	30.33	64.32	n.a.
Total:			**0.366**	**4.455**	**100.00**	**100.00**	

rba 5/16/2017

Reviewed by: 5/25/2017

My first report integration

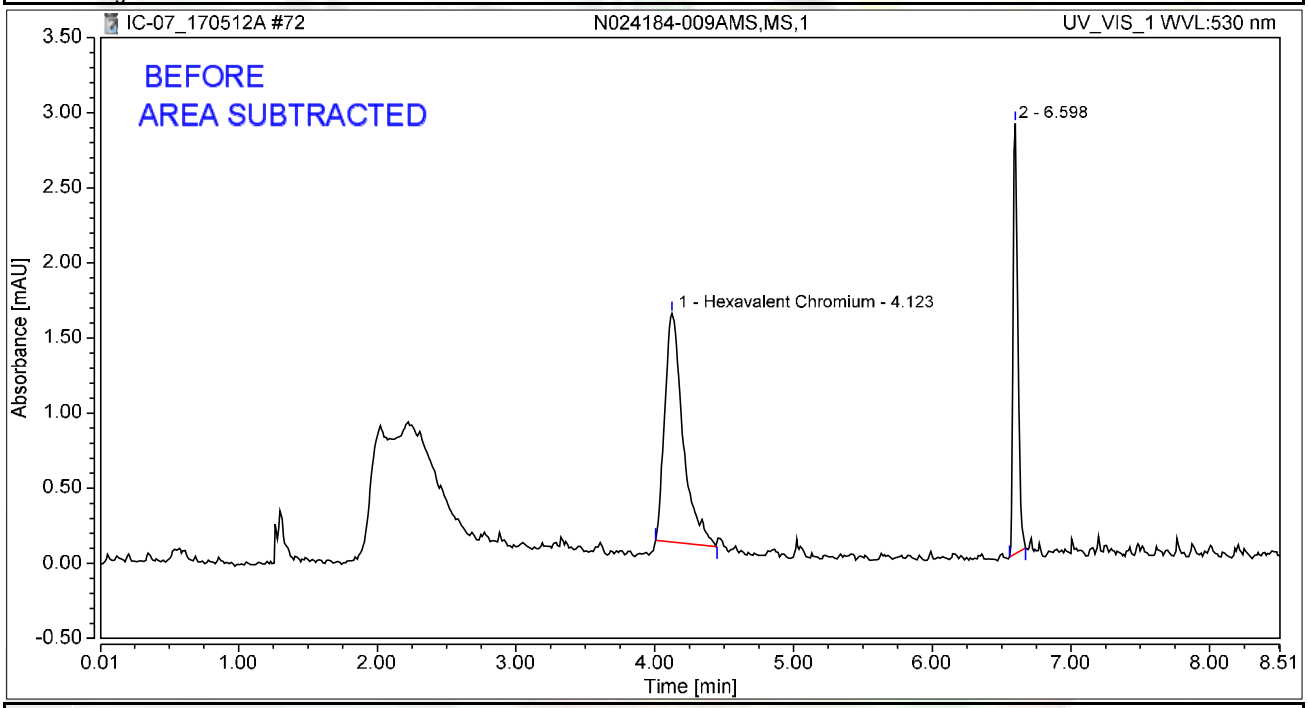
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024184-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.233	1.521	67.72	34.67	0.9538
2		6.598	0.111	2.866	32.28	65.33	n.a.
Total:			**0.344**	**4.387**	**100.00**	**100.00**	

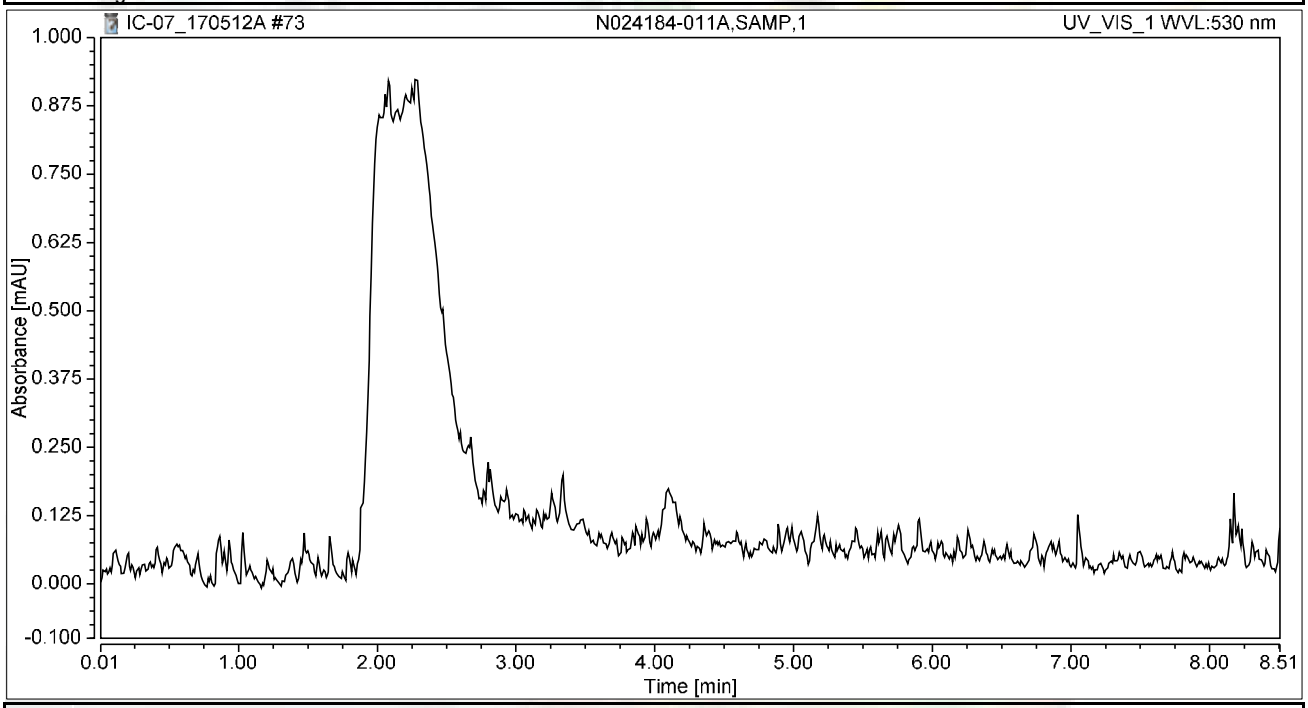
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

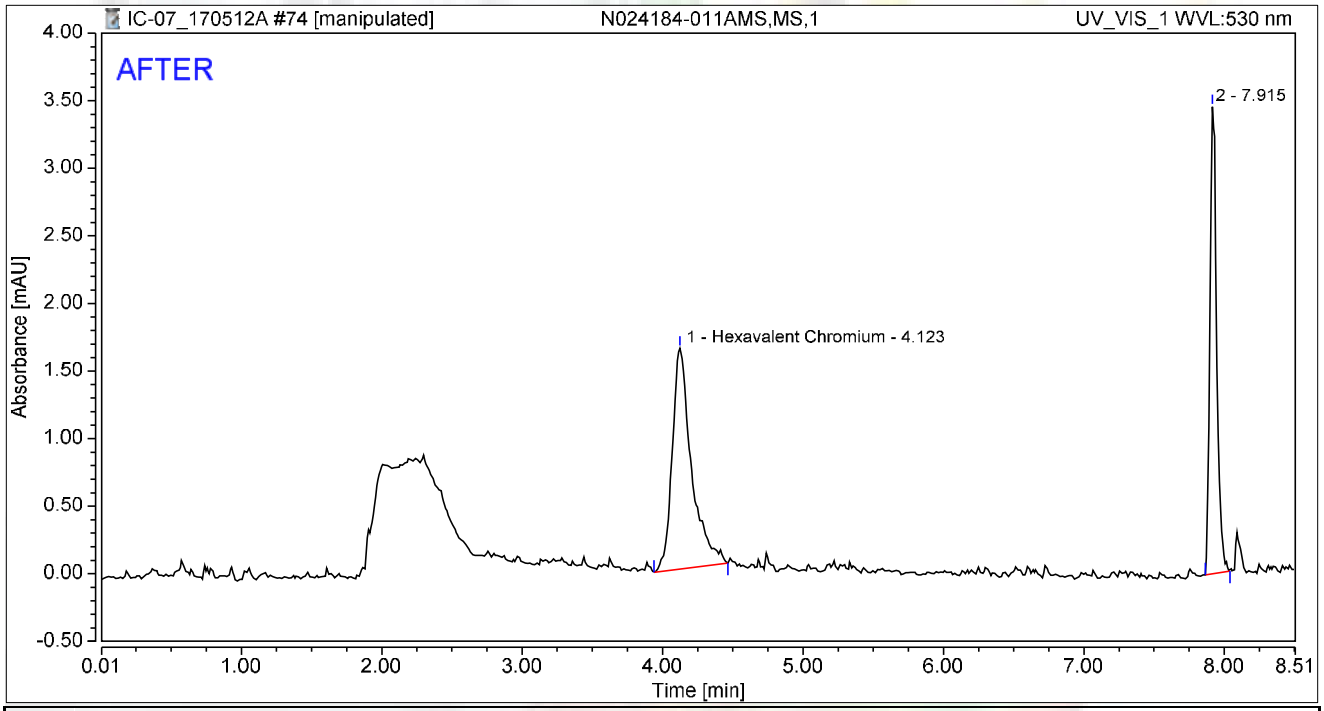
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.260	1.632	57.35	32.09	1.0661
2		7.915	0.193	3.455	42.65	67.91	n.a.
Total:			**0.453**	**5.087**	**100.00**	**100.00**	

rba 5/16/2017

Reviewed by: Diggy 5/25/2017

My first report integration

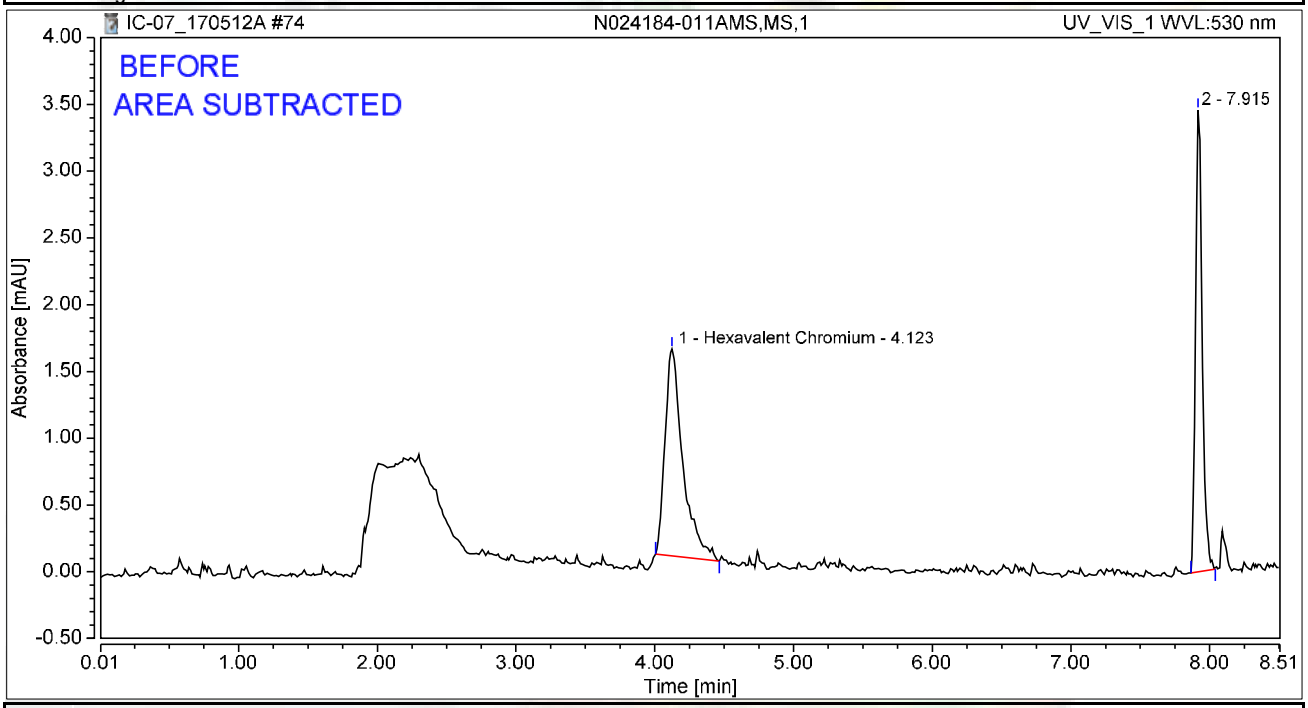
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024184-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.232	1.549	54.48	30.95	0.9492
2		7.915	0.193	3.455	45.52	69.05	n.a.
Total:			**0.425**	**5.004**	**100.00**	**100.00**	

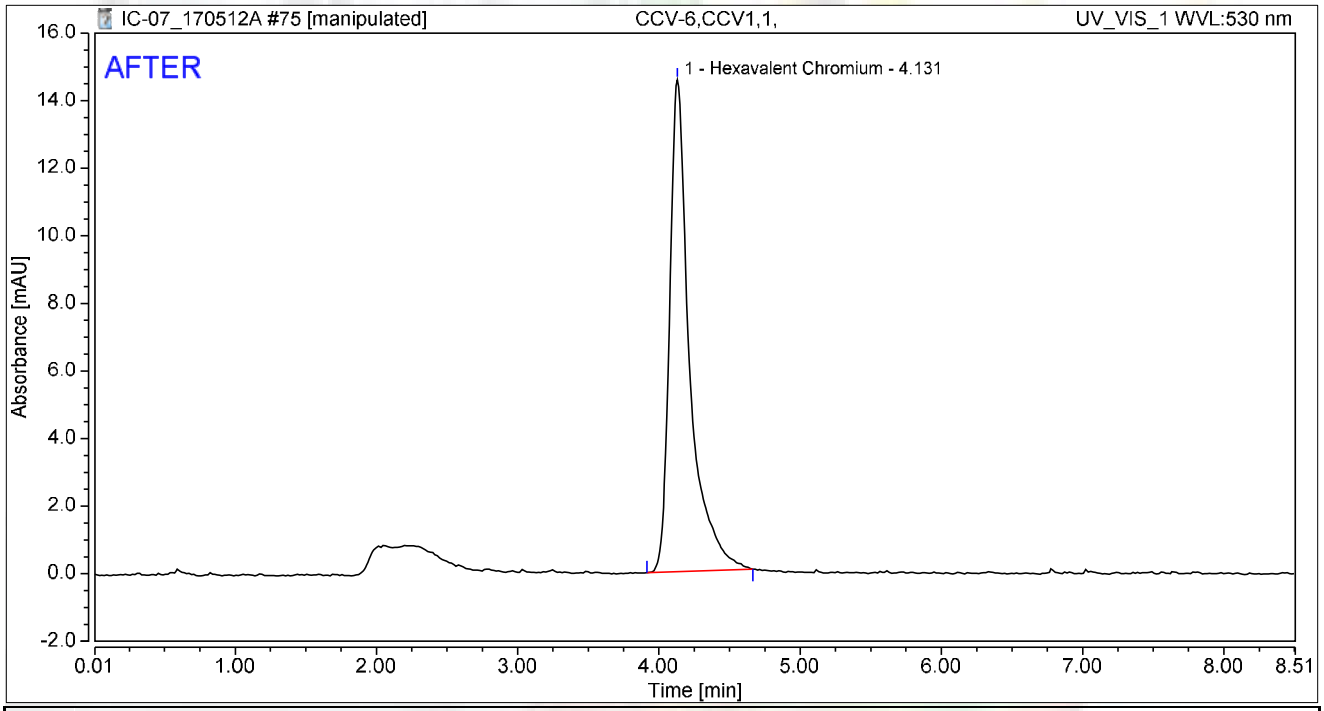
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.395	14.555	100.00	100.00	9.8189
Total:			**2.395**	**14.555**	**100.00**	**100.00**	

rba 5/16/2017

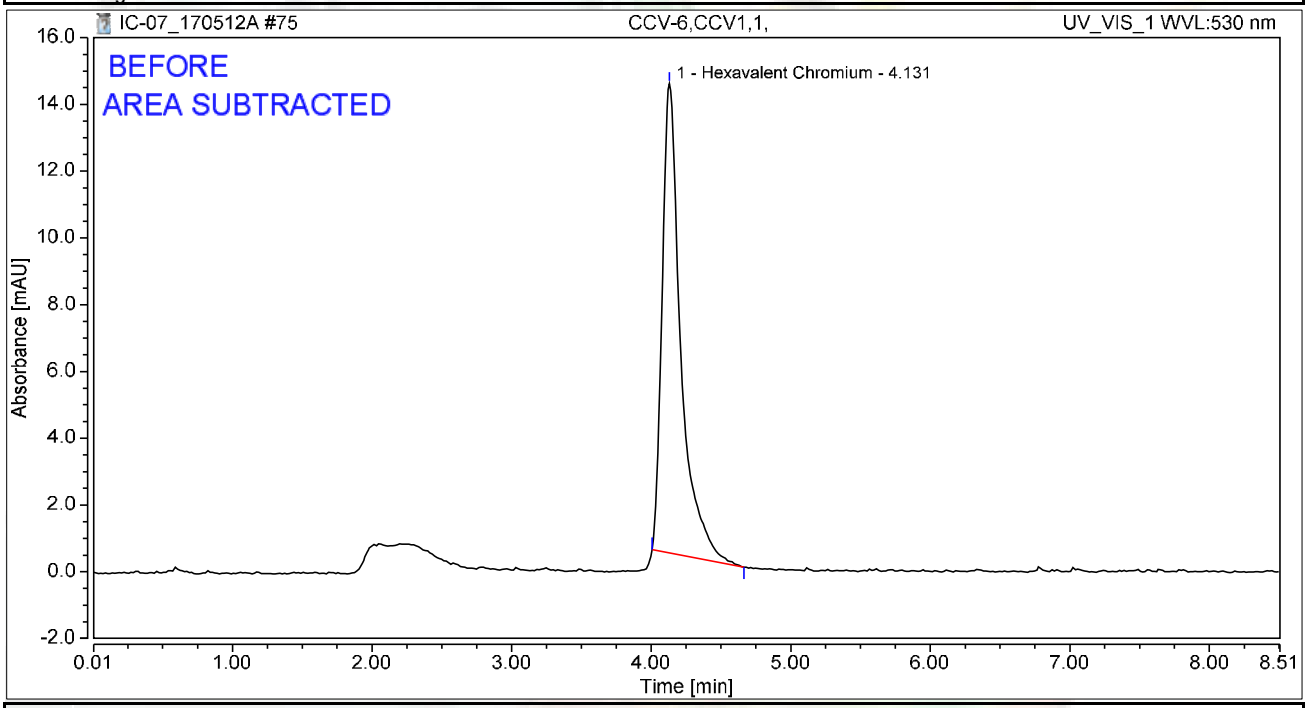
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.177	14.051	100.00	100.00	8.9277
Total:			**2.177**	**14.051**	**100.00**	**100.00**	

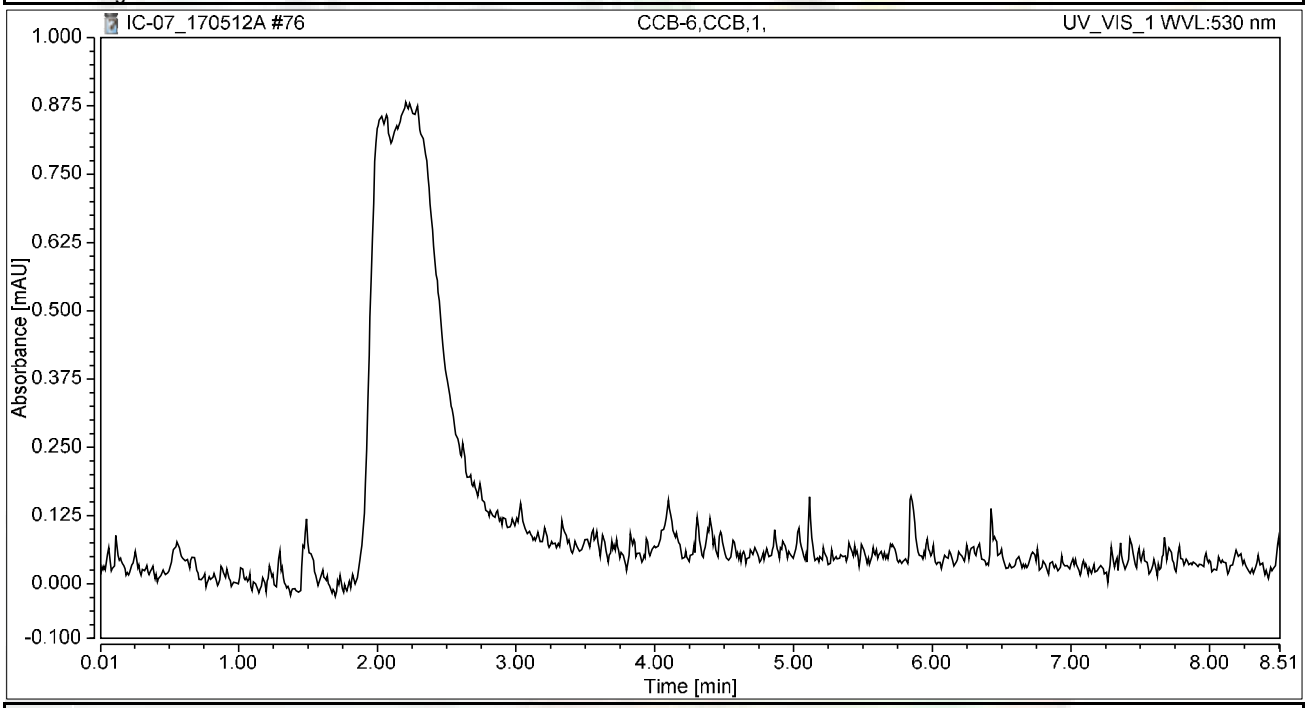
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

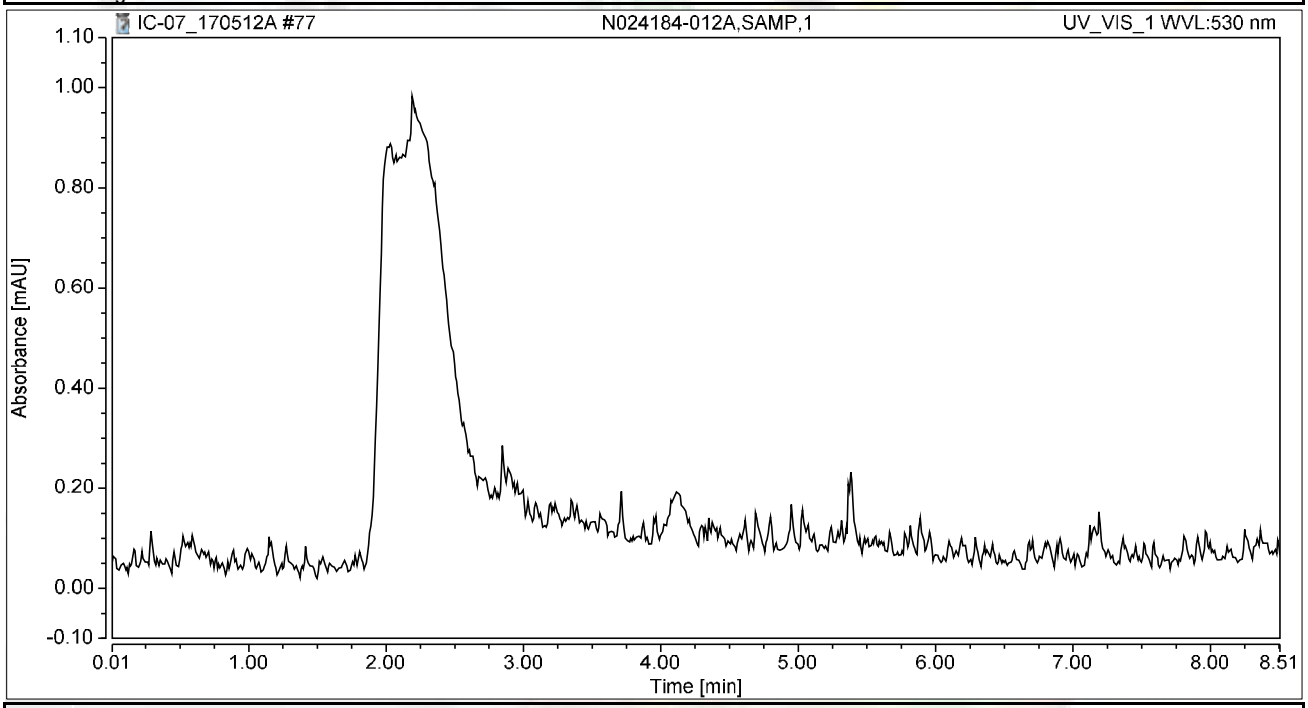
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-012A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

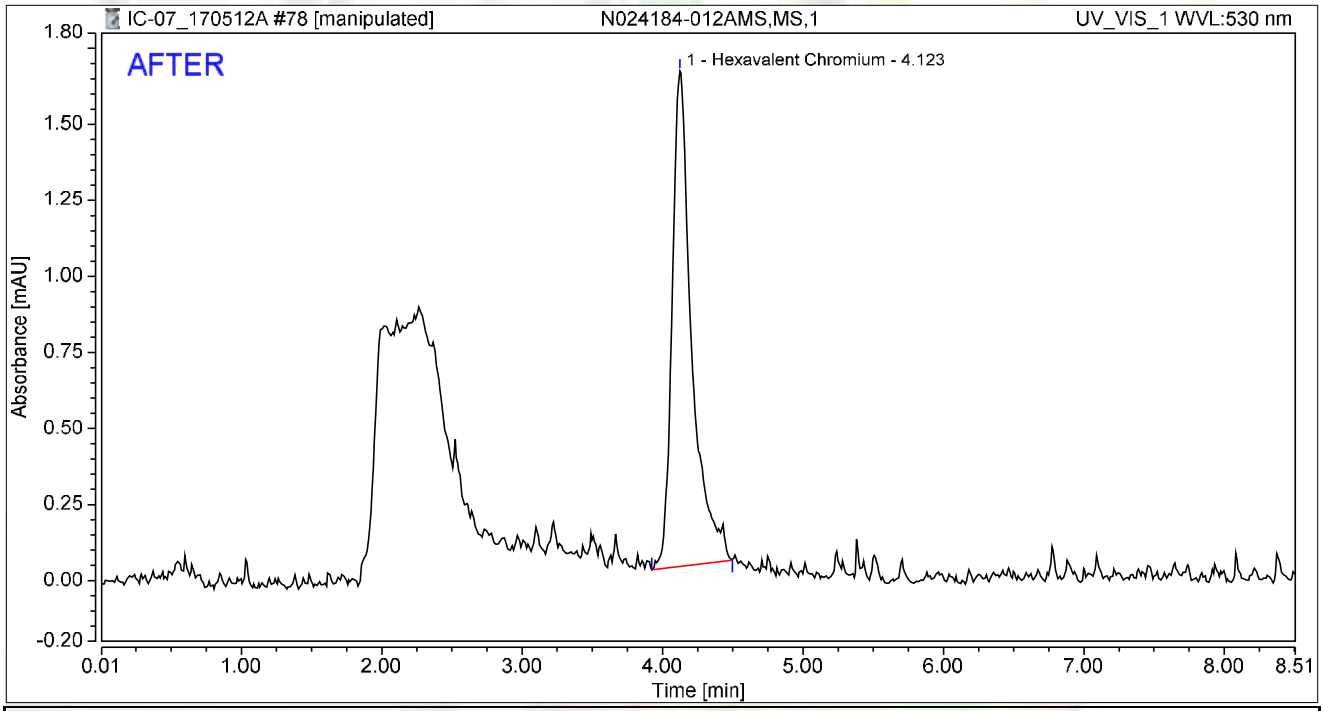
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.264	1.629	100.00	100.00	1.0823
Total:			**0.264**	**1.629**	**100.00**	**100.00**	

rba 5/16/2017

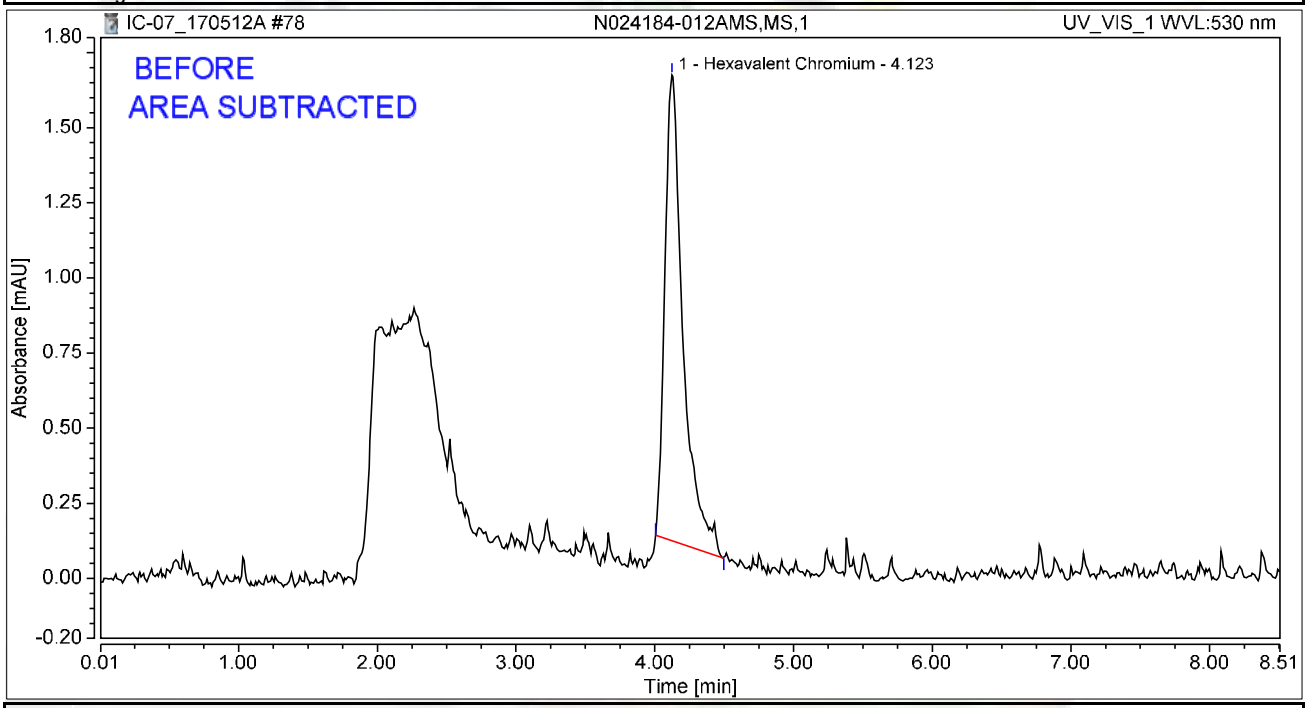
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-012AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.236	1.550	100.00	100.00	0.9664
Total:			**0.236**	**1.550**	**100.00**	**100.00**	

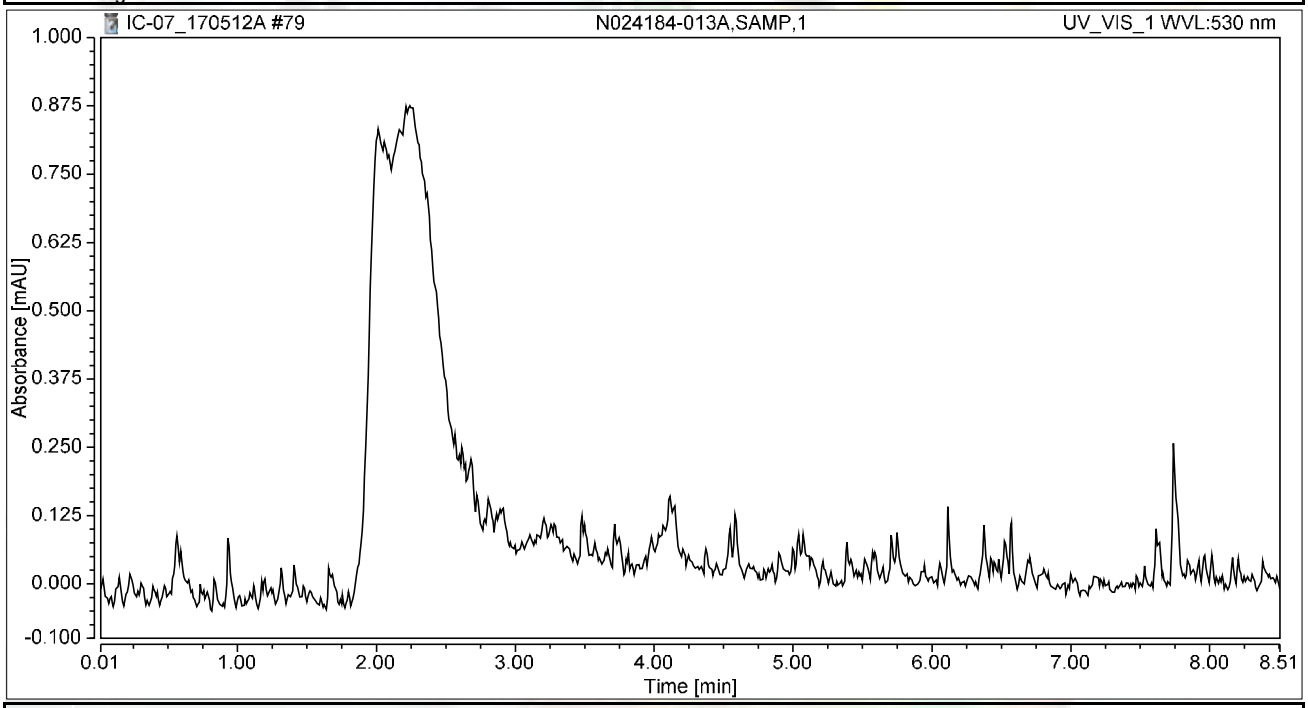
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-013A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

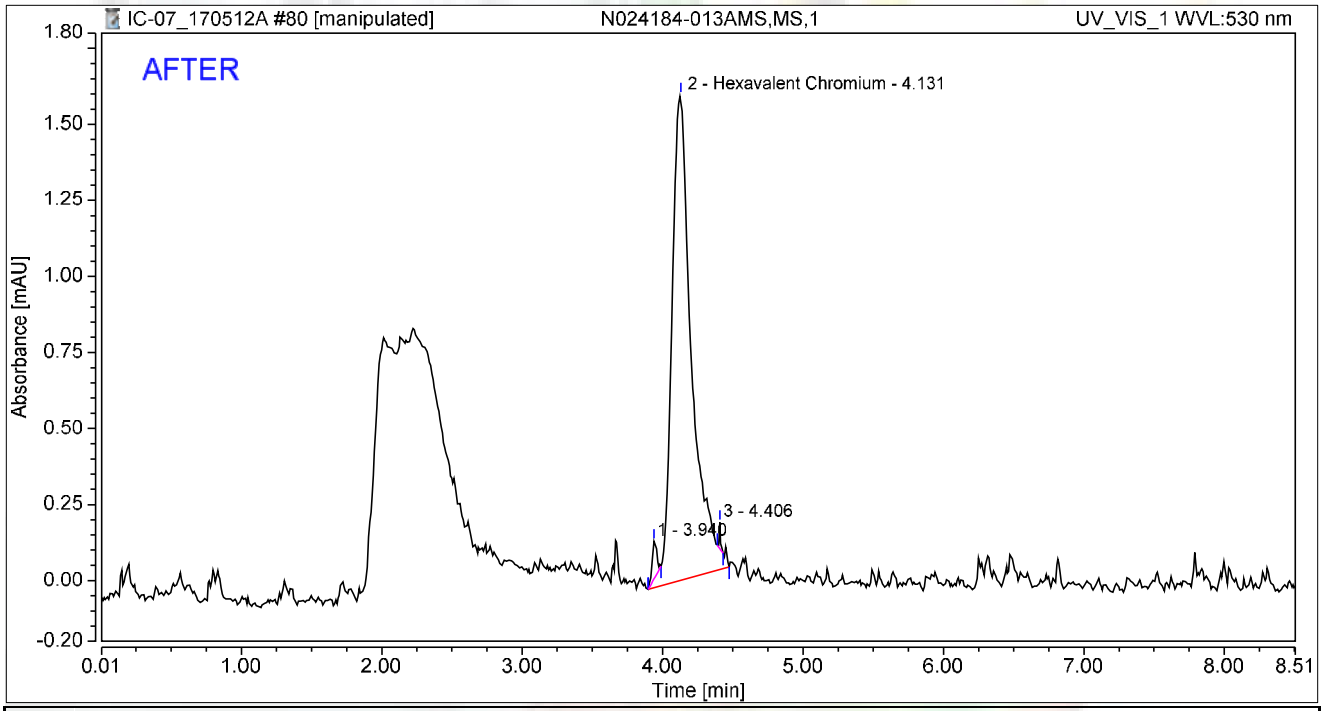
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1		3.940	0.004	0.124	1.67	6.85	n.a.
2	Hexavalent Chromium	4.131	0.263	1.596	97.94	88.38	1.0779
3		4.406	0.001	0.086	0.40	4.77	n.a.
Total:			**0.268**	**1.806**	**100.00**	**100.00**	

rba 5/16/2017

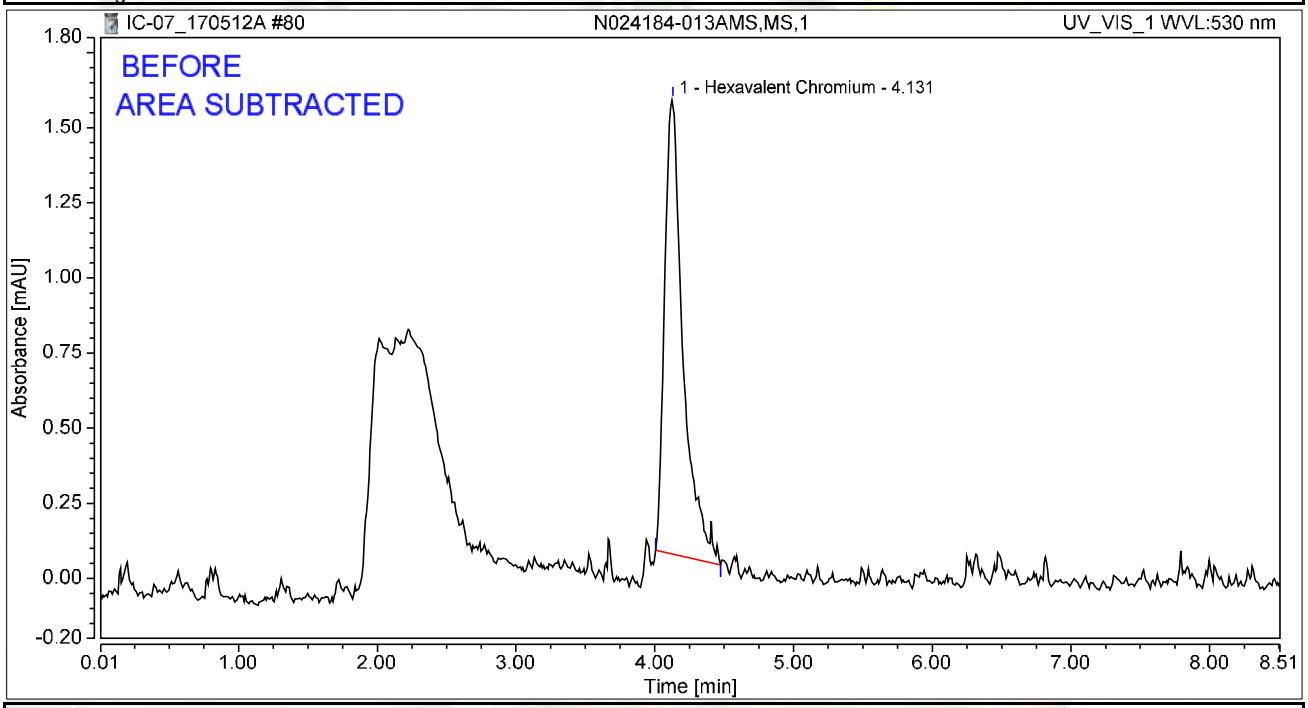
Reviewed by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.234	1.516	100.00	100.00	0.9601
Total:			**0.234**	**1.516**	**100.00**	**100.00**	

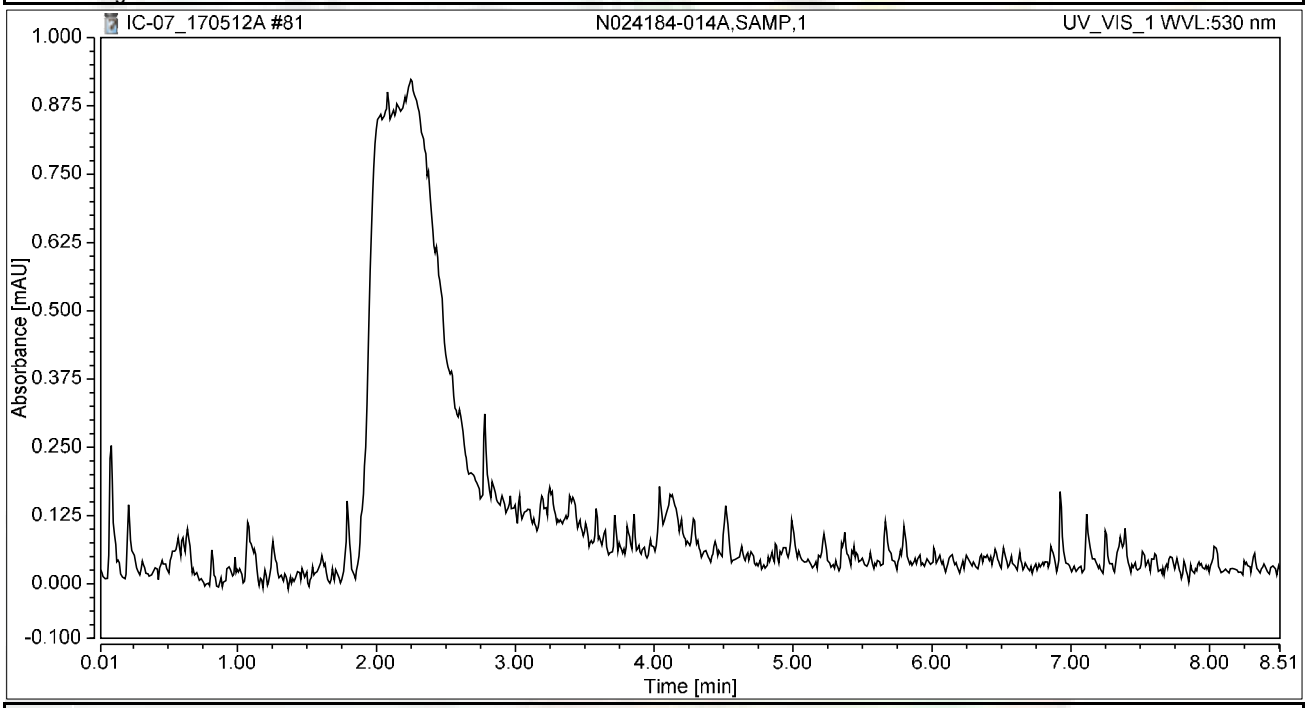
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-014A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

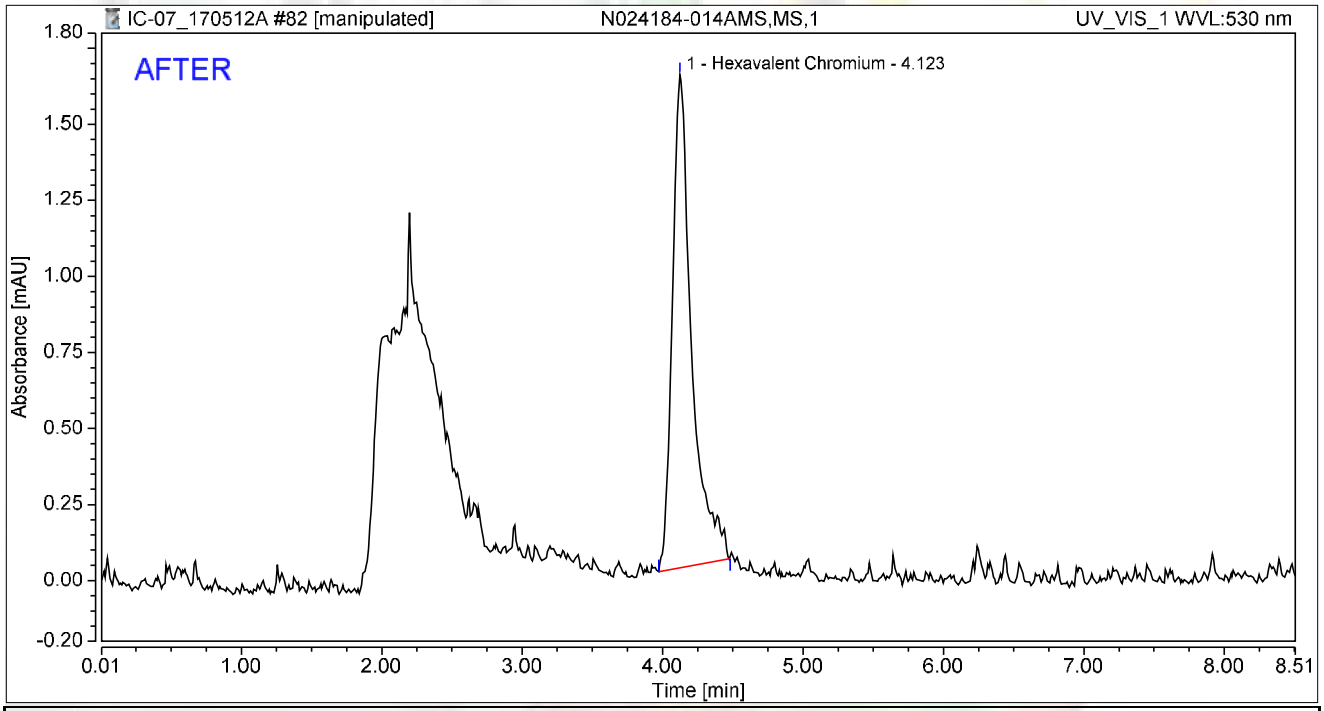
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024184-014AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.258	1.622	100.00	100.00	1.0583
Total:			**0.258**	**1.622**	**100.00**	**100.00**	

rba 5/16/2017

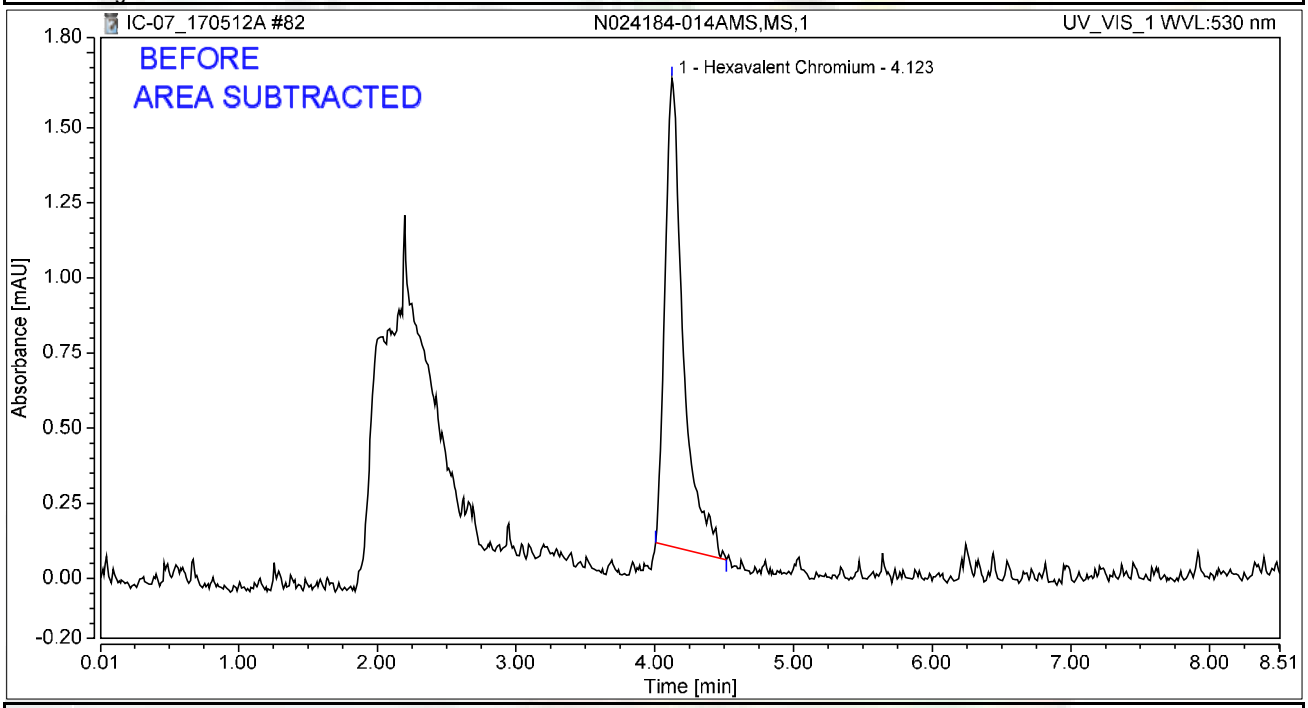
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024184-014AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.238	1.557	100.00	100.00	0.9751
Total:			**0.238**	**1.557**	**100.00**	**100.00**	

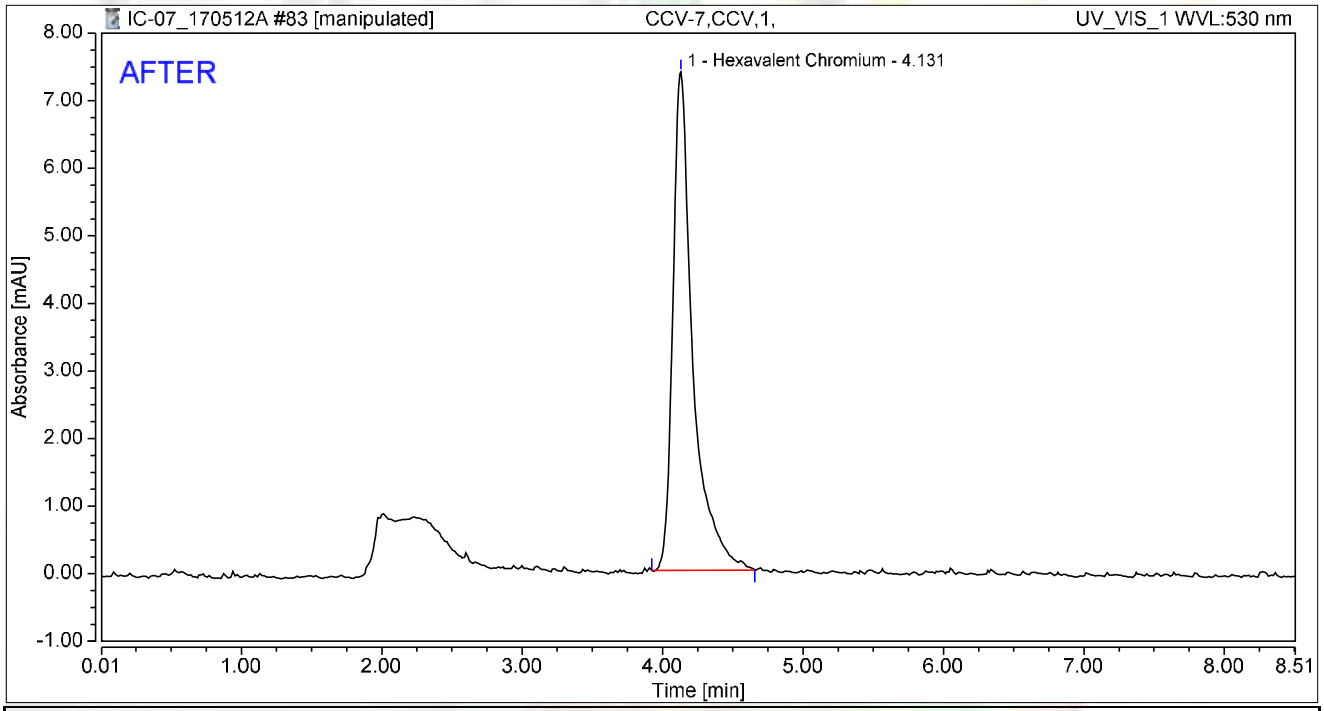
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.213	7.372	100.00	100.00	4.9748
Total:			**1.213**	**7.372**	**100.00**	**100.00**	

rba 5/16/2017

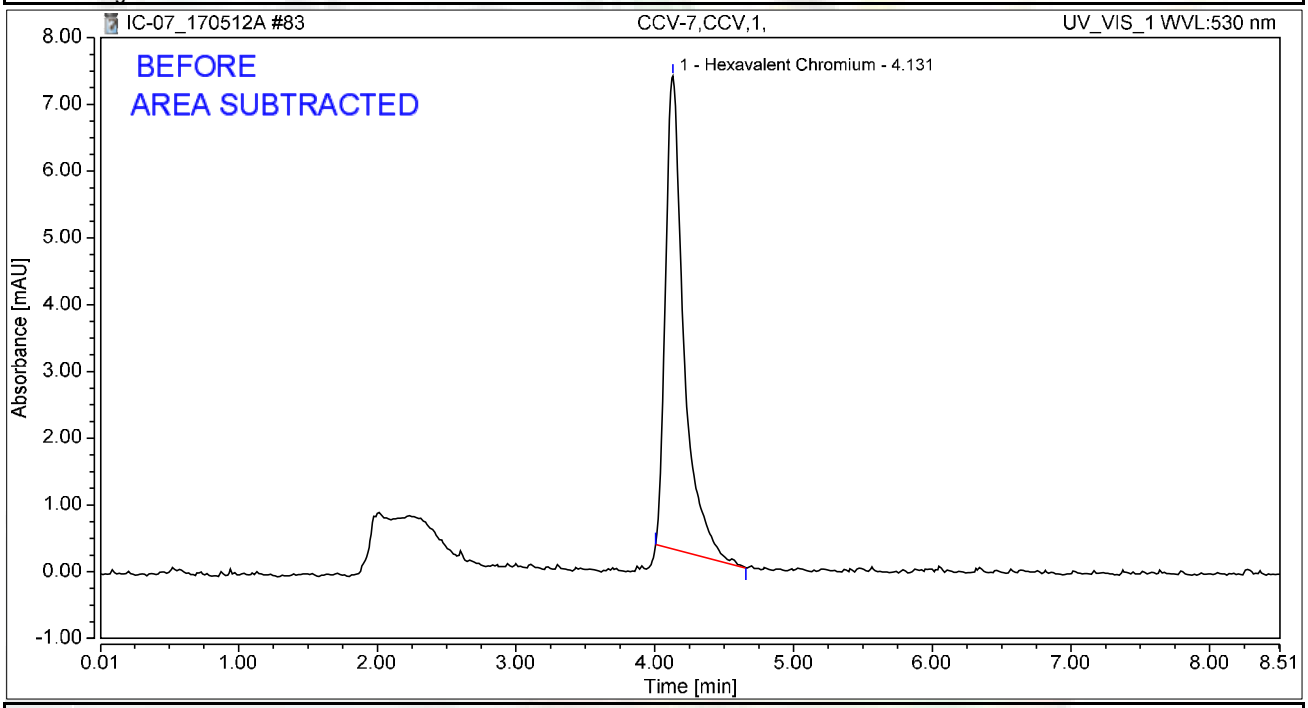
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.090	7.081	100.00	100.00	4.4695
Total:			**1.090**	**7.081**	**100.00**	**100.00**	

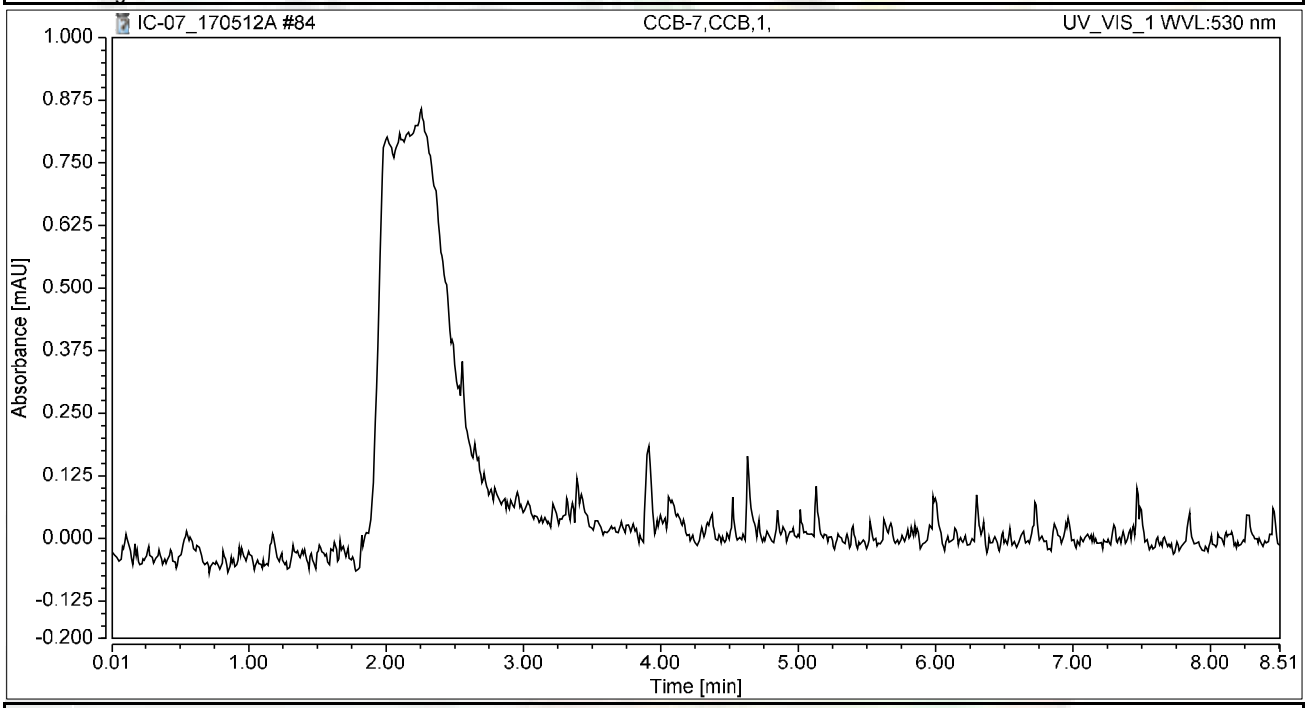
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**12/May/17 20:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115324, R115325 **Analyst:** REB

ASSET #: N024184 **Date Analyzed:** 5/17/17, 5/18/17

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 05/24/17 Date: —

2nd Level Reviewer 5/24/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N024184-001E** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4426*1

= 0.4426 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.44

RJB 05/24/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

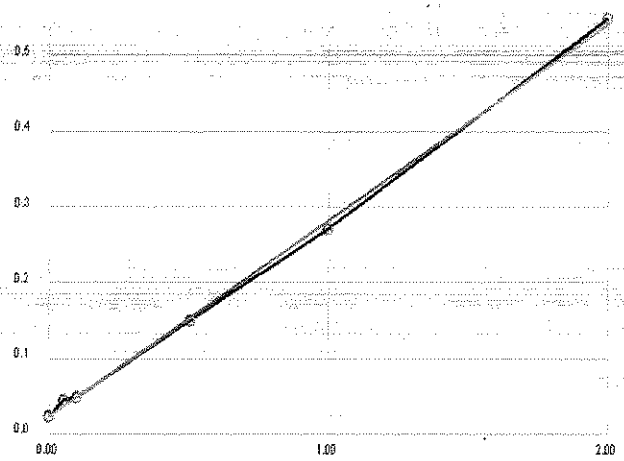
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2602x + 0.0223
Correlation	.999337

Calibrant	Energy	Set	Conc
1	0.0222	0.0000	-0.0005
2	0.0443	0.0500	0.0844
3	0.0480	0.1000	0.0987
4	0.1493	0.5000	0.4879
5	0.2707	1.0000	0.9544
6	0.5493	2.0000	2.0250



Notes:

2% CuSO4- R170502D
R1 Buffer- R170502E
R2 Coloring reagent- R170502F

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 05/24/17

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

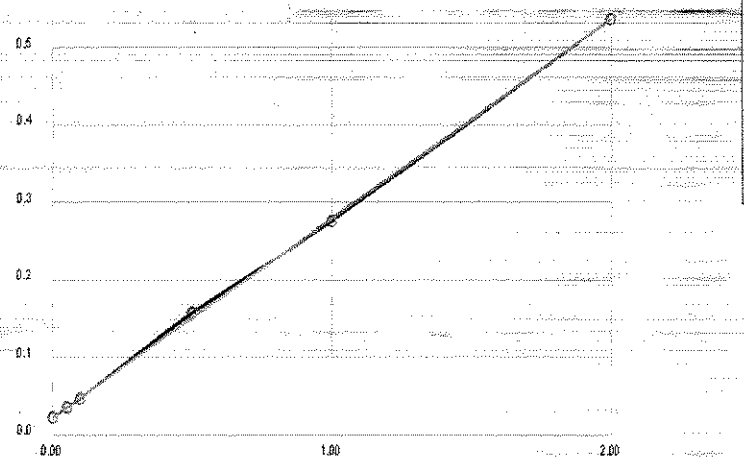
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2565x + 0.0231
Correlation	.999845

Calibrant	Energy	Set	Conc
1	0.0220	0.0000	-0.0044
2	0.0352	0.0500	0.0471
3	0.0475	0.1000	0.0951
4	0.1580	0.5000	0.5258
5	0.2758	1.0000	0.9850
6	0.5365	2.0000	2.0013



Notes:

05/24/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **ICV**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653023**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.530	0.050	0.5000	0	106	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **CCV**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653034**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.522	0.050	0.5000	0	104	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **CCV**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.548	0.050	0.5000	0	110	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **CCV**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.502	0.050	0.5000	0	100	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115325**
Client ID: **ICV**	Batch ID: **R115325**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2017**	SeqNo: **2648864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.527	0.050	0.5000	0	105	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115325**
Client ID: **CCV**	Batch ID: **R115325**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2017**	SeqNo: **2648879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.504	0.050	0.5000	0	101	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **ICB**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653024**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **CCB**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653035**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **CCB**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115324**
Client ID: **CCB**	Batch ID: **R115324**	TestNo: **SM4500-NO3**		Analysis Date: **5/17/2017**	SeqNo: **2653110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115325**
Client ID: **ICB**	Batch ID: **R115325**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2017**	SeqNo: **2648865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115325**
Client ID: **CCB**	Batch ID: **R115325**	TestNo: **SM4500-NO3**		Analysis Date: **5/18/2017**	SeqNo: **2648881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-17-2017 22:00
Time end: 05-18-2017 00:56

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	00:14:48	-0.0001		0.0223
2	<BLANK>	00:15:47	0.0022		0.0229
3	<CAL1>	00:16:43	-0.0005	[0]	0.0222
4	<CAL2>	00:17:38	0.0844	[0.05]	0.0443
5	<CAL3>	00:18:39	0.0987	[0.1]	0.0480
6	<CAL4>	00:19:33	0.4879	[0.5]	0.1493
7	<CAL5>	00:20:35	0.9544	[1]	0.2707
8	<CAL6>	00:21:30	2.0250	[2]	0.5493
9	,BLANK,BLANK,1,	00:22:24	0.0453		0.0341
10	,ICV,ICV,1,	00:23:26	0.5298		0.1602
11	,ICB,ICB,1,	00:24:21	0.0137		0.0259
12	,MB-H2O,MBLK,1,	00:25:17	0.0034		0.0232
13	,LCS-H2O,LCS,1,	00:26:17	0.5398		0.1628
14	,N024171-001K,SAMP,1,	00:27:13	0.2574		0.0893
15	,N024171-001KDUP,DUP,1,	00:28:08	0.2481		0.0869
16	,N024171-001KMS,MS,1,	00:29:09	0.7235		0.2106
17	,N024171-001KMSD,MSD,1,	00:30:04	0.8465		0.2426
18	,N024106-004C,SAMP,1,	00:31:00	0.0864		0.0448
19	,N024106-005C,SAMP,1,	00:32:01	0.0602		0.0380
20	,N024106-007C,SAMP,1,	00:32:56	0.0403		0.0328
21	,BLANK,BLANK,1,	00:33:51	0.0057		0.0238
22	,CCV-1,CCV,1,	00:34:52	0.5217		0.1581
23	,CCB-1,CCB,1,	00:35:47	0.0103		0.0250
24	,N024107-002D,SAMP,5,	00:36:48	0.6178		0.1831
25	,N024172-001J,SAMP,1,	00:37:44	0.2243		0.0807
26	,N024173-001J,SAMP,1,	00:38:39	0.5141		0.1561

05/24/17

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N024174-001K,SAMP,1,	00:39:39	0.2881		0.0973
28	,N024175-001K,SAMP,1,	00:40:23	0.1321		0.0567
29	,N024184-001E,SAMP,1,	00:41:12	0.4426		0.1375
30	,N024184-002E,SAMP,1,	00:41:55	0.4703		0.1447
31	,N024184-003E,SAMP,1,	00:42:38	0.5790		0.1730
32	,N024184-004E,SAMP,1,	00:43:26	0.4745		0.1458
33	,BLANK,	00:44:10	0.0061		0.0239
34	,CCV-2,CCV,1,	00:44:57	0.5483		0.1650
35	,CCB-2,CCB,1,	00:45:41	0.0064		0.0240
36	,N024184-005E,SAMP,1,	00:46:23	0.5152		0.1564
37	,N024184-006E,SAMP,1,	00:47:12	0.5160		0.1566
38	,N024184-007E,SAMP,1,	00:47:56	0.4768		0.1464
39	,N024184-008E,SAMP,1,	00:48:38	0.5064		0.1541
40	,N024184-009E,SAMP,1,	00:49:27	0.4630		0.1428
41	,N024184-010E,SAMP,1,	00:50:09	0.4564		0.1411
42	,N024184-011E,SAMP,1,	00:50:53	0.4929		0.1506
43	,BLANK,	00:51:41	0.0022		0.0229
44	,CCV-3,CCV,1,	00:52:24	0.5018		0.1529
45	,CCV-3,CCV,1, not reported	00:53:07	0.5775		0.1726
46	,CCB-3,CCB,1,	00:53:55	-0.0001		0.0223

05/24/17

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Las Vegas, NV. 89118
702-307-2659
702-307-2691
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Time start: 05-18-2017 09:53
Time end: 05-18-2017 11:31

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	11:11:37	0.0003		0.0232
2	<BLANK>	11:12:32	-0.0055		0.0217
3	<CAL1>	11:13:27	-0.0044	[0]	0.0220
4	<CAL2>	11:14:27	0.0471	[0.05]	0.0352
5	<CAL3>	11:15:22	0.0951	[0.1]	0.0475
6	<CAL4>	11:16:12	0.5258	[0.5]	0.1580
7	<CAL5>	11:16:54	0.9850	[1]	0.2758
8	<CAL6>	11:17:43	2.0013	[2]	0.5365
9	,BLANK,BLANK,1,	11:18:25	0.0553		0.0373
10	,ICV,ICV,1,	11:19:14	0.5274		0.1584
11	,ICB,ICB,1,	11:19:56	0.0101		0.0257
12	,MB-H2O,MBLK,1,	11:20:39	-0.0067		0.0214
13	,LCS-H2O,LCS,1,	11:21:28	0.5461		0.1632
14	,N024184-012E,SAMP,1,	11:22:10	0.4479		0.1380
15	,N024184-012EDUP,DUP,1,	11:22:54	0.4401		0.1360
16	,N024184-012EMS,MS,1,	11:23:41	0.8934		0.2523
17	,N024184-012EMSD,MSD,1,	11:24:25	0.9098		0.2565
18	,N024106-004C,SAMP,1,	11:25:13	0.0771		0.0429
19	,N024106-005C,SAMP,1,	11:25:56	0.0420		0.0339
20	,N024106-007C,SAMP,1,	11:26:39	0.0249		0.0295
21	,N024184-012E,SAMP,1, 13E	11:27:27	0.4459		0.1375
22	,CCV-1,CCV,1,	11:28:10	0.5044		0.1525
23	,CCV-1,CCV,1, not reported	11:28:58	0.5531		0.1650
24	,CCB-1,CCB,1,	11:29:42	0.0007		0.0233

05/24/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: ~~05/1/17~~ 5/17/17
Time Analyzed: 10:00 PM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170502E
Color reagent: R170517B
2% Copper Sulfate: R170502D
Ammonium Hydroxide: CINV-170424A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N024171-001K		8.32						
2)	N024172-001J		8.39						
3)	N024173-001J		8.22						
4)	N024174-001K		8.84						
5)	N024175-001K		8.46						
6)	N024184-001E		8.29						
7)	N024184-002E		8.05						
8)	N024184-003E		6.51						
9)	N024184-004E		7.54						
10)	N024184-005E		8..64						
11)	N024184-006E		7.57						
12)	N024184-007E		7.78						
13)	N024184-008E		8.22						
14)	N024184-009E		6.87						
15)	N024184-010E		7.14						
16)	N024184-011E		8.12						
17)	N024184-012E		8.11						
18)	N024184-013E		8.15						
19)									
20)									
21)									
22)									
23)									

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Book # 1

RB 05/24/17

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62198
ASSET #: N024184

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/13/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Fe in N024160-013B PS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ Date: 5/23/2017

2nd Level Reviewer _____ Date: 5/23/2017

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N024184-003B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.02641 * 1 * (25/25) * 1000

Iron , ug/L = 26.41

Reporting results in two significant figures,

Iron , ug/L = 26

% RSD SUMMARY

RSD SUMMARY: 170513A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	10.79	15	PASS
Standard1	ICAL	1	Fe	0.02	0.98	15	PASS
Standard2	ICAL	1	Fe	0.05	1.2	15	PASS
Standard3	ICAL	1	Fe	2	0.4	15	PASS
Standard4	ICAL	1	Fe	5	1.032	15	PASS
Standard5	ICAL	1	Fe	7.5	0.89	15	PASS
Standard6	ICAL	1	Fe	10	0.34	15	PASS
Standard7	ICAL	1	Fe	20	0.045	15	PASS
ICV	ICV	1	Fe	10.45	0.11	15	PASS
ICB	ICB	1	Fe	0.00089	143.91	15	<PQL
LLICV	CCV1	1	Fe	0.024	1.24	20	PASS
ICSA1	ICSA	1	Fe	168.79	0.46	15	PASS
ICSAB1	ICSAB	1	Fe	177.24	0.18	15	PASS
CCV1	CCV	1	Fe	10.56	0.35	15	PASS
CCB1	CCB	1	Fe	-0.00072	123.081	15	<PQL
CCV2	CCV	1	Fe	10.38	0.5	15	PASS
CCB2	CCB	1	Fe	-0.0007	131.69	15	<PQL
LLCCV1	CCV2	1	Fe	0.022	1.5	20	PASS
ICSA2	ICSA	1	Fe	167.84	0.46	15	PASS
ICSAB2	ICSAB	1	Fe	177.89	0.73	15	PASS
CCV3	CCV	1	Fe	9.96	0.096	15	PASS
CCB3	CCB	1	Fe	-0.00067	180.61	15	<PQL
CCV4	CCV	1	Fe	10.27	0.39	15	PASS
CCB4	CCB	1	Fe	-0.00016	515.42	15	<PQL
MB-62198	MBLK	1	Fe	-0.0041	6.37	15	PASS
LCS-62198	LCS	1	Fe	0.1	0.9	15	PASS
N024160-013B	SAMP	1	Fe	0.026	1.83	15	PASS
N024160-013B	SAMP	5	Fe	0.0021	35.4	15	<PQL
CCV5	CCV	1	Fe	10.22	0.46	15	PASS
CCB5	CCB	1	Fe	0.00016	1041.29	15	<PQL
LLCCV2	CCV2	1	Fe	0.022	1.88	20	PASS
ICSA3	ICSA	1	Fe	169.68	4.75	15	PASS
ICSAB3	ICSAB	1	Fe	165.67	0.2	15	PASS
N024160-013B-PS	PS	1	Fe	0.16	2.56	15	PASS
N024160-013B-MS	MS	1	Fe	0.13	0.41	15	PASS
N024160-013B-MSD	MSD	1	Fe	0.13	0.52	15	PASS
N024160-014B	SAMP	1	Fe	0.018	1.35	15	PASS
N024160-015B	SAMP	1	Fe	0.028	2.44	15	PASS
N024160-016B	SAMP	1	Fe	0.013	1.64	15	PASS
N024184-001B	SAMP	1	Fe	0.0072	8.68	15	PASS
N024184-002B	SAMP	1	Fe	0.015	3.72	15	PASS
N024184-003B	SAMP	1	Fe	0.026	2.11	15	PASS

RSD SUMMARY: 170513A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N024184-004B	SAMP	1	Fe	0.0034	12.66	15	PASS
CCV6	CCV	1	Fe	10.17	0.54	15	PASS
CCB6	CCB	1	Fe	-0.00049	356.84	15	<PQL
N024184-005B	SAMP	1	Fe	0.0051	15.59	15	<PQL
N024184-006B	SAMP	1	Fe	0.0064	4.48	15	PASS
N024184-007B	SAMP	1	Fe	0.0096	2.4	15	PASS
N024184-008B	SAMP	1	Fe	0.017	3.5	15	PASS
N024184-009B	SAMP	1	Fe	0.034	0.63	15	PASS
N024184-010B	SAMP	1	Fe	0.012	3.95	15	PASS
N024184-011B	SAMP	1	Fe	0.057	0.22	15	PASS
N024184-012B	SAMP	1	Fe	0.014	7.054	15	PASS
N024184-013B	SAMP	1	Fe	0.019	2.19	15	PASS
CCV7	CCV	1	Fe	10.31	1.71	15	PASS
CCB7	CCB	1	Fe	0.00078	188.66	15	<PQL
LLCCV3	CCV2	1	Fe	0.024	3.99	20	PASS
ICSA4	ICSA	1	Fe	-0.23	207.91	15	<PQL
ICSAB4	ICSAB	1	Fe	168	0.6	15	PASS
ICSA4	ICSA	1	Fe	166.12	0.43	15	PASS
ICSAB4	ICSAB	1	Fe	-0.48	238.2	15	<PQL
ICSAB4	ICSAB	1	Fe	181.42	0.73	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170513A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-170306C
Standard3	MWST-170306F,5<50mL
Standard4	MWST-170306F,12.5<50mL
Standard5	MWST-170306F,15<40mL
Standard6	MWST-170306F,25<50mL
Standard7	MWST-170306F
ICV	MWST-170430G
CCV	MWST-170306F,25<50mL
ICSA/ICSAB	MWST-170228D/ MWST-170430H
Int. Std. (Y)	MSST-170404Q/R
PS Spike	MWST-170430J/-170430B;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/13/2017	10:09:07 AM
2	Standard1	ICAL	1	05/13/2017	10:13:56 AM
3	Standard2	ICAL	1	05/13/2017	10:18:45 AM
4	Standard3	ICAL	1	05/13/2017	10:23:34 AM
5	Standard4	ICAL	1	05/13/2017	10:28:26 AM
6	Standard5	ICAL	1	05/13/2017	10:34:19 AM
7	Standard6	ICAL	1	05/13/2017	10:40:10 AM
8	Standard7	ICAL	1	05/13/2017	10:46:01 AM
9	ICV	ICV	1	05/13/2017	10:51:26 AM
1	ICB	ICB	1	05/13/2017	10:57:19 AM
2	LLICV	CCV1	1	05/13/2017	11:02:08 AM
4	ICSA1	ICSA	1	05/13/2017	11:06:59 AM
5	ICSAB1	ICSAB	1	05/13/2017	11:13:02 AM
38	MB-62172	MBLK	1	05/13/2017	11:19:05 AM
39	LCS1-62172	LCS	1	05/13/2017	11:23:56 AM
40	N024075-002E	SAMP	1	05/13/2017	11:29:47 AM
41	N024075-002E	SAMP	5	05/13/2017	11:35:38 AM
42	N024075-002E-PS	PS	1	05/13/2017	11:40:27 AM
43	N024075-002E-MS1	MS	1	05/13/2017	11:46:18 AM
44	N024075-002E-MSD1	MSD	1	05/13/2017	11:52:09 AM
45	N024107-001B	SAMP	1	05/13/2017	11:58:01 AM
46	N024107-002B	SAMP	1	05/13/2017	12:03:53 PM
47	N024129-001A	SAMP	1	05/13/2017	12:09:45 PM
7	CCV1	CCV	1	05/13/2017	12:14:37 PM
1	CCB1	CCB	1	05/13/2017	12:20:29 PM
48	N024129-002A	SAMP	1	05/13/2017	12:25:19 PM
49	N024129-003A	SAMP	1	05/13/2017	12:30:10 PM
50	N024130-001A	SAMP	1	05/13/2017	12:35:01 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
51	N024130-002A	SAMP	1	05/13/2017	12:39:51 PM
52	N024130-003A	SAMP	1	05/13/2017	12:44:41 PM
53	N024130-004A	SAMP	1	05/13/2017	12:49:31 PM
7	CCV2	CCV	1	05/13/2017	12:54:22 PM
1	CCB2	CCB	1	05/13/2017	01:00:13 PM
2	LLCCV1	CCV2	1	05/13/2017	01:05:01 PM
4	ICSA2	ICSA	1	05/13/2017	01:09:50 PM
5	ICSAB2	ICSAB	1	05/13/2017	01:15:54 PM
98	MB-62187	MBLK	1	05/13/2017	01:27:36 PM
99	LCS-62187	LCS	1	05/13/2017	01:32:27 PM
100	N024136-001B	SAMP	1	05/13/2017	01:38:20 PM
101	N024136-001B	SAMP	5	05/13/2017	01:43:11 PM
102	N024136-001B-PS	PS	1	05/13/2017	01:48:02 PM
103	N024136-001B-MS	MS	1	05/13/2017	01:53:55 PM
104	N024136-001B-MSD	MSD	1	05/13/2017	01:59:49 PM
105	N024136-002B	SAMP	1	05/13/2017	02:05:42 PM
106	N024136-003B	SAMP	1	05/13/2017	02:10:34 PM
107	N024136-004B	SAMP	1	05/13/2017	02:15:25 PM
7	CCV3	CCV	1	05/13/2017	02:21:16 PM
1	CCB3	CCB	1	05/13/2017	02:26:40 PM
108	N024136-005B	SAMP	1	05/13/2017	02:31:28 PM
109	N024136-006B	SAMP	1	05/13/2017	02:37:22 PM
110	N024136-007B	SAMP	1	05/13/2017	02:42:13 PM
111	N024136-008B	SAMP	1	05/13/2017	02:47:07 PM
112	N024160-001B	SAMP	1	05/13/2017	02:51:58 PM
113	N024160-002B	SAMP	1	05/13/2017	02:56:51 PM
114	N024160-003B	SAMP	1	05/13/2017	03:01:44 PM
115	N024160-004B	SAMP	1	05/13/2017	03:06:38 PM
116	N024160-005B	SAMP	1	05/13/2017	03:11:30 PM
117	N024160-006B	SAMP	1	05/13/2017	03:16:23 PM
7	CCV4	CCV	1	05/13/2017	03:21:15 PM
1	CCB4	CCB	1	05/13/2017	03:27:07 PM
118	N024160-007B	SAMP	1	05/13/2017	03:31:56 PM
119	N024160-008B	SAMP	1	05/13/2017	03:37:48 PM
120	N024160-009B	SAMP	1	05/13/2017	03:43:41 PM
121	N024160-010B	SAMP	1	05/13/2017	03:49:35 PM
122	N024160-011B	SAMP	1	05/13/2017	03:54:29 PM
123	N024160-012B	SAMP	1	05/13/2017	04:00:22 PM
124	MB-62198	MBLK	1	05/13/2017	04:05:43 PM
125	LCS-62198	LCS	1	05/13/2017	04:10:05 PM
126	N024160-013B	SAMP	1	05/13/2017	04:15:59 PM
127	N024160-013B	SAMP	5	05/13/2017	04:21:11 PM
7	CCV5	CCV	1	05/13/2017	04:26:04 PM
1	CCB5	CCB	1	05/13/2017	04:31:55 PM
2	LLCCV2	CCV2	1	05/13/2017	04:36:44 PM
4	ICSA3	ICSA	1	05/13/2017	04:41:33 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
8	ICSAB3	ICSAB	1	05/13/2017	04:47:35 PM
128	N024160-013B-PS	PS	1	05/13/2017	04:53:35 PM
129	N024160-013B-MS	MS	1	05/13/2017	04:59:30 PM
130	N024160-013B-MSD	MSD	1	05/13/2017	05:05:23 PM
131	N024160-014B	SAMP	1	05/13/2017	05:11:18 PM
132	N024160-015B	SAMP	1	05/13/2017	05:16:11 PM
133	N024160-016B	SAMP	1	05/13/2017	05:21:05 PM
134	N024184-001B	SAMP	1	05/13/2017	05:25:58 PM
135	N024184-002B	SAMP	1	05/13/2017	05:30:52 PM
136	N024184-003B	SAMP	1	05/13/2017	05:35:46 PM
137	N024184-004B	SAMP	1	05/13/2017	05:40:39 PM
7	CCV6	CCV	1	05/13/2017	05:45:33 PM
1	CCB6	CCB	1	05/13/2017	05:51:25 PM
138	N024184-005B	SAMP	1	05/13/2017	06:12:36 PM
139	N024184-006B	SAMP	1	05/13/2017	06:17:30 PM
140	N024184-007B	SAMP	1	05/13/2017	06:22:24 PM
141	N024184-008B	SAMP	1	05/13/2017	06:27:18 PM
142	N024184-009B	SAMP	1	05/13/2017	06:32:11 PM
143	N024184-010B	SAMP	1	05/13/2017	06:37:05 PM
144	N024184-011B	SAMP	1	05/13/2017	06:41:59 PM
145	N024184-012B	SAMP	1	05/13/2017	06:46:53 PM
146	N024184-013B	SAMP	1	05/13/2017	06:51:46 PM
7	CCV7	CCV	1	05/13/2017	06:56:40 PM
1	CCB7	CCB	1	05/13/2017	07:02:32 PM
2	LLCCV3	CCV2	1	05/13/2017	07:07:21 PM
4	ICSA4	ICSA	1	05/13/2017	07:12:10 PM
8	ICSAB4	ICSAB	1	05/13/2017	07:17:59 PM
8	ICSA4	ICSA	1	05/13/2017	08:24:07 PM
4	ICSAB4	ICSAB	1	05/13/2017	08:30:08 PM
5	ICSAB4	ICSAB	1	05/13/2017	08:36:38 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/12/2017 8:00:00**
Prep End Date: **5/12/2017 1:00:00**

Reviewed/ Date: 5/23/2017

Initials/ Date: for 5/23/2017

Prep Batch **62198** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62198	Aqueous		25	☐	0	0	25	1.000		
MB-62198	Aqueous		25	☐	0	0	25	1.000		
N024160-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-013B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-013B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-016B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8994	HYDROCHLORIC ACID
9000	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/12/2017 8:00:00**
Prep End Date: **5/12/2017 1:00:00**

Reviewed/ Date: 5/23/2017

Initials/ Date: 5/23/2017

Prep Batch **62198** Prep Code: **3010_W_DISS** Technician **Mark Gesmundo**

Prep Factor Units **mL / mL**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024184-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-013B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8994	HYDROCHLORIC ACID
9000	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-161205D	ICP Solution A	LCS,MS,MSD	0.5
MWST-170107E	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170513A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/13/2017	10:09:07 AM	Fe	273.953	121	0.00	mg/L	
Standard1	05/13/2017	10:13:56 AM	Fe	273.953	616	0.0200	mg/L	
Standard2	05/13/2017	10:18:45 AM	Fe	273.953	1978	0.050	mg/L	
Standard3	05/13/2017	10:23:34 AM	Fe	273.953	52678	2.000	mg/L	
Standard4	05/13/2017	10:28:26 AM	Fe	273.953	131054	5.000	mg/L	
Standard5	05/13/2017	10:34:19 AM	Fe	273.953	196981	7.500	mg/L	
Standard6	05/13/2017	10:40:10 AM	Fe	273.953	268905	10.000	mg/L	
Standard7	05/13/2017	10:46:01 AM	Fe	273.953	509137	20.000	mg/L	0.9998

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ICV**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10445.359	20	10000	0	104	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ZZZZZZ**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	24.006	20	20.00	0	120	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCV**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643513**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10562.111	20	10000	0	106	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCV**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643521**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10383.421	20	10000	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ZZZZZZ**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643523**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.489	20	20.00	0	112	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCV**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9959.532	20	10000	0	99.6	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCV**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643548**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10269.675	20	10000	0	103	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCV**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10219.165	20	10000	0	102	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ZZZZZZ**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	22.105	20	20.00	0	111	70	130				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCV**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10169.073	20	10000	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCV**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643586**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10315.335	20	10000	0	103	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ZZZZZZ**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	23.640	20	20.00	0	118	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ICB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643499**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.886	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643514**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.71852	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643522**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.696959	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.672684	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643549**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.156523	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.159	20									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.489315	20									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **CCB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643587**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.782	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ICSA**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643501**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	489874.445	50	500000	0	98.0	80	120				
Calcium	477760.911	500	500000	0	95.6	80	120				
Iron	168786.674	20	200000	0	84.4	80	120				
Magnesium	491307.583	100	500000	0	98.3	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ICSAB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643502**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	524020.192	50	500000	0	105	80	120				
Calcium	517321.908	500	500000	0	103	80	120				
Iron	177239.099	20	200000	0	88.6	80	120				
Magnesium	517869.652	100	500000	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ICSA**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643524**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	492231.017	50	500000	0	98.4	80	120				
Calcium	484973.049	500	500000	0	97.0	80	120				
Iron	167838.657	20	200000	0	83.9	80	120				
Magnesium	481997.143	100	500000	0	96.4	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ICSAB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	528474.102	50	500000	0	106	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115216**
Client ID: **ICSAB** Batch ID: **R115216** TestNo: **EPA 6010B** Analysis Date: **5/13/2017** SeqNo: **2643525**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	525801.328	500	500000	0	105	80	120				
Iron	177886.270	20	200000	0	88.9	80	120				
Magnesium	515149.865	100	500000	0	103	80	120				

Sample ID **ICSA3** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115216**
Client ID: **ICSA** Batch ID: **R115216** TestNo: **EPA 6010B** Analysis Date: **5/13/2017** SeqNo: **2643563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	486322.385	50	500000	0	97.3	80	120				
Calcium	479966.976	500	500000	0	96.0	80	120				
Iron	169683.432	20	200000	0	84.8	80	120				
Magnesium	489997.528	100	500000	0	98.0	80	120				

Sample ID **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115216**
Client ID: **ICSAB** Batch ID: **R115216** TestNo: **EPA 6010B** Analysis Date: **5/13/2017** SeqNo: **2643564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	510696.072	50	500000	0	102	80	120				
Calcium	516740.214	500	500000	0	103	80	120				
Iron	165672.608	20	200000	0	82.8	80	120				
Magnesium	506632.623	100	500000	0	101	80	120				

Sample ID **ICSA4** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115216**
Client ID: **ICSA** Batch ID: **R115216** TestNo: **EPA 6010B** Analysis Date: **5/13/2017** SeqNo: **2643591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	507684.739	50	500000	0	102	80	120				
Calcium	512059.127	500	500000	0	102	80	120				
Iron	166122.865	20	200000	0	83.1	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ICSA**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643591**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	517302.106	100	500000	0	103	80	120				

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID: **ICSAB**	Batch ID: **R115216**	TestNo: **EPA 6010B**		Analysis Date: **5/13/2017**	SeqNo: **2643593**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	514541.240	50	500000	0	103	80	120				
Calcium	487313.329	500	500000	0	97.5	80	120				
Iron	181417.969	20	200000	0	90.7	80	120				
Magnesium	508664.047	100	500000	0	102	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170513A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.065	106.54	65-125	PASS
Standard2	ICAL	1	1.058	105.83	65-125	PASS
Standard3	ICAL	1	1.083	108.26	65-125	PASS
Standard4	ICAL	1	1.096	109.64	65-125	PASS
Standard5	ICAL	1	1.11	110.65	65-125	PASS
Standard6	ICAL	1	1.039	103.93	65-125	PASS
Standard7	ICAL	1	1.034	103.38	65-125	PASS
ICV	ICV	1	1.033	103.33	65-125	PASS
ICB	ICB	1	1.0042	100.42	65-125	PASS
LLICV	CCV1	1	1.08	108.03	65-125	PASS
ICSA1	ICSA	1	1.034	103.41	65-125	PASS
ICSAB1	ICSAB	1	0.9	89.86	65-125	PASS
CCV1	CCV	1	1.12	111.86	65-125	PASS
CCB1	CCB	1	1.11	110.54	65-125	PASS
CCV2	CCV	1	1.13	113.22	65-125	PASS
CCB2	CCB	1	1.11	110.73	65-125	PASS
LLCCV1	CCV2	1	1.18	118.01	65-125	PASS
ICSA2	ICSA	1	1.1	110.43	65-125	PASS
ICSAB2	ICSAB	1	0.96	95.97	65-125	PASS
CCV3	CCV	1	1.12	111.62	65-125	PASS
CCB3	CCB	1	1.097	109.7	65-125	PASS
CCV4	CCV	1	1.11	110.73	65-125	PASS
CCB4	CCB	1	1.095	109.5	65-125	PASS
MB-62198	MBLK	1	1.089	108.93	65-125	PASS
LCS-62198	LCS	1	1.13	113.34	65-125	PASS
N024160-013B	SAMP	1	1.06	105.97	65-125	PASS
N024160-013B	SAMP	5	1.087	108.67	65-125	PASS
CCV5	CCV	1	1.11	111.37	65-125	PASS
CCB5	CCB	1	1.11	110.55	65-125	PASS
LLCCV2	CCV2	1	1.18	117.78	65-125	PASS
ICSA3	ICSA	1	1.087	108.66	65-125	PASS
ICSAB3	ICSAB	1	0.98	97.88	65-125	PASS
N024160-013B-PS	PS	1	1.07	107.04	65-125	PASS
N024160-013B-MS	MS	1	1.09	108.99	65-125	PASS
N024160-013B-MSD	MSD	1	1.083	108.34	65-125	PASS
N024160-014B	SAMP	1	1.083	108.29	65-125	PASS
N024160-015B	SAMP	1	1.083	108.27	65-125	PASS
N024160-016B	SAMP	1	1.038	103.83	65-125	PASS
N024184-001B	SAMP	1	1.075	107.49	65-125	PASS
N024184-002B	SAMP	1	1.08	108.04	65-125	PASS

INTERNAL STANDARD: 170513A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N024184-003B	SAMP	1	1.093	109.28	65-125	PASS
N024184-004B	SAMP	1	1.083	108.27	65-125	PASS
CCV6	CCV	1	1.14	113.73	65-125	PASS
CCB6	CCB	1	1.13	112.77	65-125	PASS
N024184-005B	SAMP	1	1.025	102.47	65-125	PASS
N024184-006B	SAMP	1	1.039	103.86	65-125	PASS
N024184-007B	SAMP	1	1.014	101.37	65-125	PASS
N024184-008B	SAMP	1	1.025	102.52	65-125	PASS
N024184-009B	SAMP	1	1.038	103.76	65-125	PASS
N024184-010B	SAMP	1	1.034	103.45	65-125	PASS
N024184-011B	SAMP	1	1.04	103.98	65-125	PASS
N024184-012B	SAMP	1	1.018	101.78	65-125	PASS
N024184-013B	SAMP	1	1.034	103.44	65-125	PASS
CCV7	CCV	1	1.075	107.55	65-125	PASS
CCB7	CCB	1	1.075	107.46	65-125	PASS
LLCCV3	CCV2	1	1.14	114.28	65-125	PASS
ICSA4	ICSA	1	-0.00024	-0.024	65-125	NR!
ICSAB4	ICSAB	1	0.95	94.91	65-125	PASS
ICSA4	ICSA	1	0.95	94.7	65-125	PASS
ICSAB4	ICSAB	1	-0.00023	-0.023	65-125	NR!
ICSAB4	ICSAB	1	0.96	96.014	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N024184
Test Method: EPA 6010B
Analysis Date: 5/13/2017

Matrix: Groundwater
Batch No.: 62198

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
~~N024136~~-013B DT 5X	Iron	ug/L	10.70808	NA	25.72273	58.37%	10

N024160-

Note: NA - Not applicable

Mary 5/23/2017
for

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	**N024160-013B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115216**
Client ID:	**ZZZZZZ**	Batch ID: **62198**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2643565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	155.293	20	100.0	25.72	130	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62241
ASSET #: N024184

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/18/2017

Method:

[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/24/2017 Date:

2nd Level Reviewer 5/24/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N024184-001C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.05285 * 1 * (25/25) * 1000

Iron , ug/L = 52.85

Reporting results in two significant figures,

Iron , ug/L = 53

% RSD SUMMARY

RSD SUMMARY: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	8.76	15	PASS
Standard1	ICAL	1	Fe	0.02	1.13	15	PASS
Standard2	ICAL	1	Fe	0.05	1.016	15	PASS
Standard3	ICAL	1	Fe	2	0.52	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.87	15	PASS
Standard6	ICAL	1	Fe	10	0.098	15	PASS
Standard7	ICAL	1	Fe	20	0.13	15	PASS
ICV	ICV	1	Fe	10.084	0.051	15	PASS
ICB	ICB	1	Fe	-0.00016	460.56	15	<PQL
LLICV	CCV1	1	Fe	0.021	1.55	20	PASS
ICSA1	ICSA	1	Fe	168.79	0.13	15	PASS
ICSAB1	ICSAB	1	Fe	182.2	0.89	15	PASS
MB-62241	MBLK	1	Fe	0.012	21.74	15	<PQL
LCS-62241	LCS	1	Fe	0.11	1.15	15	PASS
N024184-001C	SAMP	1	Fe	0.053	3.48	15	PASS
N024184-001C	SAMP	5	Fe	0.007	5.18	15	PASS
N024184-001C-PS	PS	1	Fe	0.14	1.31	15	PASS
N024184-001C-MS	MS	1	Fe	0.29	0.47	15	PASS
N024184-001C-MSD	MSD	1	Fe	0.29	0.48	15	PASS
N024184-002C	SAMP	1	Fe	0.046	0.48	15	PASS
N024184-003C	SAMP	1	Fe	0.04	1.19	15	PASS
N024184-004C	SAMP	1	Fe	0.053	0.9	15	PASS
CCV1	CCV	1	Fe	10.25	0.27	15	PASS
CCB1	CCB	1	Fe	0.0011	371.13	15	<PQL
CCB1	CCB	1	Fe	0.00035	432.56	15	<PQL
N024184-005C	SAMP	1	Fe	0.051	1.44	15	PASS
N024184-006C	SAMP	1	Fe	0.032	0.29	15	PASS
N024184-007C	SAMP	1	Fe	0.039	1.75	15	PASS
N024184-008C	SAMP	1	Fe	0.027	1.21	15	PASS
N024184-009C	SAMP	1	Fe	0.043	1.59	15	PASS
N024184-010C	SAMP	1	Fe	0.036	1.46	15	PASS
N024184-011C	SAMP	1	Fe	0.031	1.029	15	PASS
N024184-012C	SAMP	1	Fe	0.068	1.81	15	PASS
N024184-013C	SAMP	1	Fe	0.033	2.44	15	PASS
CCV2	CCV	1	Fe	10.22	0.31	15	PASS
CCB2	CCB	1	Fe	0.00091	173.55	15	<PQL
CCV3	CCV	1	Fe	11.15	10.2	15	PASS
CCV3	CCV	1	Fe	9.4	0.87	15	PASS
CCB3	CCB	1	Fe	-0.00056	199.98	15	<PQL
N024184-001C-MS	MS	1	Fe	0.14	0.82	15	PASS
N024184-001C-MSD	MSD	1	Fe	0.14	0.57	15	PASS

RSD SUMMARY: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCV4	CCV	1	Fe	8.97	0.51	15	PASS
CCV4	CCV	1	Fe	10.38	0.33	15	PASS
CCB4	CCB	1	Fe	-0.0013	74.41	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.71	20	PASS
ICSA2	ICSA	1	Fe	168.06	0.64	15	PASS
ICSAB2	ICSAB	1	Fe	183.24	0.35	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170518A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-170306C
Standard3	MWST-170306F,5<50mL
Standard4	MWST-170306F,12.5<50mL
Standard5	MWST-170306F,15<40mL
Standard6	MWST-170306F,25<50mL
Standard7	MWST-170306F
ICV	MWST-170430G
CCV	MWST-170306F,25<50mL
ICSA/ICSAB	MWST-170228D/ MWST-170430H
Int. Std. (Y)	MSST-170404Q/R
PS Spike	MWST-170430J/-170430B;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/18/2017	04:19:29 AM
2	Standard1	ICAL	1	05/18/2017	04:23:47 AM
10	Standard2	ICAL	1	05/18/2017	04:28:36 AM
18	Standard3	ICAL	1	05/18/2017	04:33:27 AM
19	Standard4	ICAL	1	05/18/2017	04:38:16 AM
6	Standard5	ICAL	1	05/18/2017	04:43:05 AM
8	Standard6	ICAL	1	05/18/2017	04:47:54 AM
20	Standard7	ICAL	1	05/18/2017	04:52:18 AM
9	ICV	ICV	1	05/18/2017	04:57:41 AM
1	ICB	ICB	1	05/18/2017	05:03:06 AM
2	LLICV	CCV1	1	05/18/2017	05:07:25 AM
4	ICSA1	ICSA	1	05/18/2017	05:12:14 AM
5	ICSAB1	ICSAB	1	05/18/2017	05:18:16 AM
38	MB-62241	MBLK	1	05/18/2017	05:24:18 AM
39	LCS-62241	LCS	1	05/18/2017	05:28:37 AM
40	N024184-001C	SAMP	1	05/18/2017	05:33:35 AM
41	N024184-001C	SAMP	5	05/18/2017	05:38:25 AM
42	N024184-001C-PS	PS	1	05/18/2017	05:43:14 AM
43	N024184-001C-MS	MS	1	05/18/2017	05:48:05 AM
44	N024184-001C-MSD	MSD	1	05/18/2017	05:52:56 AM
45	N024184-002C	SAMP	1	05/18/2017	05:57:46 AM
46	N024184-003C	SAMP	1	05/18/2017	06:02:37 AM
47	N024184-004C	SAMP	1	05/18/2017	06:07:29 AM
8	CCV1	CCV	1	05/18/2017	06:12:20 AM
1	CCB1	CCB	1	05/18/2017	06:17:11 AM
36	CCB1	CCB	1	05/18/2017	06:24:45 AM
48	N024184-005C	SAMP	1	05/18/2017	06:29:06 AM
49	N024184-006C	SAMP	1	05/18/2017	06:33:58 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
50	N024184-007C	SAMP	1	05/18/2017	06:38:51 AM
51	N024184-008C	SAMP	1	05/18/2017	06:43:42 AM
52	N024184-009C	SAMP	1	05/18/2017	06:48:33 AM
53	N024184-010C	SAMP	1	05/18/2017	06:53:24 AM
54	N024184-011C	SAMP	1	05/18/2017	06:58:16 AM
55	N024184-012C	SAMP	1	05/18/2017	07:03:07 AM
56	N024184-013C	SAMP	1	05/18/2017	07:07:58 AM
57	MB-62242	MBLK	1	05/18/2017	07:12:49 AM
8	CCV2	CCV	1	05/18/2017	07:17:10 AM
36	CCB2	CCB	1	05/18/2017	07:22:02 AM
58	LCS-62242	LCS	1	05/18/2017	07:26:23 AM
59	N024191-002C	SAMP	1	05/18/2017	07:31:14 AM
60	N024191-002C	SAMP	5	05/18/2017	07:36:05 AM
61	N024191-002C-PS	PS	1	05/18/2017	07:40:56 AM
62	N024191-002C-MS	MS	1	05/18/2017	07:45:48 AM
63	N024191-002C-MSD	MSD	1	05/18/2017	07:50:40 AM
64	N024191-003C	SAMP	1	05/18/2017	07:55:32 AM
65	N024191-004C	SAMP	1	05/18/2017	08:00:24 AM
66	N024191-005C	SAMP	1	05/18/2017	08:05:15 AM
67	N024191-006C	SAMP	1	05/18/2017	08:10:07 AM
8	CCV3	CCV	1	05/18/2017	08:14:59 AM
8	CCV3	CCV	1	05/18/2017	08:19:04 AM
36	CCB3	CCB	1	05/18/2017	08:23:54 AM
68	N024191-007C	SAMP	1	05/18/2017	08:28:46 AM
69	N024191-008C	SAMP	1	05/18/2017	08:33:38 AM
70	N024191-009C	SAMP	1	05/18/2017	08:38:29 AM
71	N024191-010C	SAMP	1	05/18/2017	08:43:19 AM
72	N024191-011C	SAMP	1	05/18/2017	08:48:11 AM
73	N024191-012C	SAMP	1	05/18/2017	08:53:03 AM
74	N024191-013C	SAMP	1	05/18/2017	08:58:14 AM
75	N024191-014C	SAMP	1	05/18/2017	09:03:05 AM
43	N024184-001C-MS	MS	1	05/18/2017	09:07:55 AM
44	N024184-001C-MSD	MSD	1	05/18/2017	09:12:47 AM
8	CCV4	CCV	1	05/18/2017	09:17:37 AM
8	CCV4	CCV	1	05/18/2017	09:24:57 AM
36	CCB4	CCB	1	05/18/2017	09:30:48 AM
2	LLCCV1	CCV2	1	05/18/2017	09:35:09 AM
4	ICSA2	ICSA	1	05/18/2017	09:40:08 AM
5	ICSAB2	ICSAB	1	05/18/2017	09:46:09 AM
76	MB-62243	MBLK	1	05/18/2017	09:54:29 AM
77	LCS-62243	LCS	1	05/18/2017	09:58:51 AM
78	N024182-004B	SAMP	1	05/18/2017	10:03:42 AM
79	N024182-004B	SAMP	5	05/18/2017	10:08:33 AM
80	N024182-004B-PS	PS	1	05/18/2017	10:13:24 AM
81	N024182-004B-MS	MS	1	05/18/2017	10:18:16 AM
82	N024182-004B-MSD	MSD	1	05/18/2017	10:23:07 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
83	N024182-005B	SAMP	1	05/18/2017	10:27:58 AM
84	N024182-006B	SAMP	1	05/18/2017	10:32:50 AM
85	N024182-007B	SAMP	1	05/18/2017	10:37:43 AM
8	CCV5	CCV	1	05/18/2017	10:43:34 AM
36	CCB5	CCB	1	05/18/2017	10:49:25 AM
86	N024182-008B	SAMP	1	05/18/2017	10:53:47 AM
87	N024182-011B	SAMP	1	05/18/2017	10:58:38 AM
88	N024182-012B	SAMP	1	05/18/2017	11:04:29 AM
89	N024191-002B	SAMP	1	05/18/2017	11:09:21 AM
90	N024191-003B	SAMP	1	05/18/2017	11:14:12 AM
91	N024191-004B	SAMP	1	05/18/2017	11:19:03 AM
92	N024191-005B	SAMP	1	05/18/2017	11:23:54 AM
93	N024191-006B	SAMP	1	05/18/2017	11:28:46 AM
94	N024191-007B	SAMP	1	05/18/2017	11:33:38 AM
95	N024191-008B	SAMP	1	05/18/2017	11:38:30 AM
8	CCV6	CCV	1	05/18/2017	11:43:22 AM
36	CCB6	CCB	1	05/18/2017	11:49:12 AM
96	N024191-009B	SAMP	1	05/18/2017	11:53:33 AM
97	N024191-010B	SAMP	1	05/18/2017	11:58:25 AM
14	N024191-011B	SAMP	1	05/18/2017	12:03:17 PM
15	N024191-012B	SAMP	1	05/18/2017	12:08:06 PM
16	N024191-013B	SAMP	1	05/18/2017	12:12:56 PM
17	N024191-014B	SAMP	1	05/18/2017	12:17:45 PM
8	CCV7	CCV	1	05/18/2017	12:22:34 PM
36	CCB7	CCB	1	05/18/2017	12:28:25 PM
2	LLCCV2	CCV2	1	05/18/2017	12:32:46 PM
4	ICSA3	ICSA	1	05/18/2017	12:37:35 PM
5	ICSAB3	ICSAB	1	05/18/2017	12:43:36 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/15/2017 1:00:00 P**
Prep End Date: **5/15/2017 5:00:00 P**
Prep Batch **62241** Prep Code: **3010_W**

Reviewed/ Date: _____
Initials/ Date: _____ 5/24/2017
Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62241	Aqueous		25	☐	0	0	25	1.000		
MB-62241	Aqueous		25	☐	0	0	25	1.000		
N024184-001C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-001C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-010C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8994	HYDROCHLORIC ACID
9001	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-170430B	ICP Solution B	LCS,MS,MSD	0.5
MWST-170430J	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/15/2017 1:00:00 P**
Prep End Date: **5/15/2017 5:00:00 P**
Prep Batch **62241** Prep Code: **3010_W**

Reviewed/ Date: _____
Initials/ Date: _____ 5/24/2017
Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024184-011C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-013C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8994	HYDROCHLORIC ACID
9001	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-170430B	ICP Solution B	LCS,MS,MSD	0.5
MWST-170430J	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170518A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/18/2017	04:19:29 AM	Fe	273.953	206	0.00	mg/L	
Standard1	05/18/2017	04:23:47 AM	Fe	273.953	564	0.0200	mg/L	
Standard2	05/18/2017	04:28:36 AM	Fe	273.953	1875	0.050	mg/L	
Standard3	05/18/2017	04:33:27 AM	Fe	273.953	53835	2.000	mg/L	
Standard4	05/18/2017	04:38:16 AM	Fe	273.953	136480	5.000	mg/L	
Standard5	05/18/2017	04:43:05 AM	Fe	273.953	203957	7.500	mg/L	
Standard6	05/18/2017	04:47:54 AM	Fe	273.953	263460	10.000	mg/L	
Standard7	05/18/2017	04:52:18 AM	Fe	273.953	519335	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10083.544	20	10000	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ZZZZZZ**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.958	20	20.00	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10250.182	20	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10221.861	20	10000	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9401.142	20	10000	0	94.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10376.682	20	10000	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ZZZZZZ**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.776	20	20.00	0	98.9	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.160481	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.347	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.912	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.564682	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.339913	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSA**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502572.383	50	500000	0	101	80	120				
Calcium	505404.031	500	500000	0	101	80	120				
Iron	168794.925	20	200000	0	84.4	80	120				
Magnesium	473295.313	100	500000	0	94.7	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSAB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556855.710	50	500000	0	111	80	120				
Calcium	557992.606	500	500000	0	112	80	120				
Iron	182196.372	20	200000	0	91.1	80	120				
Magnesium	517899.110	100	500000	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSA**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511005.246	50	500000	0	102	80	120				
Calcium	518561.220	500	500000	0	104	80	120				
Iron	168055.784	20	200000	0	84.0	80	120				
Magnesium	474556.902	100	500000	0	94.9	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSAB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	567269.667	50	500000	0	113	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSAB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	573041.929	500	500000	0	115	80	120				
Iron	183240.534	20	200000	0	91.6	80	120				
Magnesium	523415.003	100	500000	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.011	101.08	65-125	PASS
Standard2	ICAL	1	1.029	102.94	65-125	PASS
Standard3	ICAL	1	1.0085	100.85	65-125	PASS
Standard4	ICAL	1	0.99	98.76	65-125	PASS
Standard5	ICAL	1	1.007	100.7	65-125	PASS
Standard6	ICAL	1	1.0001	100.01	65-125	PASS
Standard7	ICAL	1	1.0061	100.61	65-125	PASS
ICV	ICV	1	1.0078	100.78	65-125	PASS
ICB	ICB	1	1.043	104.26	65-125	PASS
LLICV	CCV1	1	1.058	105.75	65-125	PASS
ICSA1	ICSA	1	0.95	95.06	65-125	PASS
ICSAB1	ICSAB	1	0.87	86.85	65-125	PASS
MB-62241	MBLK	1	1.059	105.92	65-125	PASS
LCS-62241	LCS	1	0.95	94.99	65-125	PASS
N024184-001C	SAMP	1	1.022	102.25	65-125	PASS
N024184-001C	SAMP	5	1.042	104.21	65-125	PASS
N024184-001C-PS	PS	1	1.022	102.22	65-125	PASS
N024184-001C-MS	MS	1	1.039	103.88	65-125	PASS
N024184-001C-MSD	MSD	1	1.033	103.34	65-125	PASS
N024184-002C	SAMP	1	1.036	103.57	65-125	PASS
N024184-003C	SAMP	1	1.037	103.68	65-125	PASS
N024184-004C	SAMP	1	1.044	104.39	65-125	PASS
CCV1	CCV	1	1.051	105.09	65-125	PASS
CCB1	CCB	1	0.73	72.81	65-125	PASS
CCB1	CCB	1	1.059	105.91	65-125	PASS
N024184-005C	SAMP	1	1.065	106.5	65-125	PASS
N024184-006C	SAMP	1	1.066	106.63	65-125	PASS
N024184-007C	SAMP	1	1.073	107.26	65-125	PASS
N024184-008C	SAMP	1	1.046	104.57	65-125	PASS
N024184-009C	SAMP	1	1.057	105.7	65-125	PASS
N024184-010C	SAMP	1	1.085	108.45	65-125	PASS
N024184-011C	SAMP	1	1.09	109.02	65-125	PASS
N024184-012C	SAMP	1	1.052	105.16	65-125	PASS
N024184-013C	SAMP	1	1.078	107.79	65-125	PASS
CCV2	CCV	1	1.09	108.98	65-125	PASS
CCB2	CCB	1	1.095	109.54	65-125	PASS
CCV3	CCV	1	1.021	102.11	65-125	PASS
CCV3	CCV	1	1.016	101.64	65-125	PASS
CCB3	CCB	1	1.041	104.1	65-125	PASS
N024184-001C-MS	MS	1	1.038	103.81	65-125	PASS

INTERNAL STANDARD: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N024184-001C-MSD	MSD	1	1.022	102.25	65-125	PASS
CCV4	CCV	1	1.067	106.72	65-125	PASS
CCV4	CCV	1	1.037	103.71	65-125	PASS
CCB4	CCB	1	1.075	107.46	65-125	PASS
LLCCV1	CCV2	1	1.11	110.89	65-125	PASS
ICSA2	ICSA	1	1	99.61	65-125	PASS
ICSAB2	ICSAB	1	0.91	90.98	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N024184
Test Method: EPA 6010B
Analysis Date: 5/18/2017

Matrix: Groundwater
Batch No.: 62241

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024184-001C DT 5X	Iron	ug/L	35.11253	NA	52.84912	33.56%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N024184-001C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID:	**ZZZZZZ**	Batch ID: **62241**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2648690**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	142.483	20	100.0	52.85	89.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62184
ASSET #: N024184
Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/13/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?		X				
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.		X				
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of As in STD1, LLCCV2 & Se in LLCCV1 failed > 15% & 20%. However %RSD of LLICV & %Rec of LLCCV's passed criteria.
Ba in N024160-013B PS/MS/MSD is over linear range. For dilution.
%RSD of Se in N024184-003B, 004B, 005B, 006B, 008B, 009B, 010B, 011B & 014B failed > 15%. For rerun.
%Rec of Se in CCV8 failed, bias low. However samples are closed by CCV7.
%Rec of Se in N024160-013B PS failed. However LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/24/2017 Date:

2nd Level Reviewer 5/24/2017 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62184
ASSET #: N024184

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/15/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

For dilution of Ba in N024160-013B PS/MS/MSD only.
For Se in N024184-003B, 004B, 005B, 006B, 008B, 009B, 010B, 011B & 014B rerun only.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/24/2017 Date: —

2nd Level Reviewer 5/24/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N024184-001B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.07958 * 1 * (25/25)

Arsenic , ug/L = 2.07958

Reporting results in two significant figures,

Arsenic , ug/L = 2.1

% RSD SUMMARY

PERCENT RSD SUMMARY: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.082	10.33	15	PASS	0.093	7.14	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.45	3.62	15	PASS	0.5	6.26	15	PASS
Std3-5/50 ppb	ICAL	1	4.8	1.51	15	PASS	5.025	0.77	15	PASS
Std4-10/100 ppb	ICAL	1	9.47	1.4	15	PASS	10.2	2.63	15	PASS
Std5-20/200 ppb	ICAL	1	18.98	1.81	15	PASS	20.62	2.15	15	PASS
Std6-40/400 ppb	ICAL	1	37.77	0.79	15	PASS	40.4	1.34	15	PASS
Std7-100/1000 ppb	ICAL	1	93.47	0.51	15	PASS	101.38	1.6	15	PASS
Std8-200/2000 ppb	ICAL	1	203.84	0.26	15	PASS	199.16	0.42	15	PASS
ICV	ICV	1	101.85	0.72	15	PASS	10.57	2.57	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.99	2.72	20	PASS	0.99	3.19	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.041	52.17	15	<PQL
ICSAB1	ICSAB	1	21.73	0.85	15	PASS	19.0087	0.78	15	PASS
LLICV	CCV1	1	1.013	1.43	20	PASS	1.034	0.99	20	PASS
CCV1	CCV	1	19.11	0.14	15	PASS	20.15	0.98	15	PASS
CCB1	CCB	1	0.0029	70.66	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	19.019	0.83	15	PASS	20.33	1.3	15	PASS
CCB2	CCB	1	0.0024	101.061	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.023	2.59	20	PASS	0.98	2.79	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.03	13.19	15	PASS
ICSAB2	ICSAB	1	21.22	1.31	15	PASS	18.63	1.93	15	PASS
CCV3	CCV	1	19.51	1.38	15	PASS	19.68	0.95	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.81	1.024	15	PASS	19.52	1.0092	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-62184	MBLK	1	0.04	18.63	15	<PQL	0.0098	35.76	15	<PQL
LCS-62184	LCS	1	96.14	0.37	15	PASS	9.071	2.44	15	PASS
N024160-013B	SAMP	1	118.49	0.88	15	PASS	2.099	0.83	15	PASS
N024160-013B	SAMP	5	25.31	1.35	15	PASS	0.45	4.46	15	PASS
CCV5	CCV	1	19.7	0.26	15	PASS	19.98	0.77	15	PASS
CCB5	CCB	1	0.0021	164.46	15	<PQL	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	1.035	1.23	20	PASS	0.99	4.92	20	PASS
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	0.039	47.019	15	<PQL
ICSAB3	ICSAB	1	22.17	0.36	15	PASS	18.74	1.17	15	PASS
N024160-013B-PS	PS	1	235.58	0.091	15	PASS	10.61	1.27	15	PASS
N024160-013B-MS	MS	1	235.026	1.44	15	PASS	10.83	0.97	15	PASS
N024160-013B-MSD	MSD	1	233.074	0.98	15	PASS	10.67	1.42	15	PASS
N024160-014B	SAMP	1	95.25	0.3	15	PASS	3.38	4.31	15	PASS
N024160-015B	SAMP	1	136.52	0.6	15	PASS	357.48	2.42	15	PASS
N024160-016B	SAMP	1	139.058	0.32	15	PASS	356.7	0.46	15	PASS

PERCENT RSD SUMMARY: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024184-001B	SAMP	1	119.36	0.4	15	PASS	<0.000	N/A	15	<PQL
N024184-002B	SAMP	1	111.37	0.32	15	PASS	0.063	19.63	15	<PQL
N024184-003B	SAMP	1	114.041	0.39	15	PASS	0.0024	453.38	15	<PQL
N024184-004B	SAMP	1	113.35	0.34	15	PASS	0.097	21.68	15	<PQL
CCV6	CCV	1	20.085	0.49	15	PASS	19.72	1.44	15	PASS
CCB6	CCB	1	0.00082	230.69	15	<PQL	<0.000	N/A	15	<PQL
N024184-005B	SAMP	1	109.75	0.44	15	PASS	0.0092	143.12	15	<PQL
N024184-006B	SAMP	1	113.56	0.29	15	PASS	0.021	31.39	15	<PQL
N024184-007B	SAMP	1	111.19	0.77	15	PASS	0.019	55.45	15	<PQL
N024184-008B	SAMP	1	111.16	0.33	15	PASS	<0.000	N/A	15	<PQL
N024184-009B	SAMP	1	111.9	0.21	15	PASS	<0.000	N/A	15	<PQL
N024184-010B	SAMP	1	111.95	0.52	15	PASS	0.0073	218.89	15	<PQL
N024184-011B	SAMP	1	115.54	0.41	15	PASS	0.068	8.15	15	PASS
N024184-012B	SAMP	1	114.63	0.39	15	PASS	0.0063	190.67	15	<PQL
N024184-013B	SAMP	1	116.16	0.27	15	PASS	0.0087	47.63	15	<PQL
N024184-014B	SAMP	1	102.055	0.7	15	PASS	<0.000	N/A	15	<PQL
CCV7	CCV	1	19.97	1.41	15	PASS	19.65	0.9	15	PASS
CCB7	CCB	1	0.0034	72.25	15	<PQL	<0.000	N/A	15	<PQL
N024185-001B	SAMP	1	109.46	1.13	15	PASS	0.073	22.37	15	<PQL
CCV8	CCV	1	19.94	0.64	15	PASS	19.76	1.89	15	PASS
CCB8	CCB	1	0.0058	102.56	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	1.068	3	20	PASS	0.94	4.18	20	PASS
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	0.044	39.72	15	<PQL
ICSAB4	ICSAB	1	22.54	0.73	15	PASS	18.77	1.7	15	PASS

PERCENT RSD SUMMARY: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	5.45	15	PASS	0.11	25.79	15	NR!
Std2-0.5/5 ppb	ICAL	1	0.49	5.3	15	PASS	0.46	12.59	15	PASS
Std3-5/50 ppb	ICAL	1	5.073	3.97	15	PASS	4.95	3.54	15	PASS
Std4-10/100 ppb	ICAL	1	10.14	2.23	15	PASS	10.12	2.39	15	PASS
Std5-20/200 ppb	ICAL	1	20.78	1.027	15	PASS	19.94	0.94	15	PASS
Std6-40/400 ppb	ICAL	1	40.36	1.16	15	PASS	39.73	2.021	15	PASS
Std7-100/1000 ppb	ICAL	1	101.21	1.37	15	PASS	100.11	0.98	15	PASS
Std8-200/2000 ppb	ICAL	1	199.23	0.72	15	PASS	197.65	0.79	15	PASS
ICV	ICV	1	104.63	0.83	15	PASS	10.26	2.17	15	PASS
ICB	ICB	1	0.00014	4639.87	15	<PQL	0.0029	225.49	15	<PQL
LLICV	CCV1	1	0.55	5.74	20	PASS	0.12	6.92	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	22.15	1.28	15	PASS	20.096	2.32	15	PASS
LLICV	CCV1	1	0.56	6.8	20	PASS	0.097	33.23	20	<PQL
CCV1	CCV	1	20.22	2.73	15	PASS	20.087	1.93	15	PASS
CCB1	CCB	1	0.0014	138.34	15	<PQL	0.003	70.11	15	<PQL
CCV2	CCV	1	20.23	1.67	15	PASS	20.19	1.71	15	PASS
CCB2	CCB	1	0.00096	111.26	15	<PQL	0.0065	81.5	15	<PQL
LLCCV1	CCV2	1	0.55	15.8	20	PASS	0.082	30.2	20	<PQL
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	21.84	2.089	15	PASS	20.13	3.095	15	PASS
CCV3	CCV	1	20.41	1.8	15	PASS	19.94	0.95	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.0025	69.15	15	<PQL
CCV4	CCV	1	20.53	2.89	15	PASS	19.96	2.71	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
MB-62184	MBLK	1	0.011	48.16	15	<PQL	0.0024	298.74	15	<PQL
LCS-62184	LCS	1	94.93	0.92	15	PASS	9.16	2.51	15	PASS
N024160-013B	SAMP	1	0.94	11.34	15	PASS	4.02	2.83	15	PASS
N024160-013B	SAMP	5	0.22	11.07	15	PASS	0.82	6.81	15	PASS
CCV5	CCV	1	20.72	1.26	15	PASS	19.36	1.011	15	PASS
CCB5	CCB	1	0.0095	30.96	15	<PQL	0.004	292.005	15	<PQL
LLCCV2	CCV2	1	0.57	7.75	20	PASS	0.11	35.66	20	NR!
ICSA3	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB3	ICSAB	1	22.62	1.17	15	PASS	19.93	0.94	15	PASS
N024160-013B-PS	PS	1	87.85	0.18	15	PASS	12.68	0.69	15	PASS
N024160-013B-MS	MS	1	92.98	2.43	15	PASS	12.74	1.6	15	PASS
N024160-013B-MSD	MSD	1	91.91	0.83	15	PASS	12.82	0.79	15	PASS
N024160-014B	SAMP	1	<0.000	N/A	15	<PQL	1.66	4.13	15	PASS
N024160-015B	SAMP	1	11.31	2.085	15	PASS	0.87	8.94	15	PASS
N024160-016B	SAMP	1	11.79	0.26	15	PASS	0.8	11.5	15	PASS

PERCENT RSD SUMMARY: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024184-001B	SAMP	1	<0.000	N/A	15	<PQL	2.08	8.76	15	PASS
N024184-002B	SAMP	1	<0.000	N/A	15	<PQL	1.93	2.64	15	PASS
N024184-003B	SAMP	1	<0.000	N/A	15	<PQL	2.07	1.23	15	PASS
N024184-004B	SAMP	1	<0.000	N/A	15	<PQL	2.023	4.24	15	PASS
CCV6	CCV	1	20.58	2.009	15	PASS	19.84	1.019	15	PASS
CCB6	CCB	1	0.00015	4855.52	15	<PQL	<0.000	N/A	15	<PQL
N024184-005B	SAMP	1	<0.000	N/A	15	<PQL	1.9	1.76	15	PASS
N024184-006B	SAMP	1	<0.000	N/A	15	<PQL	2.028	5.85	15	PASS
N024184-007B	SAMP	1	<0.000	N/A	15	<PQL	2.024	7.78	15	PASS
N024184-008B	SAMP	1	<0.000	N/A	15	<PQL	1.93	1.99	15	PASS
N024184-009B	SAMP	1	<0.000	N/A	15	<PQL	2.13	2.73	15	PASS
N024184-010B	SAMP	1	<0.000	N/A	15	<PQL	1.96	1.34	15	PASS
N024184-011B	SAMP	1	<0.000	N/A	15	<PQL	2.073	4.45	15	PASS
N024184-012B	SAMP	1	<0.000	N/A	15	<PQL	2.063	1.99	15	PASS
N024184-013B	SAMP	1	<0.000	N/A	15	<PQL	2.14	5.54	15	PASS
N024184-014B	SAMP	1	20.72	3.53	15	PASS	1.73	2.99	15	PASS
CCV7	CCV	1	20.26	0.9	15	PASS	20.2	1.17	15	PASS
CCB7	CCB	1	0.000016	37902.061	15	<PQL	0.0026	239.33	15	<PQL
N024185-001B	SAMP	1	8	2.23	15	PASS	1.76	4.67	15	PASS
CCV8	CCV	1	20.19	1.25	15	PASS	19.54	0.25	15	PASS
CCB8	CCB	1	0.00037	2110.056	15	<PQL	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	0.54	5.94	20	PASS	0.093	36.56	20	<PQL
ICSA4	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB4	ICSAB	1	22.82	1.91	15	PASS	19.91	1.18	15	PASS

PERCENT RSD SUMMARY: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	34.81	15	<PQL	0.1	14.44	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.48	16.26	15	<PQL	0.42	1.82	15	PASS
Std3-5/50 ppb	ICAL	1	4.97	2.98	15	PASS	4.53	0.79	15	PASS
Std4-10/100 ppb	ICAL	1	9.78	3.91	15	PASS	9.067	0.32	15	PASS
Std5-20/200 ppb	ICAL	1	20.09	4.39	15	PASS	18.33	1.23	15	PASS
Std6-40/400 ppb	ICAL	1	39.096	2.39	15	PASS	38.86	4.57	15	PASS
Std7-100/1000 ppb	ICAL	1	100.37	1.55	15	PASS	97.62	5.043	15	PASS
Std8-200/2000 ppb	ICAL	1	199.91	1.81	15	PASS	201.65	0.15	15	PASS
ICV	ICV	1	9.77	3.84	15	PASS	9.47	1.4	15	PASS
ICB	ICB	1	0	N/A	15	<PQL	0.059	3.76	15	PASS
LLICV	CCV1	1	0.56	19.92	20	PASS	0.54	3.78	20	PASS
ICSA1	ICSA	1	0.029	44.66	15	<PQL	0.079	7.71	15	PASS
ICSAB1	ICSAB	1	19.25	3.93	15	PASS	21.05	1.68	15	PASS
LLICV	CCV1	1	0.38	35.4	20	<PQL	0.49	5.4	20	PASS
CCV1	CCV	1	19.61	3.99	15	PASS	19.14	4.85	15	PASS
CCB1	CCB	1	0.0071	173.21	15	<PQL	0.046	5.95	15	PASS
CCV2	CCV	1	20.44	2.13	15	PASS	19.76	0.77	15	PASS
CCB2	CCB	1	0.03	173.21	15	<PQL	0.076	15.96	15	<PQL
LLCCV1	CCV2	1	0.5	26.59	20	NR!	0.5	5.55	20	PASS
ICSA2	ICSA	1	0	N/A	15	<PQL	0.04	34.7	15	<PQL
ICSAB2	ICSAB	1	17.39	4.77	15	PASS	22.26	1.28	15	PASS
CCV3	CCV	1	18.97	6.88	15	PASS	18.51	1.31	15	PASS
CCB3	CCB	1	0	N/A	15	<PQL	0.096	14.94	15	PASS
CCV4	CCV	1	18.64	5.76	15	PASS	19.26	3.83	15	PASS
CCB4	CCB	1	0.013	86.62	15	<PQL	0.092	13.84	15	PASS
MB-62184	MBLK	1	0.0064	173.21	15	<PQL	0.018	17.42	15	<PQL
LCS-62184	LCS	1	8.63	7.45	15	PASS	8.63	0.55	15	PASS
N024160-013B	SAMP	1	0.085	62.14	15	<PQL	4.4	1.052	15	PASS
N024160-013B	SAMP	5	0.052	56.62	15	<PQL	0.93	5.0056	15	PASS
CCV5	CCV	1	20.049	1.46	15	PASS	19.62	1.7	15	PASS
CCB5	CCB	1	0	N/A	15	<PQL	0.092	15.51	15	<PQL
LLCCV2	CCV2	1	0.41	19.0083	20	PASS	0.52	5.42	20	PASS
ICSA3	ICSA	1	0.015	173.21	15	<PQL	0.036	7.21	15	PASS
ICSAB3	ICSAB	1	17.23	2.17	15	PASS	22.18	1.2	15	PASS
N024160-013B-PS	PS	1	8.02	8.44	15	PASS	14.55	1.065	15	PASS
N024160-013B-MS	MS	1	8.086	1.65	15	PASS	14.78	0.45	15	PASS
N024160-013B-MSD	MSD	1	8.0084	6.27	15	PASS	14.71	1.25	15	PASS
N024160-014B	SAMP	1	0.93	1.29	15	PASS	4.11	1.12	15	PASS
N024160-015B	SAMP	1	0.019	0.23	15	PASS	14.061	1.083	15	PASS
N024160-016B	SAMP	1	0.035	100.8	15	<PQL	14.49	1.24	15	PASS

PERCENT RSD SUMMARY: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024184-001B	SAMP	1	1.6	5	15	PASS	5.11	0.36	15	PASS
N024184-002B	SAMP	1	1.36	7.82	15	PASS	4.88	4.037	15	PASS
N024184-003B	SAMP	1	1.48	15.83	15	NR!	4.92	2.93	15	PASS
N024184-004B	SAMP	1	1.4	15.15	15	NR!	4.94	2.93	15	PASS
CCV6	CCV	1	18.25	1.14	15	PASS	20.11	0.26	15	PASS
CCB6	CCB	1	0.0064	173.21	15	<PQL	0.081	6.19	15	PASS
N024184-005B	SAMP	1	1.29	19.37	15	NR!	4.81	1.69	15	PASS
N024184-006B	SAMP	1	1.41	16.6	15	NR!	5.042	0.16	15	PASS
N024184-007B	SAMP	1	1.36	3.28	15	PASS	4.88	0.63	15	PASS
N024184-008B	SAMP	1	1.41	20.29	15	NR!	4.86	2.36	15	PASS
N024184-009B	SAMP	1	1.53	15.68	15	NR!	4.91	1.56	15	PASS
N024184-010B	SAMP	1	1.44	23.43	15	NR!	4.9	1.26	15	PASS
N024184-011B	SAMP	1	1.47	20.67	15	NR!	5.012	2.31	15	PASS
N024184-012B	SAMP	1	1.68	4.91	15	PASS	4.96	0.68	15	PASS
N024184-013B	SAMP	1	1.27	7.41	15	PASS	5.052	2.29	15	PASS
N024184-014B	SAMP	1	0.85	30.61	15	NR!	3.89	2.16	15	PASS
CCV7	CCV	1	18.18	3.2	15	PASS	20.16	1.31	15	PASS
CCB7	CCB	1	0.014	86.6	15	<PQL	0.078	3.82	15	PASS
N024185-001B	SAMP	1	1.0018	15.086	15	NR!	5.096	1.38	15	PASS
CCV8	CCV	1	17.84	2.55	15	PASS	19.67	1.66	15	PASS
CCB8	CCB	1	0.007	173.21	15	<PQL	0.035	18.4	15	<PQL
LLCCV3	CCV2	1	0.64	12.91	20	PASS	0.49	3.83	20	PASS
ICSA4	ICSA	1	0.0076	173.21	15	<PQL	0.031	34.16	15	<PQL
ICSAB4	ICSAB	1	17.35	2.87	15	PASS	22.43	0.52	15	PASS

PERCENT RSD SUMMARY: 170515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.09	3.11	15	PASS	0.1	40.39	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.46	4.53	15	PASS	0.5	19.45	15	<PQL
Std3-5/50 ppb	ICAL	1	4.69	1.43	15	PASS	5.04	4.59	15	PASS
Std4-10/100 ppb	ICAL	1	9.45	0.72	15	PASS	9.97	2.21	15	PASS
Std5-20/200 ppb	ICAL	1	18.82	0.64	15	PASS	20.12	2.92	15	PASS
Std6-40/400 ppb	ICAL	1	37.59	1.072	15	PASS	39.035	1.74	15	PASS
Std7-100/1000 ppb	ICAL	1	92.56	0.44	15	PASS	99.4	0.55	15	PASS
Std8-200/2000 ppb	ICAL	1	204.36	1.23	15	PASS	200.48	1.47	15	PASS
ICV	ICV	1	94.47	0.61	15	PASS	9.99	10.93	15	PASS
ICB	ICB	1	0.0014	267.79	15	<PQL	0.014	57.76	15	<PQL
LLICV	CCV1	1	1.0022	1.69	20	PASS	0.48	23.45	20	<PQL
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.014	151.12	15	<PQL
ICSAB1	ICSAB	1	18.63	1.23	15	PASS	18.54	4.36	15	PASS
LLICV	CCV1	1	1.028	0.43	20	PASS	0.53	15.75	20	PASS
CCV1	CCV	1	19.055	1.22	15	PASS	20.77	1.042	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.0098	0.63	15	PASS
N024160-013B	SAMP	5	24.34	0.73	15	PASS	0.041	36.82	15	<PQL
N024160-013B	SAMP	25	4.91	0.63	15	PASS	<0.000	N/A	15	<PQL
N024160-013B-PS	PS	5	43.83	0.58	15	PASS	2.048	4.12	15	PASS
N024160-013B-MS	MS	5	43.71	0.8	15	PASS	1.95	18.47	15	NR!
N024160-013B-MSD	MSD	5	43.67	1.07	15	PASS	1.92	12.6	15	PASS
N024160-015B	SAMP	5	26.92	0.19	15	PASS	0.011	140.48	15	<PQL
CCV2	CCV	1	19.14	0.95	15	PASS	19.075	3.77	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL	0.01	144.1	15	<PQL
N024160-016B	SAMP	5	28.43	0.75	15	PASS	0.021	42.13	15	<PQL
N024184-003B	SAMP	1	108.61	0.71	15	PASS	1.32	1.37	15	PASS
N024184-004B	SAMP	1	108.5	0.6	15	PASS	1.5	19.99	15	NR!
N024184-005B	SAMP	1	107.25	0.79	15	PASS	1.43	13.51	15	PASS
N024184-006B	SAMP	1	112.11	0.96	15	PASS	1.67	13.48	15	PASS
N024184-008B	SAMP	1	108.77	0.24	15	PASS	1.21	11.059	15	PASS
N024184-009B	SAMP	1	108.2	0.75	15	PASS	1.56	9.27	15	PASS
N024184-010B	SAMP	1	108.46	0.86	15	PASS	1.48	7.36	15	PASS
N024184-011B	SAMP	1	112.81	0.5	15	PASS	1.72	14.01	15	PASS
N024184-014B	SAMP	1	99.38	0.22	15	PASS	0.76	5.29	15	PASS
CCV3	CCV	1	19.78	0.65	15	PASS	20.32	0.45	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL	0.014	56.12	15	<PQL
N024184-004B	SAMP	1	112.02	0.29	15	PASS	1.49	8.54	15	PASS
CCV4	CCV	1	19.49	0.53	15	PASS	19.63	2.98	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL	0.015	148.86	15	<PQL
LLCCV1	CCV2	1	1.045	1.049	20	PASS	0.48	5.72	20	PASS

PERCENT RSD SUMMARY: 170515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.0099	146.56	15	<PQL
ICSAB2	ICSAB	1	19.99	1.26	15	PASS	17.87	5.12	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170513A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0513001.D	RINSE	RINSE	1	05/13/17 8:03 AM
A0513002.D	Cal Blank	IBLK	1	05/13/17 8:09 AM
A0513003.D	Std1-0.1/1 ppb	ICAL	1	05/13/17 8:15 AM
A0513004.D	Std2-0.5/5 ppb	ICAL	1	05/13/17 8:20 AM
A0513005.D	Std3-5/50 ppb	ICAL	1	05/13/17 8:26 AM
A0513006.D	Std4-10/100 ppb	ICAL	1	05/13/17 8:31 AM
A0513007.D	Std5-20/200 ppb	ICAL	1	05/13/17 8:37 AM
A0513008.D	Std6-40/400 ppb	ICAL	1	05/13/17 8:42 AM
A0513009.D	Std7-100/1000 ppb	ICAL	1	05/13/17 8:48 AM
A0513010.D	Std8-200/2000 ppb	ICAL	1	05/13/17 8:54 AM
A0513011.D	ICV	ICV	1	05/13/17 9:00 AM
A0513012.D	ICB	ICB	1	05/13/17 9:05 AM
A0513013.D	LLICV	CCV1	1	05/13/17 9:10 AM
A0513014.D	ICSA1	ICSA	1	05/13/17 9:16 AM
A0513015.D	ICSAB1	ICSAB	1	05/13/17 9:21 AM
A0513016.D	LLICV	CCV1	1	05/13/17 9:27 AM
A0513017.D	MB-62179	MBLK	1	05/13/17 9:33 AM
A0513018.D	LCS-62179	LCS	1	05/13/17 9:39 AM
A0513019.D	N024096-001A	SAMP	1	05/13/17 9:45 AM
A0513020.D	N024096-001A	SAMP	5	05/13/17 9:50 AM
A0513021.D	N024096-001A-PS	PS	1	05/13/17 9:56 AM
A0513022.D	N024096-001A-MS	MS	1	05/13/17 10:02 AM
A0513023.D	N024096-001A-MSD	MSD	1	05/13/17 10:07 AM
A0513024.D	N024096-002A	SAMP	1	05/13/17 10:13 AM
A0513025.D	N024164-001A	SAMP	1	05/13/17 10:18 AM
A0513026.D	N024164-002A	SAMP	1	05/13/17 10:24 AM
A0513027.D	CCV1	CCV	1	05/13/17 10:30 AM
A0513028.D	CCB1	CCB	1	05/13/17 10:37 AM
A0513029.D	N024132-010A	SAMP	1	05/13/17 10:43 AM
A0513030.D	N024129-001A	SAMP	25	05/13/17 10:48 AM
A0513031.D	N024129-002A	SAMP	250	05/13/17 10:54 AM
A0513032.D	N024129-003A	SAMP	10	05/13/17 10:59 AM
A0513033.D	N024130-003A	SAMP	25	05/13/17 11:05 AM
A0513034.D	CCV2	CCV	1	05/13/17 11:11 AM
A0513035.D	CCB2	CCB	1	05/13/17 11:16 AM
A0513036.D	LLCCV1	CCV2	1	05/13/17 11:22 AM
A0513037.D	ICSA2	ICSA	1	05/13/17 11:27 AM
A0513038.D	ICSAB2	ICSAB	1	05/13/17 11:33 AM
A0513039.D	MB-62183	MBLK	1	05/13/17 11:54 AM
A0513040.D	LCS-62183	LCS	1	05/13/17 11:59 AM
A0513041.D	N024136-001B	SAMP	1	05/13/17 12:05 PM
A0513042.D	N024136-001B	SAMP	5	05/13/17 12:11 PM

INJECTION LOG: 170513A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0513043.D	N024136-001B-PS	PS	1	05/13/17 12:16 PM
A0513044.D	N024136-001B-MS	MS	1	05/13/17 12:22 PM
A0513045.D	N024136-001B-MSD	MSD	1	05/13/17 12:27 PM
A0513046.D	N024136-002B	SAMP	1	05/13/17 12:33 PM
A0513047.D	N024136-003B	SAMP	1	05/13/17 12:38 PM
A0513048.D	N024136-004B	SAMP	1	05/13/17 12:44 PM
A0513049.D	CCV3	CCV	1	05/13/17 12:49 PM
A0513050.D	CCB3	CCB	1	05/13/17 12:55 PM
A0513051.D	N024136-005B	SAMP	1	05/13/17 1:01 PM
A0513052.D	N024136-006B	SAMP	1	05/13/17 1:06 PM
A0513053.D	N024136-007B	SAMP	1	05/13/17 1:12 PM
A0513054.D	N024136-008B	SAMP	1	05/13/17 1:17 PM
A0513055.D	N024160-001B	SAMP	1	05/13/17 1:23 PM
A0513056.D	N024160-002B	SAMP	1	05/13/17 1:28 PM
A0513057.D	N024160-003B	SAMP	1	05/13/17 1:34 PM
A0513058.D	N024160-004B	SAMP	1	05/13/17 1:39 PM
A0513059.D	N024160-005B	SAMP	1	05/13/17 1:45 PM
A0513060.D	N024160-006B	SAMP	1	05/13/17 1:50 PM
A0513061.D	CCV4	CCV	1	05/13/17 1:56 PM
A0513062.D	CCB4	CCB	1	05/13/17 2:02 PM
A0513063.D	N024160-007B	SAMP	1	05/13/17 2:07 PM
A0513064.D	N024160-008B	SAMP	1	05/13/17 2:13 PM
A0513065.D	N024160-009B	SAMP	1	05/13/17 2:18 PM
A0513066.D	N024160-010B	SAMP	1	05/13/17 2:24 PM
A0513067.D	N024160-011B	SAMP	1	05/13/17 2:29 PM
A0513068.D	N024160-012B	SAMP	1	05/13/17 2:35 PM
A0513069.D	MB-62184	MBLK	1	05/13/17 2:41 PM
A0513070.D	LCS-62184	LCS	1	05/13/17 2:46 PM
A0513071.D	N024160-013B	SAMP	1	05/13/17 2:52 PM
A0513072.D	N024160-013B	SAMP	5	05/13/17 2:57 PM
A0513073.D	CCV5	CCV	1	05/13/17 3:03 PM
A0513074.D	CCB5	CCB	1	05/13/17 3:09 PM
A0513075.D	LLCCV2	CCV2	1	05/13/17 3:14 PM
A0513076.D	ICSA3	ICSA	1	05/13/17 3:20 PM
A0513077.D	ICSAB3	ICSAB	1	05/13/17 3:25 PM
A0513078.D	N024160-013B-PS	PS	1	05/13/17 3:31 PM
A0513079.D	N024160-013B-MS	MS	1	05/13/17 3:36 PM
A0513080.D	N024160-013B-MSD	MSD	1	05/13/17 3:42 PM
A0513081.D	N024160-014B	SAMP	1	05/13/17 3:47 PM
A0513082.D	N024160-015B	SAMP	1	05/13/17 3:53 PM
A0513083.D	N024160-016B	SAMP	1	05/13/17 3:59 PM
A0513084.D	N024184-001B	SAMP	1	05/13/17 4:04 PM

INJECTION LOG: 170513A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0513085.D	N024184-002B	SAMP	1	05/13/17 4:10 PM
A0513086.D	N024184-003B	SAMP	1	05/13/17 4:15 PM
A0513087.D	N024184-004B	SAMP	1	05/13/17 4:21 PM
A0513088.D	CCV6	CCV	1	05/13/17 4:27 PM
A0513089.D	CCB6	CCB	1	05/13/17 4:32 PM
A0513090.D	N024184-005B	SAMP	1	05/13/17 4:38 PM
A0513091.D	N024184-006B	SAMP	1	05/13/17 4:43 PM
A0513092.D	N024184-007B	SAMP	1	05/13/17 4:49 PM
A0513093.D	N024184-008B	SAMP	1	05/13/17 4:54 PM
A0513094.D	N024184-009B	SAMP	1	05/13/17 5:00 PM
A0513095.D	N024184-010B	SAMP	1	05/13/17 5:06 PM
A0513096.D	N024184-011B	SAMP	1	05/13/17 5:11 PM
A0513097.D	N024184-012B	SAMP	1	05/13/17 5:17 PM
A0513098.D	N024184-013B	SAMP	1	05/13/17 5:22 PM
A0513099.D	N024184-014B	SAMP	1	05/13/17 5:28 PM
A0513100.D	CCV7	CCV	1	05/13/17 5:34 PM
A0513101.D	CCB7	CCB	1	05/13/17 5:39 PM
A0513102.D	N024185-001B	SAMP	1	05/13/17 5:44 PM
A0513103.D	CCV8	CCV	1	05/13/17 5:50 PM
A0513104.D	CCB8	CCB	1	05/13/17 5:56 PM
A0513105.D	LLCCV3	CCV2	1	05/13/17 6:01 PM
A0513106.D	ICSA4	ICSA	1	05/13/17 6:07 PM
A0513107.D	ICSAB4	ICSAB	1	05/13/17 6:12 PM

INJECTION LOG: 170515A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0515001.D	RINSE	RINSE	1	05/15/17 3:08 PM
A0515002.D	Cal Blank	IBLK	1	05/15/17 3:14 PM
A0515003.D	Std1-0.1/1 ppb	ICAL	1	05/15/17 3:19 PM
A0515004.D	Std2-0.5/5 ppb	ICAL	1	05/15/17 3:25 PM
A0515005.D	Std3-5/50 ppb	ICAL	1	05/15/17 3:31 PM
A0515006.D	Std4-10/100 ppb	ICAL	1	05/15/17 3:36 PM
A0515007.D	Std5-20/200 ppb	ICAL	1	05/15/17 3:42 PM
A0515008.D	Std6-40/400 ppb	ICAL	1	05/15/17 3:48 PM
A0515009.D	Std7-100/1000 ppb	ICAL	1	05/15/17 3:53 PM
A0515010.D	Std8-200/2000 ppb	ICAL	1	05/15/17 3:59 PM
A0515011.D	ICV	ICV	1	05/15/17 4:04 PM
A0515012.D	ICB	ICB	1	05/15/17 4:10 PM
A0515013.D	LLICV	CCV1	1	05/15/17 4:15 PM
A0515014.D	ICSA1	ICSA	1	05/15/17 4:21 PM
A0515015.D	ICSAB1	ICSAB	1	05/15/17 4:27 PM
A0515016.D	LLICV	CCV1	1	05/15/17 4:32 PM
A0515017.D	N024075-002E	SAMP	1	05/15/17 4:38 PM
A0515018.D	N024075-002E	SAMP	1	05/15/17 4:43 PM
A0515019.D	N024136-003B	SAMP	5	05/15/17 4:50 PM
A0515020.D	N024136-004B	SAMP	10	05/15/17 4:55 PM
A0515021.D	N024136-005B	SAMP	10	05/15/17 5:01 PM
A0515022.D	N024136-008B	SAMP	5	05/15/17 5:06 PM
A0515023.D	N024160-001B	SAMP	5	05/15/17 5:12 PM
A0515024.D	N024160-002B	SAMP	5	05/15/17 5:18 PM
A0515025.D	N024160-003B	SAMP	5	05/15/17 5:23 PM
A0515026.D	N024160-005B	SAMP	5	05/15/17 5:29 PM
A0515027.D	CCV1	CCV	1	05/15/17 5:34 PM
A0515028.D	CCB1	CCB	1	05/15/17 5:40 PM
A0515029.D	N024160-006B	SAMP	5	05/15/17 5:46 PM
A0515030.D	N024160-007B	SAMP	5	05/15/17 5:51 PM
A0515031.D	N024160-008B	SAMP	10	05/15/17 5:57 PM
A0515032.D	N024160-009B	SAMP	10	05/15/17 6:02 PM
A0515033.D	N024160-013B	SAMP	5	05/15/17 6:08 PM
A0515034.D	N024160-013B	SAMP	25	05/15/17 6:14 PM
A0515035.D	N024160-013B-PS	PS	5	05/15/17 6:19 PM
A0515036.D	N024160-013B-MS	MS	5	05/15/17 6:25 PM
A0515037.D	N024160-013B-MSD	MSD	5	05/15/17 6:30 PM
A0515038.D	N024160-015B	SAMP	5	05/15/17 6:36 PM
A0515039.D	CCV2	CCV	1	05/15/17 6:42 PM
A0515040.D	CCB2	CCB	1	05/15/17 6:47 PM
A0515041.D	N024160-016B	SAMP	5	05/15/17 6:53 PM
A0515042.D	N024184-003B	SAMP	1	05/15/17 6:58 PM

INJECTION LOG: 170515A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0515043.D	N024184-004B	SAMP	1	05/15/17 7:04 PM
A0515044.D	N024184-005B	SAMP	1	05/15/17 7:09 PM
A0515045.D	N024184-006B	SAMP	1	05/15/17 7:15 PM
A0515046.D	N024184-008B	SAMP	1	05/15/17 7:21 PM
A0515047.D	N024184-009B	SAMP	1	05/15/17 7:26 PM
A0515048.D	N024184-010B	SAMP	1	05/15/17 7:32 PM
A0515049.D	N024184-011B	SAMP	1	05/15/17 7:38 PM
A0515050.D	N024184-014B	SAMP	1	05/15/17 7:43 PM
A0515051.D	CCV3	CCV	1	05/15/17 7:49 PM
A0515052.D	CCB3	CCB	1	05/15/17 7:54 PM
A0515053.D	N024184-004B	SAMP	1	05/15/17 7:59 PM
A0515054.D	CCV4	CCV	1	05/15/17 8:05 PM
A0515055.D	CCB4	CCB	1	05/15/17 8:11 PM
A0515056.D	LLCCV1	CCV2	1	05/15/17 8:17 PM
A0515057.D	ICSA2	ICSA	1	05/15/17 8:22 PM
A0515058.D	ICSAB2	ICSAB	1	05/15/17 8:28 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2017 7:33:32 A**
Prep End Date: **5/11/2017 12:00:00**
Prep Batch **62184** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/22/2017
Initials/ Date: 5/22/2017
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-33**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62184	Aqueous		25	☐	0	0	25	1.000		
MB-62184	Aqueous		25	☐	0	0	25	1.000		
N024160-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-013B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-013B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-016B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2017 7:33:32 A**
Prep End Date: **5/11/2017 12:00:00**
Prep Batch **62184** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/22/2017
Initials/ Date: 5/22/2017
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-33**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024184-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N024185-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 May 2017 07:50:37 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	83816.60	0.00	
24	Mg	321711.00	0.00	
25	Mg	42009.00	0.00	
26	Mg	48646.10	0.00	
59	Co	410417.00	0.00	
115	In	735176.00	0.00	
206	Pb	191464.00	0.00	
207	Pb	168277.00	0.00	
208	Pb	411338.00	0.00	

RSD (%)

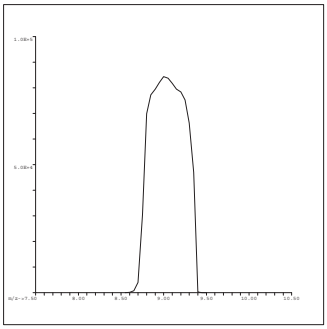
Element		Actual	Required	Flag
9	Be	1.38	5.00	
24	Mg	1.69	5.00	
25	Mg	4.03	5.00	
26	Mg	1.84	5.00	
59	Co	1.97	5.00	
115	In	1.44	5.00	
206	Pb	1.99	5.00	
207	Pb	1.98	5.00	
208	Pb	2.08	5.00	

Ion Ratio

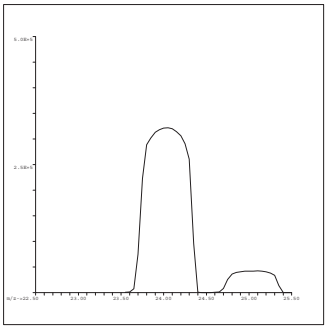
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

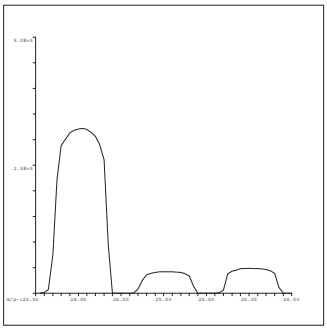
Element	Actual	Required	Flag



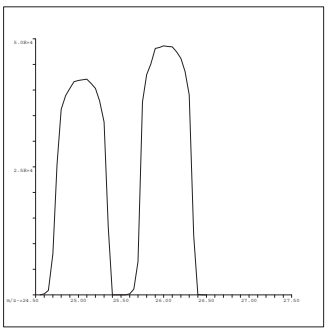
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



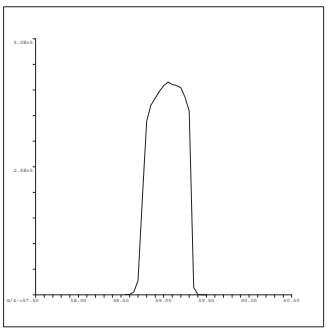
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



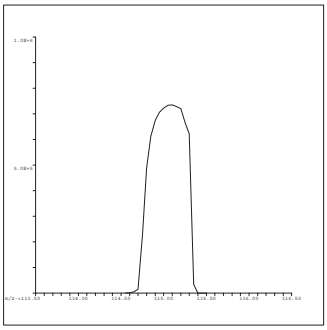
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



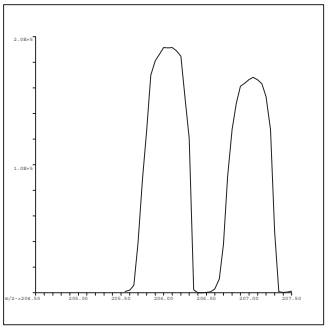
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



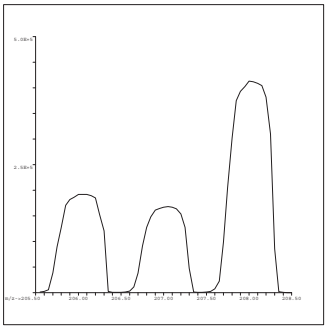
59 Co
Mass Calib.
Actual: 59.10
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



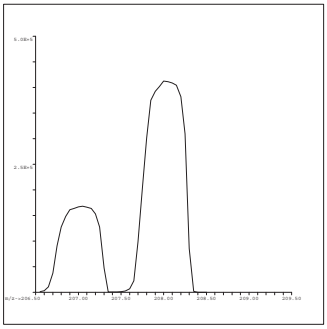
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 15 May 2017 10:32:19 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	103511.00	0.00	
24 Mg	343019.00	0.00	
25 Mg	44758.10	0.00	
26 Mg	52402.80	0.00	
59 Co	495420.00	0.00	
115 In	731926.00	0.00	
206 Pb	173350.00	0.00	
207 Pb	151640.00	0.00	
208 Pb	370198.00	0.00	

RSD (%)

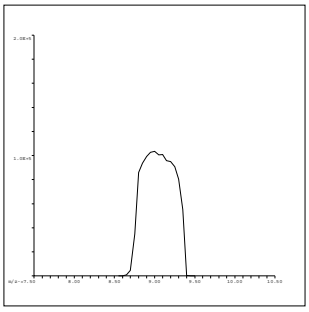
Element	Actual	Required	Flag
9 Be	0.93	5.00	
24 Mg	0.68	5.00	
25 Mg	1.54	5.00	
26 Mg	0.93	5.00	
59 Co	0.94	5.00	
115 In	0.80	5.00	
206 Pb	0.94	5.00	
207 Pb	0.77	5.00	
208 Pb	0.90	5.00	

Ion Ratio

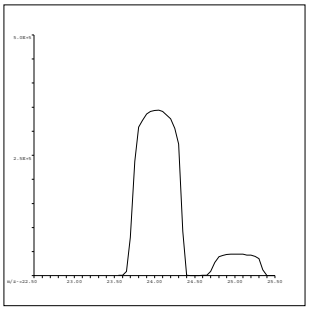
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

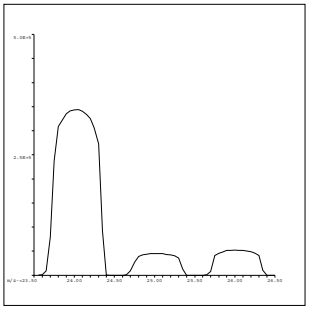
Element	Actual	Required	Flag



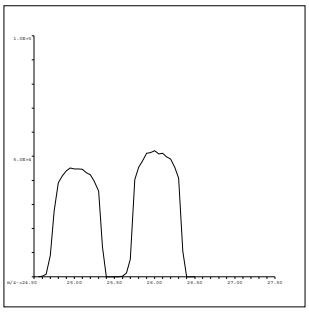
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



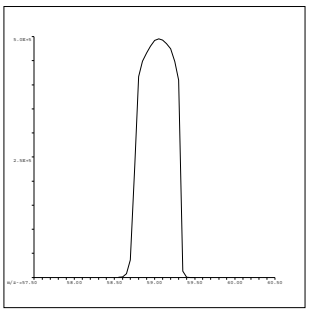
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



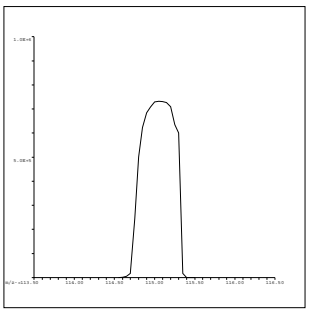
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



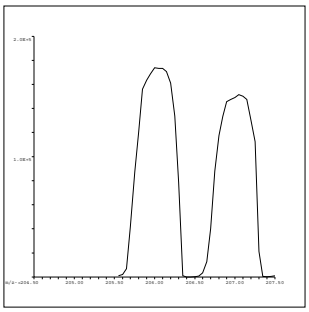
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



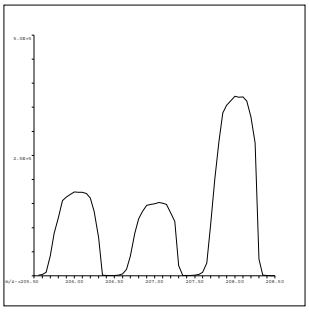
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



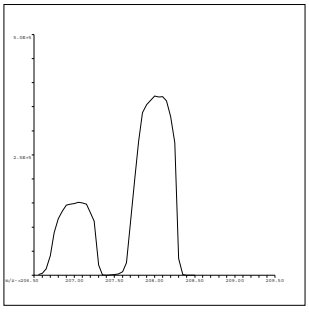
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170513A

Instrument ID: ICPMS-02

Analyte	Data File	A0513002.D	A0513003.D	A0513004.D	A0513005.D	A0513006.D	A0513007.D	A0513008.D	A0513009.D	A0513010.D	
	Acq. Date-Time	05/13/2017 08:09 AM	05/13/2017 08:15 AM	05/13/2017 08:20 AM	05/13/2017 08:26 AM	05/13/2017 08:31 AM	05/13/2017 08:37 AM	05/13/2017 08:42 AM	05/13/2017 08:48 AM	05/13/2017 08:54 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	47850.9		47014	47127.6	46927	46041.1	46227.3	45127.6	45620	
55 Mn [2]	CPS	19.1		951.5	9786.1	19475	39126.3	76291.6	186723.9	371581.4	1.0000
52 Cr [2]	CPS	188.8		2369.1	22384.4	45062.6	89133.3	175242.7	428995	851840.8	1.0000
72 Ge (ISTD) [1]	CPS	36802.2		36061.8	35470.5	36170.8	35569.6	36114.1	34291.3	34609.8	
78 Se [1]	CPS	0		76.7	780.1	1565.7	3161.5	6248.1	15228.8	30620.8	0.9999
72 Ge (ISTD) [2]	CPS	33528.7	33144.5	33300.2	32735.8	32650.2	32654.7	32122.4	31384.4	31492.3	
75 As [2]	CPS	4.9	50.2	195.6	2017.5	4110.8	8095.4	15860.2	39038.9	77341.6	1.0000
103 Rh (ISTD) [2]	CPS	1314247.5		1306262.1	1291735.8	1308337.6	1300551.8	1214913	1198723.6	1158485.3	
95 Mo [2]	CPS	14.4		1306.8	13667.4	27676.9	55582.8	109975.8	272417.6	544735.6	0.9999
159 Tb (ISTD) [3]	CPS	4610641.4		4617206.8	4547696.7	4513333	4535312.6	4467800	4446781.3	4413916.9	
137 Ba [3]	CPS	49.1		3293.3	33859.7	66269.5	133471.6	261580.3	644299.6	1394640.6	0.9992

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170515A

Instrument ID: ICPMS-02

Analyte	Data File	A0515002.D	A0515004.D	A0515005.D	A0515006.D	A0515007.D	A0515008.D	A0515009.D	A0515010.D	
	Acq. Date-Time	05/15/2017 03:14 PM	05/15/2017 03:25 PM	05/15/2017 03:31 PM	05/15/2017 03:36 PM	05/15/2017 03:42 PM	05/15/2017 03:48 PM	05/15/2017 03:53 PM	05/15/2017 03:59 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	61737.1	62024.9	60686.7	59470.9	57924.4	55043.2	57455.3	57033.7	
78 Se [1]	CPS	1.1	125.6	1235.7	2394.7	4705.3	8673.8	23045.9	46136.3	1.0000
159 Tb (ISTD) [3]	CPS	5504030	5454598.5	5454553.7	5445661.9	5334604.8	5381457.7	5410078.9	5391908	
137 Ba [3]	CPS	92	4166.3	41574.7	83615.7	163009	328308.6	812548.4	1787968.5	0.9990

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645060**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.257	0.10	10.00	0	103	90	110				
Barium	101.851	1.0	100.0	0	102	90	110				
Manganese	104.633	0.50	100.0	0	105	90	110				
Molybdenum	9.472	0.50	10.00	0	94.7	90	110				
Selenium	9.769	0.50	10.00	0	97.7	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ZZZZZZ**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645062**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.120	0.10	0.1000	0	120	80	120				
Barium	0.986	1.0	1.000	0	98.6	80	120				
Manganese	0.548	0.50	0.5000	0	110	80	120				
Molybdenum	0.541	0.50	0.5000	0	108	80	120				
Selenium	0.562	0.50	0.5000	0	112	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645076**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.087	0.10	20.00	0	100	90	110				
Barium	19.114	1.0	20.00	0	95.6	90	110				
Manganese	20.221	0.50	20.00	0	101	90	110				
Molybdenum	19.138	0.50	20.00	0	95.7	90	110				
Selenium	19.606	0.50	20.00	0	98.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645083**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.189	0.10	20.00	0	101	90	110				
Barium	19.019	1.0	20.00	0	95.1	90	110				
Manganese	20.233	0.50	20.00	0	101	90	110				
Molybdenum	19.761	0.50	20.00	0	98.8	90	110				
Selenium	20.442	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ZZZZZZ**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645085**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.082	0.10	0.1000	0	82.1	70	130				
Barium	1.023	1.0	1.000	0	102	70	130				
Manganese	0.552	0.50	0.5000	0	110	70	130				
Molybdenum	0.501	0.50	0.5000	0	100	70	130				
Selenium	0.501	0.50	0.5000	0	100	70	130				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645098**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.937	0.10	20.00	0	99.7	90	110				
Barium	19.509	1.0	20.00	0	97.5	90	110				
Manganese	20.410	0.50	20.00	0	102	90	110				
Molybdenum	18.512	0.50	20.00	0	92.6	90	110				
Selenium	18.975	0.50	20.00	0	94.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.959	0.10	20.00	0	99.8	90	110				
Barium	19.814	1.0	20.00	0	99.1	90	110				
Manganese	20.530	0.50	20.00	0	103	90	110				
Molybdenum	19.261	0.50	20.00	0	96.3	90	110				
Selenium	18.644	0.50	20.00	0	93.2	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645122**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.357	0.10	20.00	0	96.8	90	110				
Barium	19.702	1.0	20.00	0	98.5	90	110				
Manganese	20.718	0.50	20.00	0	104	90	110				
Molybdenum	19.621	0.50	20.00	0	98.1	90	110				
Selenium	20.049	0.50	20.00	0	100	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ZZZZZZ**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.107	0.10	0.1000	0	107	70	130				
Barium	1.035	1.0	1.000	0	104	70	130				
Manganese	0.567	0.50	0.5000	0	113	70	130				
Molybdenum	0.517	0.50	0.5000	0	103	70	130				
Selenium	0.413	0.50	0.5000	0	82.6	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645137**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.844	0.10	20.00	0	99.2	90	110				
Barium	20.085	1.0	20.00	0	100	90	110				
Manganese	20.582	0.50	20.00	0	103	90	110				
Molybdenum	20.108	0.50	20.00	0	101	90	110				
Selenium	18.248	0.50	20.00	0	91.2	90	110				

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.202	0.10	20.00	0	101	90	110				
Barium	19.970	1.0	20.00	0	99.8	90	110				
Manganese	20.265	0.50	20.00	0	101	90	110				
Molybdenum	20.157	0.50	20.00	0	101	90	110				
Selenium	18.181	0.50	20.00	0	90.9	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCV**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.540	0.10	20.00	0	97.7	90	110				
Barium	19.943	1.0	20.00	0	99.7	90	110				
Manganese	20.195	0.50	20.00	0	101	90	110				
Molybdenum	19.665	0.50	20.00	0	98.3	90	110				
Selenium	17.843	0.50	20.00	0	89.2	90	110				S

Se on CCV8 is outside criteria however, samples were enclosed by CCV7/ CCB7.

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

5/24/2017

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ZZZZZZ**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645154**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	92.6	70	130				
Barium	1.068	1.0	1.000	0	107	70	130				
Manganese	0.538	0.50	0.5000	0	108	70	130				
Molybdenum	0.493	0.50	0.5000	0	98.7	70	130				
Selenium	0.644	0.50	0.5000	0	129	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **ICV**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646216**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	94.469	1.0	100.0	0	94.5	90	110				
Selenium	9.986	0.50	10.00	0	99.9	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **ZZZZZZ**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646218**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.002	1.0	1.000	0	100	80	120				
Selenium	0.483	0.50	0.5000	0	96.5	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **CCV**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	19.055	1.0	20.00	0	95.3	90	110				
Selenium	20.769	0.50	20.00	0	104	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **CCV**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	19.144	1.0	20.00	0	95.7	90	110				
Selenium	19.075	0.50	20.00	0	95.4	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **CCV**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	19.776	1.0	20.00	0	98.9	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	CCV3	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	115269
Client ID:	CCV	Batch ID:	R115269	TestNo:	EPA 6020			Analysis Date:	5/15/2017	SeqNo:	2646256

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	20.321	0.50	20.00	0	102	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	115269
Client ID:	CCV	Batch ID:	R115269	TestNo:	EPA 6020			Analysis Date:	5/15/2017	SeqNo:	2646259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	19.487	1.0	20.00	0	97.4	90	110				
Selenium	19.633	0.50	20.00	0	98.2	90	110				

Sample ID	LLCCV1	SampType:	CCV2	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	115269
Client ID:	ZZZZZZ	Batch ID:	R115269	TestNo:	EPA 6020			Analysis Date:	5/15/2017	SeqNo:	2646261

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	1.045	1.0	1.000	0	104	70	130				
Selenium	0.482	0.50	0.5000	0	96.4	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ICV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.570	1.0	10.00	0	106	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ZZZZZZ**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.986	1.0	1.000	0	98.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.146	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.329	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ZZZZZZ**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.977	1.0	1.000	0	97.7	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645001**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.683	1.0	20.00	0	98.4	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645013**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.522	1.0	20.00	0	97.6	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645025**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.982	1.0	20.00	0	99.9	90	110				

Sample ID **LLCCV2**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ZZZZZZ**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645027**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.995	1.0	1.000	0	99.5	70	130				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645040**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.724	1.0	20.00	0	98.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCV7	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCV	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645052

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.653	1.0	20.00	0	98.3	90	110				

Sample ID	CCV8	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCV	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645055

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.759	1.0	20.00	0	98.8	90	110				

Sample ID	LLCCV3	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645057

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.936	1.0	1.000	0	93.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645061**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.059	0.50									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645077**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.046	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645084**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.076	0.50									
Selenium	0.030	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645099**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.096	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.092	0.50									
Selenium	ND	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.092	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645138**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.081	0.50									
Selenium	ND	0.50									

Sample ID **CCB7**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645150**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.078	0.50									
Selenium	ND	0.50									

Sample ID **CCB8**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **CCB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645153**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **ICB**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646217**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **CCB**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **CCB**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **CCB**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **CCB**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **CCB**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644964

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644980

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644987

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645002

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645014

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB5	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645026

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB6	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645041

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB7	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645053

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB8	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645056

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICSA**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645063**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.079	0.50									
Selenium	0.029	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICSAB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645064**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.096	0.10	20.00	0	100	80	120				
Barium	21.726	1.0	20.00	0	109	80	120				
Manganese	22.149	0.50	20.00	0	111	80	120				
Molybdenum	21.050	0.50	20.00	0	105	80	120				
Selenium	19.254	0.50	20.00	0	96.3	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICSA**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645086**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.040	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICSAB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645087**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.129	0.10	20.00	0	101	80	120				
Barium	21.222	1.0	20.00	0	106	80	120				
Manganese	21.837	0.50	20.00	0	109	80	120				
Molybdenum	22.255	0.50	20.00	0	111	80	120				
Selenium	17.391	0.50	20.00	0	87.0	80	120				

Sample ID **ICSA3**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICSA**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645125**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICSAB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645126**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.932	0.10	20.00	0	99.7	80	120				
Barium	22.165	1.0	20.00	0	111	80	120				
Manganese	22.623	0.50	20.00	0	113	80	120				
Molybdenum	22.179	0.50	20.00	0	111	80	120				
Selenium	17.227	0.50	20.00	0	86.1	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICSA**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645155**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ICSAB**	Batch ID: **R115235**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645156**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.909	0.10	20.00	0	99.5	80	120				
Barium	22.540	1.0	20.00	0	113	80	120				
Manganese	22.816	0.50	20.00	0	114	80	120				
Molybdenum	22.434	0.50	20.00	0	112	80	120				
Selenium	17.350	0.50	20.00	0	86.7	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **ICSA**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646219**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **ICSAB**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646220**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	18.625	1.0	20.00	0	93.1	80	120				
Selenium	18.540	0.50	20.00	0	92.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **ICSA**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	ND	1.0									
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **ICSAB**	Batch ID: **R115269**	TestNo: **EPA 6020**		Analysis Date: **5/15/2017**	SeqNo: **2646263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	19.985	1.0	20.00	0	99.9	80	120				
Selenium	17.866	0.50	20.00	0	89.3	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSA	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.041	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSAB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644967

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.009	1.0	20.00	0	95.0	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSA	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644989

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.030	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSAB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644990

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.627	1.0	20.00	0	93.1	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSA	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645028

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.039	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ICSAB**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.739	1.0	20.00	0	93.7	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ICSA**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.044	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ICSAB**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.771	1.0	20.00	0	93.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4610641.4	4610641.4	100	PASS	70-125	47850.9	47850.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	4572193	4610641.4	99.17	PASS	70-125	47820.8	47850.9	99.94	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	4617206.8	4610641.4	100.14	PASS	70-125	47014	47850.9	98.25	PASS	70-125
Std3-5/50 ppb	ICAL	1	4547696.7	4610641.4	98.63	PASS	70-125	47127.6	47850.9	98.49	PASS	70-125
Std4-10/100 ppb	ICAL	1	4513333	4610641.4	97.89	PASS	70-125	46927	47850.9	98.069	PASS	70-125
Std5-20/200 ppb	ICAL	1	4535312.6	4610641.4	98.37	PASS	70-125	46041.1	47850.9	96.22	PASS	70-125
Std6-40/400 ppb	ICAL	1	4467800	4610641.4	96.9	PASS	70-125	46227.3	47850.9	96.61	PASS	70-125
Std7-100/1000 ppb	ICAL	1	4446781.3	4610641.4	96.45	PASS	70-125	45127.6	47850.9	94.31	PASS	70-125
Std8-200/2000 ppb	ICAL	1	4413916.9	4610641.4	95.73	PASS	70-125	45620	47850.9	95.34	PASS	70-125
ICV	ICV	1	4741286	4610641.4	102.83	PASS	70-125	51731.2	47850.9	108.11	PASS	70-125
ICB	ICB	1	4702867.6	4610641.4	102	PASS	70-125	49489.9	47850.9	103.43	PASS	70-125
LLICV	CCV1	1	4768202	4610641.4	103.42	PASS	70-125	48882.7	47850.9	102.16	PASS	70-125
ICSA1	ICSA	1	4142234.8	4610641.4	89.84	PASS	70-125	52717.8	47850.9	110.17	PASS	70-125
ICSAB1	ICSAB	1	4381658.4	4610641.4	95.034	PASS	70-125	58688.8	47850.9	122.65	PASS	70-125
LLICV	CCV1	1	4746720.6	4610641.4	102.95	PASS	70-125	49488.7	47850.9	103.42	PASS	70-125
CCV1	CCV	1	4402788.5	4610641.4	95.49	PASS	70-125	43825.3	47850.9	91.59	PASS	70-125
CCB1	CCB	1	4434951.6	4610641.4	96.19	PASS	70-125	43703.7	47850.9	91.33	PASS	70-125
CCV2	CCV	1	4442856.2	4610641.4	96.36	PASS	70-125	43282.7	47850.9	90.45	PASS	70-125
CCB2	CCB	1	4447353.7	4610641.4	96.46	PASS	70-125	42683.3	47850.9	89.2	PASS	70-125
LLCCV1	CCV2	1	4687491.6	4610641.4	101.67	PASS	70-125	46234	47850.9	96.62	PASS	70-125
ICSA2	ICSA	1	3926352.1	4610641.4	85.16	PASS	70-125	49971.4	47850.9	104.43	PASS	70-125
ICSAB2	ICSAB	1	4169976.1	4610641.4	90.44	PASS	70-125	57793.4	47850.9	120.78	PASS	70-125
CCV3	CCV	1	4561410.8	4610641.4	98.93	PASS	70-125	51720	47850.9	108.09	PASS	70-125
CCB3	CCB	1	4432299.5	4610641.4	96.13	PASS	70-125	45810.7	47850.9	95.74	PASS	70-125
CCV4	CCV	1	4516569.9	4610641.4	97.96	PASS	70-125	48542.7	47850.9	101.45	PASS	70-125
CCB4	CCB	1	4466824.8	4610641.4	96.88	PASS	70-125	45038.6	47850.9	94.12	PASS	70-125
MB-62184	MBLK	1	4575964.3	4610641.4	99.25	PASS	70-125	47793.9	47850.9	99.88	PASS	70-125
LCS-62184	LCS	1	4905968.8	4610641.4	106.41	PASS	70-125	49910	47850.9	104.3	PASS	70-125
N024160-013B	SAMP	1	4637661.4	4610641.4	100.59	PASS	70-125	49165.6	47850.9	102.75	PASS	70-125
N024160-013B	SAMP	5	4444250.2	4610641.4	96.39	PASS	70-125	44699.7	47850.9	93.41	PASS	70-125
CCV5	CCV	1	4406647.4	4610641.4	95.58	PASS	70-125	42999.8	47850.9	89.86	PASS	70-125
CCB5	CCB	1	4399824.8	4610641.4	95.43	PASS	70-125	40809.7	47850.9	85.29	PASS	70-125
LLCCV2	CCV2	1	4568980.2	4610641.4	99.096	PASS	70-125	41701.9	47850.9	87.15	PASS	70-125
ICSA3	ICSA	1	4071017.1	4610641.4	88.3	PASS	70-125	42284.5	47850.9	88.37	PASS	70-125
ICSAB3	ICSAB	1	4436783	4610641.4	96.23	PASS	70-125	51881.6	47850.9	108.42	PASS	70-125
N024160-013B-PS	PS	1	4661753.6	4610641.4	101.11	PASS	70-125	49534.4	47850.9	103.52	PASS	70-125
N024160-013B-MS	MS	1	4567188.7	4610641.4	99.058	PASS	70-125	46333.1	47850.9	96.83	PASS	70-125
N024160-013B-MSD	MSD	1	4560418.4	4610641.4	98.91	PASS	70-125	47476.2	47850.9	99.22	PASS	70-125
N024160-014B	SAMP	1	4417858.9	4610641.4	95.82	PASS	70-125	45777.2	47850.9	95.67	PASS	70-125
N024160-015B	SAMP	1	4435346.7	4610641.4	96.2	PASS	70-125	46084.7	47850.9	96.31	PASS	70-125
N024160-016B	SAMP	1	4589749.8	4610641.4	99.55	PASS	70-125	50107.6	47850.9	104.72	PASS	70-125

INTERNAL STANDARD: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N024184-001B	SAMP	1	4562590.1	4610641.4	98.96	PASS	70-125	49152.2	47850.9	102.72	PASS	70-125
N024184-002B	SAMP	1	4521998.3	4610641.4	98.077	PASS	70-125	48936.1	47850.9	102.27	PASS	70-125
N024184-003B	SAMP	1	4597941.3	4610641.4	99.72	PASS	70-125	49234.6	47850.9	102.89	PASS	70-125
N024184-004B	SAMP	1	4506686.1	4610641.4	97.75	PASS	70-125	48580.5	47850.9	101.52	PASS	70-125
CCV6	CCV	1	4439833.2	4610641.4	96.3	PASS	70-125	46428.8	47850.9	97.028	PASS	70-125
CCB6	CCB	1	4365431.6	4610641.4	94.68	PASS	70-125	43548.9	47850.9	91.01	PASS	70-125
N024184-005B	SAMP	1	4547490.7	4610641.4	98.63	PASS	70-125	45038.5	47850.9	94.12	PASS	70-125
N024184-006B	SAMP	1	4527587.3	4610641.4	98.2	PASS	70-125	45949.8	47850.9	96.027	PASS	70-125
N024184-007B	SAMP	1	4349601.5	4610641.4	94.34	PASS	70-125	44946	47850.9	93.93	PASS	70-125
N024184-008B	SAMP	1	4420213.1	4610641.4	95.87	PASS	70-125	44960.4	47850.9	93.96	PASS	70-125
N024184-009B	SAMP	1	4468534.1	4610641.4	96.92	PASS	70-125	46659.5	47850.9	97.51	PASS	70-125
N024184-010B	SAMP	1	4570711	4610641.4	99.13	PASS	70-125	47193.2	47850.9	98.63	PASS	70-125
N024184-011B	SAMP	1	4511617.4	4610641.4	97.85	PASS	70-125	47568.7	47850.9	99.41	PASS	70-125
N024184-012B	SAMP	1	4594945.8	4610641.4	99.66	PASS	70-125	48586.1	47850.9	101.54	PASS	70-125
N024184-013B	SAMP	1	4556557.6	4610641.4	98.83	PASS	70-125	48266.4	47850.9	100.87	PASS	70-125
N024184-014B	SAMP	1	4540147.5	4610641.4	98.47	PASS	70-125	46248.5	47850.9	96.65	PASS	70-125
CCV7	CCV	1	4422585.6	4610641.4	95.92	PASS	70-125	45225.8	47850.9	94.51	PASS	70-125
CCB7	CCB	1	4334897.6	4610641.4	94.019	PASS	70-125	41599.4	47850.9	86.94	PASS	70-125
N024185-001B	SAMP	1	4496074.6	4610641.4	97.52	PASS	70-125	46408	47850.9	96.98	PASS	70-125
CCV8	CCV	1	4480378.2	4610641.4	97.17	PASS	70-125	45055.1	47850.9	94.16	PASS	70-125
CCB8	CCB	1	4376740.6	4610641.4	94.93	PASS	70-125	42364.8	47850.9	88.54	PASS	70-125
LLCCV3	CCV2	1	4520602.8	4610641.4	98.047	PASS	70-125	41883.6	47850.9	87.53	PASS	70-125
ICSA4	ICSA	1	4078455.5	4610641.4	88.46	PASS	70-125	42744.6	47850.9	89.33	PASS	70-125
ICSAB4	ICSAB	1	4464635.8	4610641.4	96.83	PASS	70-125	51221.8	47850.9	107.05	PASS	70-125

INTERNAL STANDARD: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	33528.7	33528.7	100	PASS	70-125	36802.2	36802.2	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	33144.5	33528.7	98.85	PASS	70-125	36363.5	36802.2	98.81	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	33300.2	33528.7	99.32	PASS	70-125	36061.8	36802.2	97.99	PASS	70-125
Std3-5/50 ppb	ICAL	1	32735.8	33528.7	97.64	PASS	70-125	35470.5	36802.2	96.38	PASS	70-125
Std4-10/100 ppb	ICAL	1	32650.2	33528.7	97.38	PASS	70-125	36170.8	36802.2	98.28	PASS	70-125
Std5-20/200 ppb	ICAL	1	32654.7	33528.7	97.39	PASS	70-125	35569.6	36802.2	96.65	PASS	70-125
Std6-40/400 ppb	ICAL	1	32122.4	33528.7	95.81	PASS	70-125	36114.1	36802.2	98.13	PASS	70-125
Std7-100/1000 ppb	ICAL	1	31384.4	33528.7	93.6	PASS	70-125	34291.3	36802.2	93.18	PASS	70-125
Std8-200/2000 ppb	ICAL	1	31492.3	33528.7	93.93	PASS	70-125	34609.8	36802.2	94.043	PASS	70-125
ICV	ICV	1	36124.2	33528.7	107.74	PASS	70-125	41157.3	36802.2	111.83	PASS	70-125
ICB	ICB	1	34177.6	33528.7	101.94	PASS	70-125	37996.2	36802.2	103.24	PASS	70-125
LLICV	CCV1	1	34287.8	33528.7	102.26	PASS	70-125	37557.4	36802.2	102.05	PASS	70-125
ICSA1	ICSA	1	34878	33528.7	104.02	PASS	70-125	35311.3	36802.2	95.95	PASS	70-125
ICSAB1	ICSAB	1	39155.5	33528.7	116.78	PASS	70-125	41694	36802.2	113.29	PASS	70-125
LLICV	CCV1	1	34545.1	33528.7	103.03	PASS	70-125	37907	36802.2	103	PASS	70-125
CCV1	CCV	1	30799.8	33528.7	91.86	PASS	70-125	34079.7	36802.2	92.6	PASS	70-125
CCB1	CCB	1	31660.3	33528.7	94.43	PASS	70-125	35099.6	36802.2	95.37	PASS	70-125
CCV2	CCV	1	30836.6	33528.7	91.97	PASS	70-125	34937.1	36802.2	94.93	PASS	70-125
CCB2	CCB	1	31379.9	33528.7	93.59	PASS	70-125	34476.2	36802.2	93.68	PASS	70-125
LLCCV1	CCV2	1	32801.5	33528.7	97.83	PASS	70-125	36577.5	36802.2	99.39	PASS	70-125
ICSA2	ICSA	1	32679.1	33528.7	97.47	PASS	70-125	34480.6	36802.2	93.69	PASS	70-125
ICSAB2	ICSAB	1	37283.4	33528.7	111.2	PASS	70-125	39376	36802.2	106.99	PASS	70-125
CCV3	CCV	1	35607.4	33528.7	106.2	PASS	70-125	42139.7	36802.2	114.5	PASS	70-125
CCB3	CCB	1	32645.8	33528.7	97.37	PASS	70-125	38557.5	36802.2	104.77	PASS	70-125
CCV4	CCV	1	33706.8	33528.7	100.53	PASS	70-125	40866.4	36802.2	111.04	PASS	70-125
CCB4	CCB	1	31913.1	33528.7	95.18	PASS	70-125	38280.2	36802.2	104.02	PASS	70-125
MB-62184	MBLK	1	32603.4	33528.7	97.24	PASS	70-125	39250.3	36802.2	106.65	PASS	70-125
LCS-62184	LCS	1	35537.4	33528.7	105.99	PASS	70-125	43741.6	36802.2	118.86	PASS	70-125
N024160-013B	SAMP	1	34279	33528.7	102.24	PASS	70-125	41289.6	36802.2	112.19	PASS	70-125
N024160-013B	SAMP	5	32313.9	33528.7	96.38	PASS	70-125	38434.9	36802.2	104.44	PASS	70-125
CCV5	CCV	1	31352	33528.7	93.51	PASS	70-125	36947.1	36802.2	100.39	PASS	70-125
CCB5	CCB	1	29590.9	33528.7	88.26	PASS	70-125	35970.4	36802.2	97.74	PASS	70-125
LLCCV2	CCV2	1	31062.6	33528.7	92.64	PASS	70-125	36550.6	36802.2	99.32	PASS	70-125
ICSA3	ICSA	1	29771.3	33528.7	88.79	PASS	70-125	32135.8	36802.2	87.32	PASS	70-125
ICSAB3	ICSAB	1	34909.1	33528.7	104.12	PASS	70-125	40288.3	36802.2	109.47	PASS	70-125
N024160-013B-PS	PS	1	35007.2	33528.7	104.41	PASS	70-125	43242.5	36802.2	117.5	PASS	70-125
N024160-013B-MS	MS	1	33290.3	33528.7	99.29	PASS	70-125	39333.9	36802.2	106.88	PASS	70-125
N024160-013B-MSD	MSD	1	33369.3	33528.7	99.52	PASS	70-125	40238.3	36802.2	109.34	PASS	70-125
N024160-014B	SAMP	1	32410.6	33528.7	96.67	PASS	70-125	39402.8	36802.2	107.07	PASS	70-125
N024160-015B	SAMP	1	32689.1	33528.7	97.5	PASS	70-125	40116.8	36802.2	109.01	PASS	70-125
N024160-016B	SAMP	1	34939.4	33528.7	104.21	PASS	70-125	42957.3	36802.2	116.72	PASS	70-125

INTERNAL STANDARD: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N024184-001B	SAMP	1	34520.7	33528.7	102.96	PASS	70-125	42380.3	36802.2	115.16	PASS	70-125
N024184-002B	SAMP	1	34172.1	33528.7	101.92	PASS	70-125	42636.4	36802.2	115.85	PASS	70-125
N024184-003B	SAMP	1	34859.2	33528.7	103.97	PASS	70-125	42073.9	36802.2	114.32	PASS	70-125
N024184-004B	SAMP	1	34293.5	33528.7	102.28	PASS	70-125	41416.8	36802.2	112.54	PASS	70-125
CCV6	CCV	1	32997.6	33528.7	98.42	PASS	70-125	41348.6	36802.2	112.35	PASS	70-125
CCB6	CCB	1	31904.1	33528.7	95.15	PASS	70-125	39073.1	36802.2	106.17	PASS	70-125
N024184-005B	SAMP	1	32513.2	33528.7	96.97	PASS	70-125	39253.6	36802.2	106.66	PASS	70-125
N024184-006B	SAMP	1	32856.1	33528.7	97.99	PASS	70-125	40043.3	36802.2	108.81	PASS	70-125
N024184-007B	SAMP	1	31958.6	33528.7	95.32	PASS	70-125	38663.1	36802.2	105.06	PASS	70-125
N024184-008B	SAMP	1	32425.2	33528.7	96.71	PASS	70-125	38656.7	36802.2	105.04	PASS	70-125
N024184-009B	SAMP	1	33122.4	33528.7	98.79	PASS	70-125	39252.6	36802.2	106.66	PASS	70-125
N024184-010B	SAMP	1	33651.1	33528.7	100.37	PASS	70-125	40042.2	36802.2	108.8	PASS	70-125
N024184-011B	SAMP	1	33696.5	33528.7	100.5	PASS	70-125	40291.7	36802.2	109.48	PASS	70-125
N024184-012B	SAMP	1	34348	33528.7	102.44	PASS	70-125	40100	36802.2	108.96	PASS	70-125
N024184-013B	SAMP	1	34488.3	33528.7	102.86	PASS	70-125	39988.6	36802.2	108.66	PASS	70-125
N024184-014B	SAMP	1	32665.7	33528.7	97.43	PASS	70-125	38770.1	36802.2	105.35	PASS	70-125
CCV7	CCV	1	31758.5	33528.7	94.72	PASS	70-125	39280.2	36802.2	106.73	PASS	70-125
CCB7	CCB	1	29974.9	33528.7	89.4	PASS	70-125	36049.5	36802.2	97.95	PASS	70-125
N024185-001B	SAMP	1	32286	33528.7	96.29	PASS	70-125	38596.4	36802.2	104.88	PASS	70-125
CCV8	CCV	1	32663.5	33528.7	97.42	PASS	70-125	42292.1	36802.2	114.92	PASS	70-125
CCB8	CCB	1	30615.1	33528.7	91.31	PASS	70-125	36725.5	36802.2	99.79	PASS	70-125
LLCCV3	CCV2	1	30516	33528.7	91.015	PASS	70-125	36298.9	36802.2	98.63	PASS	70-125
ICSA4	ICSA	1	29633.3	33528.7	88.38	PASS	70-125	33276.8	36802.2	90.42	PASS	70-125
ICSAB4	ICSAB	1	35031.7	33528.7	104.48	PASS	70-125	40808.5	36802.2	110.89	PASS	70-125

INTERNAL STANDARD: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1314247.5	1314247.5	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1321282	1314247.5	100.54	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1306262.1	1314247.5	99.39	PASS	70-125
Std3-5/50 ppb	ICAL	1	1291735.8	1314247.5	98.29	PASS	70-125
Std4-10/100 ppb	ICAL	1	1308337.6	1314247.5	99.55	PASS	70-125
Std5-20/200 ppb	ICAL	1	1300551.8	1314247.5	98.96	PASS	70-125
Std6-40/400 ppb	ICAL	1	1214913	1314247.5	92.44	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1198723.6	1314247.5	91.21	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1158485.3	1314247.5	88.15	PASS	70-125
ICV	ICV	1	1392999.4	1314247.5	105.99	PASS	70-125
ICB	ICB	1	1365996.1	1314247.5	103.94	PASS	70-125
LLICV	CCV1	1	1366593.2	1314247.5	103.98	PASS	70-125
ICSA1	ICSA	1	1120605.6	1314247.5	85.27	PASS	70-125
ICSAB1	ICSAB	1	1311891.1	1314247.5	99.82	PASS	70-125
LLICV	CCV1	1	1371586	1314247.5	104.36	PASS	70-125
CCV1	CCV	1	1197834.9	1314247.5	91.14	PASS	70-125
CCB1	CCB	1	1170335.2	1314247.5	89.05	PASS	70-125
CCV2	CCV	1	1160802.9	1314247.5	88.32	PASS	70-125
CCB2	CCB	1	1167230.4	1314247.5	88.81	PASS	70-125
LLCCV1	CCV2	1	1339800.4	1314247.5	101.94	PASS	70-125
ICSA2	ICSA	1	1058710.8	1314247.5	80.56	PASS	70-125
ICSAB2	ICSAB	1	1169481.5	1314247.5	88.98	PASS	70-125
CCV3	CCV	1	1352303.6	1314247.5	102.9	PASS	70-125
CCB3	CCB	1	1204954.3	1314247.5	91.68	PASS	70-125
CCV4	CCV	1	1217820	1314247.5	92.66	PASS	70-125
CCB4	CCB	1	1175781.7	1314247.5	89.46	PASS	70-125
MB-62184	MBLK	1	1298417.2	1314247.5	98.8	PASS	70-125
LCS-62184	LCS	1	1353279.7	1314247.5	102.97	PASS	70-125
N024160-013B	SAMP	1	1122836.1	1314247.5	85.44	PASS	70-125
N024160-013B	SAMP	5	1100019.8	1314247.5	83.7	PASS	70-125
CCV5	CCV	1	1132754.7	1314247.5	86.19	PASS	70-125
CCB5	CCB	1	1101020.8	1314247.5	83.78	PASS	70-125
LLCCV2	CCV2	1	1143432.3	1314247.5	87.003	PASS	70-125
ICSA3	ICSA	1	967244.8	1314247.5	73.6	PASS	70-125
ICSAB3	ICSAB	1	1120104.9	1314247.5	85.23	PASS	70-125
N024160-013B-PS	PS	1	1134449.3	1314247.5	86.32	PASS	70-125
N024160-013B-MS	MS	1	1076106.9	1314247.5	81.88	PASS	70-125
N024160-013B-MSD	MSD	1	1086215.3	1314247.5	82.65	PASS	70-125
N024160-014B	SAMP	1	1044866	1314247.5	79.5	PASS	70-125
N024160-015B	SAMP	1	1037388.2	1314247.5	78.93	PASS	70-125
N024160-016B	SAMP	1	1103955.4	1314247.5	84	PASS	70-125

INTERNAL STANDARD: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N024184-001B	SAMP	1	1081986.6	1314247.5	82.33	PASS	70-125
N024184-002B	SAMP	1	1081598.1	1314247.5	82.3	PASS	70-125
N024184-003B	SAMP	1	1095337.7	1314247.5	83.34	PASS	70-125
N024184-004B	SAMP	1	1077717.6	1314247.5	82.003	PASS	70-125
CCV6	CCV	1	1157718.2	1314247.5	88.09	PASS	70-125
CCB6	CCB	1	1128432.4	1314247.5	85.86	PASS	70-125
N024184-005B	SAMP	1	1055860.4	1314247.5	80.34	PASS	70-125
N024184-006B	SAMP	1	1057726.5	1314247.5	80.48	PASS	70-125
N024184-007B	SAMP	1	1025449.6	1314247.5	78.026	PASS	70-125
N024184-008B	SAMP	1	1035503.1	1314247.5	78.79	PASS	70-125
N024184-009B	SAMP	1	1065247.5	1314247.5	81.054	PASS	70-125
N024184-010B	SAMP	1	1078475.4	1314247.5	82.06	PASS	70-125
N024184-011B	SAMP	1	1073374.9	1314247.5	81.67	PASS	70-125
N024184-012B	SAMP	1	1088074.9	1314247.5	82.79	PASS	70-125
N024184-013B	SAMP	1	1084485.4	1314247.5	82.52	PASS	70-125
N024184-014B	SAMP	1	1050599.5	1314247.5	79.94	PASS	70-125
CCV7	CCV	1	1130331.2	1314247.5	86.006	PASS	70-125
CCB7	CCB	1	1094950.5	1314247.5	83.31	PASS	70-125
N024185-001B	SAMP	1	1054512.3	1314247.5	80.24	PASS	70-125
CCV8	CCV	1	1163175.6	1314247.5	88.51	PASS	70-125
CCB8	CCB	1	1096058.1	1314247.5	83.4	PASS	70-125
LLCCV3	CCV2	1	1115853.5	1314247.5	84.9	PASS	70-125
ICSA4	ICSA	1	970864	1314247.5	73.87	PASS	70-125
ICSAB4	ICSAB	1	1105174.6	1314247.5	84.092	PASS	70-125

INTERNAL STANDARD: 170515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	5504030	5504030	100	PASS	70-125	61737.1	61737.1	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	5516255.7	5504030	100.22	PASS	70-125	62307.2	61737.1	100.92	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	5454598.5	5504030	99.1	PASS	70-125	62024.9	61737.1	100.47	PASS	70-125
Std3-5/50 ppb	ICAL	1	5454553.7	5504030	99.1	PASS	70-125	60686.7	61737.1	98.3	PASS	70-125
Std4-10/100 ppb	ICAL	1	5445661.9	5504030	98.94	PASS	70-125	59470.9	61737.1	96.33	PASS	70-125
Std5-20/200 ppb	ICAL	1	5334604.8	5504030	96.92	PASS	70-125	57924.4	61737.1	93.82	PASS	70-125
Std6-40/400 ppb	ICAL	1	5381457.7	5504030	97.77	PASS	70-125	55043.2	61737.1	89.16	PASS	70-125
Std7-100/1000 ppb	ICAL	1	5410078.9	5504030	98.29	PASS	70-125	57455.3	61737.1	93.064	PASS	70-125
Std8-200/2000 ppb	ICAL	1	5391908	5504030	97.96	PASS	70-125	57033.7	61737.1	92.38	PASS	70-125
ICV	ICV	1	5392580.5	5504030	97.98	PASS	70-125	57658	61737.1	93.39	PASS	70-125
ICB	ICB	1	5474013.1	5504030	99.45	PASS	70-125	58546.6	61737.1	94.83	PASS	70-125
LLICV	CCV1	1	5761217.9	5504030	104.67	PASS	70-125	62178.8	61737.1	100.72	PASS	70-125
ICSA1	ICSA	1	5054164.6	5504030	91.83	PASS	70-125	59948.5	61737.1	97.1	PASS	70-125
ICSAB1	ICSAB	1	5056374.5	5504030	91.87	PASS	70-125	62298.4	61737.1	100.91	PASS	70-125
LLICV	CCV1	1	6085537	5504030	110.57	PASS	70-125	74103.8	61737.1	120.03	PASS	70-125
CCV1	CCV	1	5484014.5	5504030	99.64	PASS	70-125	57325.7	61737.1	92.85	PASS	70-125
CCB1	CCB	1	5598156.1	5504030	101.71	PASS	70-125	58018.1	61737.1	93.98	PASS	70-125
N024160-013B	SAMP	5	5187462.6	5504030	94.25	PASS	70-125	54397.7	61737.1	88.11	PASS	70-125
N024160-013B	SAMP	25	5163853.2	5504030	93.82	PASS	70-125	53472.9	61737.1	86.61	PASS	70-125
N024160-013B-PS	PS	5	5181894.1	5504030	94.15	PASS	70-125	54337.7	61737.1	88.015	PASS	70-125
N024160-013B-MS	MS	5	5201714.8	5504030	94.51	PASS	70-125	52241.9	61737.1	84.62	PASS	70-125
N024160-013B-MSD	MSD	5	5193030.9	5504030	94.35	PASS	70-125	53092.4	61737.1	86	PASS	70-125
N024160-015B	SAMP	5	5120239.6	5504030	93.027	PASS	70-125	53199.7	61737.1	86.17	PASS	70-125
CCV2	CCV	1	5467974.6	5504030	99.34	PASS	70-125	59049.4	61737.1	95.65	PASS	70-125
CCB2	CCB	1	5173943.4	5504030	94.003	PASS	70-125	56682.4	61737.1	91.81	PASS	70-125
N024160-016B	SAMP	5	5160774.8	5504030	93.76	PASS	70-125	54006.6	61737.1	87.48	PASS	70-125
N024184-003B	SAMP	1	5491298.5	5504030	99.77	PASS	70-125	60420.3	61737.1	97.87	PASS	70-125
N024184-004B	SAMP	1	5542554.6	5504030	100.7	PASS	70-125	63082.3	61737.1	102.18	PASS	70-125
N024184-005B	SAMP	1	5593186.4	5504030	101.62	PASS	70-125	64387.3	61737.1	104.29	PASS	70-125
N024184-006B	SAMP	1	5431061.2	5504030	98.67	PASS	70-125	66524.9	61737.1	107.76	PASS	70-125
N024184-008B	SAMP	1	5338818.3	5504030	97	PASS	70-125	65054.4	61737.1	105.37	PASS	70-125
N024184-009B	SAMP	1	5430225.3	5504030	98.66	PASS	70-125	65789.6	61737.1	106.56	PASS	70-125
N024184-010B	SAMP	1	5479755.5	5504030	99.56	PASS	70-125	64997.4	61737.1	105.28	PASS	70-125
N024184-011B	SAMP	1	5481652.8	5504030	99.59	PASS	70-125	65217.4	61737.1	105.64	PASS	70-125
N024184-014B	SAMP	1	5435635.8	5504030	98.76	PASS	70-125	63333.2	61737.1	102.59	PASS	70-125
CCV3	CCV	1	5483374.2	5504030	99.62	PASS	70-125	64985.2	61737.1	105.26	PASS	70-125
CCB3	CCB	1	5280587.1	5504030	95.94	PASS	70-125	59496.8	61737.1	96.37	PASS	70-125
N024184-004B	SAMP	1	5452649.6	5504030	99.066	PASS	70-125	61249.8	61737.1	99.21	PASS	70-125
CCV4	CCV	1	5470903.8	5504030	99.4	PASS	70-125	61263.5	61737.1	99.23	PASS	70-125
CCB4	CCB	1	5263758.1	5504030	95.63	PASS	70-125	57771.5	61737.1	93.58	PASS	70-125
LLCCV1	CCV2	1	5812044.2	5504030	105.6	PASS	70-125	63371	61737.1	102.65	PASS	70-125

INTERNAL STANDARD: 170515A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
ICSA2	ICSA	1	5079931.6	5504030	92.29	PASS	70-125	57966.8	61737.1	93.89	PASS	70-125
ICSAB2	ICSAB	1	5135445.8	5504030	93.3	PASS	70-125	62254.7	61737.1	100.84	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024184
Test Method: EPA 6020
Analysis Date: 5/13/2017 & 5/15/2017

Matrix: Groundwater
Batch No.: 62184

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr, Mn, Mo & Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024160-013B DT 5X	Arsenic	ug/L	4.104662	PASS	4.019793	2.11%	10
N024160-013B DT 25X	Barium	ug/L	122.7684	PASS	121.7022	0.88%	10
N024160-013B DT 5X	Chromium	ug/L	4.104662	NA	2.098738	95.58%	10
N024160-013B DT 5X	Manganese	ug/L	1.09934	NA	0.940591	16.88%	10
N024160-013B DT 5X	Molybdenum	ug/L	4.673489	NA	4.398919	6.24%	10
N024160-013B DT 5X	Selenium	ug/L	0.260434	NA	0.085232	205.56%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **N024160-013B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115235**
Client ID: **ZZZZZZ**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2645127**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.681	0.10	10.00	4.020	86.6	80	120				
Manganese	87.855	0.50	100.0	0.9406	86.9	80	120				
Molybdenum	14.549	0.50	10.00	4.399	102	80	120				
Selenium	8.020	0.50	10.00	0.08523	79.4	80	120				S

Sample ID **N024160-013B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115269**
Client ID: **ZZZZZZ**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/15/2017**	SeqNo: **2646240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	219.134	5.0	100.0	121.7	97.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024184
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N024160-013B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645030

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.610	1.0	10.00	2.099	85.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

May 24, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024185

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 10, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucan for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024185

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *24-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024185
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024185-001A	SW-2-Q217	Groundwater	5/10/2017 2:30:00 PM	5/10/2017	5/24/2017
N024185-001B	SW-2-Q217	Groundwater	5/10/2017 2:30:00 PM	5/10/2017	5/24/2017
N024185-001C	SW-2-Q217	Groundwater	5/10/2017 2:30:00 PM	5/10/2017	5/24/2017
N024185-002A	AB1-Q217	Groundwater	5/10/2017 10:05:00 AM	5/10/2017	5/24/2017
N024185-003A	AB2-Q217	Groundwater	5/10/2017 12:35:00 PM	5/10/2017	5/24/2017

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024185
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024185-001

Client Sample ID: SW-2-Q217
Collection Date: 5/10/2017 2:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N024184-001DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115153**
Client ID: **ZZZZZZ**	Batch ID: **R115153**	TestNo: **EPA 120.1**		Analysis Date: **5/11/2017**	SeqNo: **2640298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	932.000	0.10						925.0	0.754	10	

Sample ID **N024184-014CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115153**
Client ID: **ZZZZZZ**	Batch ID: **R115153**	TestNo: **EPA 120.1**		Analysis Date: **5/11/2017**	SeqNo: **2640319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1032.000	0.10						1026	0.583	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024185
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024185-001

Client Sample ID: SW-2-Q217
Collection Date: 5/10/2017 2:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024184-001DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **115152**
Client ID: **ZZZZZZ**	Batch ID: **R115152**	TestNo: **SM4500-H+B**		Analysis Date: **5/11/2017**	SeqNo: **2640268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.320	0.10						8.280	0.482	10	H
Temp. at time of pH Analysis	16.100	0.10						16.40	1.85	10	H

Sample ID **N024185-001CDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **115152**
Client ID: **ZZZZZZ**	Batch ID: **R115152**	TestNo: **SM4500-H+B**		Analysis Date: **5/11/2017**	SeqNo: **2640283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.630	0.10						7.600	0.394	10	H
Temp. at time of pH Analysis	16.400	0.10						16.70	1.81	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024185
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024185-001

Client Sample ID: SW-2-Q217
Collection Date: 5/10/2017 2:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170511B** QC Batch: **R115198**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/11/2017 06:47 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB1-Q217
Lab Order:	N024185	**Collection Date:**	5/10/2017 10:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170511B**	QC Batch: **R115198**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/11/2017 07:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB2-Q217
Lab Order:	N024185	**Collection Date:**	5/10/2017 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170511B**	QC Batch: **R115198**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/11/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R115198**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **LCSW**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	90	110				

Sample ID **MB-R115198**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **PBW**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N024182-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	576.195	10	250.0	317.4	103	90	110				

Sample ID **N024182-006AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	570.365	10	250.0	317.4	101	90	110	576.2	1.02	20	

Sample ID **N024182-005ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.328	0.20						14.51	1.28	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024185-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115198
Client ID:	ZZZZZZ	Batch ID:	R115198	TestNo:	EPA 218.6			Analysis Date:	5/11/2017	SeqNo:	2642253

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID	N024185-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115198
Client ID:	ZZZZZZ	Batch ID:	R115198	TestNo:	EPA 218.6			Analysis Date:	5/11/2017	SeqNo:	2642257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.020	0.20	1.000	0	102	90	110				

Sample ID	N024185-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115198
Client ID:	ZZZZZZ	Batch ID:	R115198	TestNo:	EPA 218.6			Analysis Date:	5/11/2017	SeqNo:	2642259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.998	0.20	1.000	0	99.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62184	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	PBW	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645021

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62184	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	LCSW	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645022

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.071	1.0	10.00	0	90.7	85	115				

Sample ID	N024160-013B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.830	1.0	10.00	2.099	87.3	75	125				

Sample ID	N024160-013B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645032

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.672	1.0	10.00	2.099	85.7	75	125	10.83	1.47	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State:
Address: Roseville, CA 95661	Email: [illegible]	Address	Sample Receipt Condition: 1 Chilled ✓; 2 Headspace; 3 Container Intact ✓; 4 Seal Present; 5 IR number 2; 6 Method of Cooling: ICE
Phone: 916-786-3302 / Fax	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com / P.O #	Sample Temp: 1.1, 1.8, 2.7 °C
Submitted By: Jason Mahn		Phone: 949-727-1400, ext 200 / Fax:	Courier: ASET
Title: Project Manager	Phone: 916-786-3302 / Fax:		Tracking No:
Signature: [signature] Date: 5/10/17	Sampled By: Jason Mahn	Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid	
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.		
Project Name: PG&E Topock - RMP	Signature: [signature] Date: 5/10/17		
Project Number: RC000753.0801			

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Field QC Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Dissolved metals (SW6010B/SW6020A dis) FF: HNO3 Cr	Dissolved metals (SW6010B/SW6020A dis) FF: HNO3 Ca Mg K Na B	Dissolved metals (SW6010B/SW6020A dis) FF: HNO3 As Mn Fe Se Mo Ba	Total metals (SW6010B): HNO3 Fe	Anions (E300.0): Br Cl SO4	Specific Conductance (E120.1)	pH (SM4500H+B)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						3x250 mL poly	250 ml Poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
1	N024185 - 01	SW-2-Q217	5/10/2017	1430		X		X					X	X					m	5	P	BNS	
2	- 02	AB1-Q217	5/10/2017	1005			X												m	1	P	BN	
3	- 03	AB2-Q217	5/10/2017	1235			X												m	1	P	BN	

Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/17 1620
Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/17 1620
Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/17 1923
Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/1923

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3.00PM.

Special Instruction:

Terms
1 All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2 Regular TAT is 5-7 business days, surcharges will apply for rush analysis.
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3 Custom EDD formats will be an additional 5% of the total project price.
4 Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5 Trip Blanks and Equipment Blanks are billable sample.
6 Asset Laboratories is not responsible for samples collected using incorrect methodology.
7 Terms are net 30 days.
8 All reports are submitted as electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9 For subcontract analysis, TAT and Surcharges will vary.

Preservatives:				Container Type:		
H=HCL	N=HNO3	S=H2SO4	C=4°C	T=Tube	V=VOA	P=Pint
Z=Zn(AC)2	O=NaOH	T=Na2S2O3		J=Jar	B=Tedlar	G=Glass
Others/Specify	B	(NH4)2SO4/NH4OH		M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/10/2017 Workorder: N024185

Rep sample Temp (Deg C): 1.1/1.8/2.7 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for pH was past holding time upon receipt.

For:

Checklist Completed By: MBC 5/19/2017 Reviewed By: MBC 5/19/2017

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024185

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024185-001A	SW-2-Q217	5/10/2017 2:30:00 PM	5/24/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024185-001B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024185-001C			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
N024185-002A	AB1-Q217	5/10/2017 10:05:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024185-003A	AB2-Q217	5/10/2017 12:35:00 PM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024185-004A	FOLDER	5/24/2017	5/24/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/24/2017		Folder	Folder	☐	☐	☐	LAB
			5/24/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N024185

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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May 24, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024185

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 10, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucan for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024185

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *24-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024185
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024185-001A	SW-2-Q217	Groundwater	5/10/2017 2:30:00 PM	5/10/2017	5/24/2017
N024185-001B	SW-2-Q217	Groundwater	5/10/2017 2:30:00 PM	5/10/2017	5/24/2017
N024185-001C	SW-2-Q217	Groundwater	5/10/2017 2:30:00 PM	5/10/2017	5/24/2017
N024185-002A	AB1-Q217	Groundwater	5/10/2017 10:05:00 AM	5/10/2017	5/24/2017
N024185-003A	AB2-Q217	Groundwater	5/10/2017 12:35:00 PM	5/10/2017	5/24/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	SW-2-Q217
Lab Order:	N024185	**Collection Date:**	5/10/2017 2:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024185-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170511B**	QC Batch: **R115153**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	5/11/2017 10:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N024184-001DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115153**
Client ID: **ZZZZZZ**	Batch ID: **R115153**	TestNo: **EPA 120.1**		Analysis Date: **5/11/2017**	SeqNo: **2640298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	932.000	0.10						925.0	0.754	10	

Sample ID **N024184-014CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115153**
Client ID: **ZZZZZZ**	Batch ID: **R115153**	TestNo: **EPA 120.1**		Analysis Date: **5/11/2017**	SeqNo: **2640319**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1032.000	0.10						1026	0.583	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024185
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024185-001

Client Sample ID: SW-2-Q217
Collection Date: 5/10/2017 2:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170511A**	QC Batch: **R115152**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	5/11/2017 09:35 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	5/11/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024184-001DDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **115152**
Client ID: **ZZZZZZ** Batch ID: **R115152** TestNo: **SM4500-H+B** Analysis Date: **5/11/2017** SeqNo: **2640268**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.320	0.10						8.280	0.482	10	H
Temp. at time of pH Analysis	16.100	0.10						16.40	1.85	10	H

Sample ID **N024185-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **115152**
Client ID: **ZZZZZZ** Batch ID: **R115152** TestNo: **SM4500-H+B** Analysis Date: **5/11/2017** SeqNo: **2640283**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.630	0.10						7.600	0.394	10	H
Temp. at time of pH Analysis	16.400	0.10						16.70	1.81	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024185
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024185-001

Client Sample ID: SW-2-Q217
Collection Date: 5/10/2017 2:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170511B** QC Batch: **R115198**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/11/2017 06:47 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170513D** QC Batch: **62184**				PrepDate	**5/11/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/13/2017 05:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB1-Q217
Lab Order:	N024185	**Collection Date:**	5/10/2017 10:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024185-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170511B**	QC Batch: **R115198**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/11/2017 07:06 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB2-Q217
Lab Order:	N024185	**Collection Date:**	5/10/2017 12:35:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024185-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170511B**	QC Batch: **R115198**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/11/2017 07:44 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **LCS-R115198**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **LCSW**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.102	0.20	5.000	0	102	90	110				

Sample ID **MB-R115198**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **PBW**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **N024182-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	576.195	10	250.0	317.4	103	90	110				

Sample ID **N024182-006AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	570.365	10	250.0	317.4	101	90	110	576.2	1.02	20	

Sample ID **N024182-005ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	14.328	0.20						14.51	1.28	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024185-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115198
Client ID:	ZZZZZZ	Batch ID:	R115198	TestNo:	EPA 218.6			Analysis Date:	5/11/2017	SeqNo:	2642253

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.062	0.20	1.000	0	106	90	110				

Sample ID	N024185-002AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115198
Client ID:	ZZZZZZ	Batch ID:	R115198	TestNo:	EPA 218.6			Analysis Date:	5/11/2017	SeqNo:	2642257

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.020	0.20	1.000	0	102	90	110				

Sample ID	N024185-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115198
Client ID:	ZZZZZZ	Batch ID:	R115198	TestNo:	EPA 218.6			Analysis Date:	5/11/2017	SeqNo:	2642259

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.998	0.20	1.000	0	99.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62184	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	PBW	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645021

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62184	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	LCSW	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645022

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.071	1.0	10.00	0	90.7	85	115				

Sample ID	N024160-013B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645031

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.830	1.0	10.00	2.099	87.3	75	125				

Sample ID	N024160-013B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/11/2017	RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	62184	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/13/2017	SeqNo:	2645032

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.672	1.0	10.00	2.099	85.7	75	125	10.83	1.47	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us:
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State.
Address: Roseville, CA 95661	Email: [illegible]	Address	Sample Receipt Condition: 1 Chilled ✓; 2 Headspace; 3 Container Intact ✓; 4 Seal Present; 5 IR number 2; 6 Method of Cooling: ICE
Phone: 916-786-3302 / Fax	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com / P.O #	Sample Temp: 1.1, 1.8, 2.7 °C
Submitted By: Jason Mahn	Phone: 916-786-3302 / Fax:	Phone: 949-727-1400, ext 200 / Fax:	Courier: ASSET
Title: Project Manager	Sampled By: Jason Mahn		Tracking No:
Signature: [signature] Date: 5/10/17	Signature: [signature] Date: 5/10/17		
Project Name: PG&E Topock - RMP			
Project Number: RC000753.0801			

I hereby authorize ASSET Labs to perform the tests indicated below

I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.

Matrix: Ground x; Potable; NPDES; Surface; Sediment; Soil; Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Field QC Cr(VI) FF (E218.6) (NH4)2 SO4 NH4 OH	Dissolved metals (SW6010B/SW6020A dis) FF: HNO3 Cr	Dissolved metals (SW6010B/SW6020A dis) FF: HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020A dis) FF: HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B): HNO3 Fe	Anions (E300.0): Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500H+B)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500NO3) Nitrate, H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						3x250 mL poly	250 ml Poly	500 mL poly	500 mL poly	500 mL poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly					
1	N024185 - 01	SW-2-Q217	5/10/2017	1430		X		X					X	X					m	5	P	BNS	
2	- 02	AB1-Q217	5/10/2017	1005			X												m	1	P	BN	
3	- 03	AB2-Q217	5/10/2017	1235			X												m	1	P	BN	

Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/17 1620
Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/17 1619
Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/17 0923
Relinquished by (Signature and Printed Name): [signature] Date/Time: 5/10/1723

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3.00PM.

Special Instruction:

Terms
1 All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report
2 Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs =200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3 Custom EDD formats will be an additional 3% of the total project price
4 Add 10% surcharge for Level III Data Packages 15% for Level IV Data Packages. Surcharge applied on total project price

5 Trip Blanks and Equipment Blanks are billable sample
6 Asset Laboratories is not responsible for samples collected using incorrect methodology
7 Terms are net 30 days
8 All reports are submitted as electronic format. Please inform ASSET Laboratories if hard copy of report is needed
9 For subcontract analysis, TAT and Surcharges will vary

Preservatives:

H=HCL	N=HNO3	S=H2SO4	C=4°C	
Z=Zn(AC)2	O=NaOH	T=Na2S2O3		
Others/Specify	B	(NH4)2SO4/NH4OH		

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On: 5/10/2017 Workorder: N024185

Rep sample Temp (Deg C): 1.1/1.8/2.7 IR Gun ID: 2

Temp Blank: ☑ Yes ☐ No

Carrier name: ASSET

Last 4 digits of Tracking No.: NA Packing Material Used: None

Cooling process: ☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Sample for pH was past holding time upon receipt.

For:

Checklist Completed By: MBC 5/19/2017 Reviewed By: MBC 5/19/2017

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024185

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/10/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024185-001A	SW-2-Q217	5/10/2017 2:30:00 PM	5/24/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024185-001B			5/24/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/24/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024185-001C			5/24/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/24/2017		SM4500-H+B	pH	☐	☐	☐	WW
N024185-002A	AB1-Q217	5/10/2017 10:05:00 AM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024185-003A	AB2-Q217	5/10/2017 12:35:00 PM	5/24/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024185-004A	FOLDER	5/24/2017	5/24/2017		EDD	RWQCB	☐	☐	☐	LAB
			5/24/2017		Folder	Folder	☐	☐	☐	LAB
			5/24/2017		Folder	Folder	☐	☐	☐	LAB

List of Analyst

ASSET Laboratories Work Order: **N024185**

NAME	TEST METHOD
Claire Ignacio	EPA 6020
Ria Abes	EPA 218.6
Lilia Ramit	EPA 120.1, SM 4500-H+B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115153 **Analyst:** LSR

ASSET #: N024185 **Date Analyzed:** 5/11/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/11/2017

2nd Level Reviewer: 5/24/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Conductivity Logbook

Date: 5/11/17 1010

Analyst: LSR

CONT

Standard	Std ID	Reading	Comments
TH: 9.76 mS/cm	CINV-170303A	9.72 mS/cm @ 21.6°C	% Rec: (90-110%)
1413	161214B	1407 @ 21.8°C	
10003	170329A	9940 @ 21.8°C	
99582	170329C	99100 @ 21.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO24184-011D	H2O	953 @ 20.7°C	
2	12D		940 @ 19.7°C	
3	13D	LSR	937 @ 19.6°C	
4	14D C		1026 @ 19.0°C	
5	NO24185-001C		970 @ 18.5°C	
6	NO24184-14C DUP		1032 @ 18.5°C	
7				
8				Julia Ramit 5/11/2017
9	1413 mS/cm	CINV-170125F	1416 @ 20.8°C	
10	10000	170125E	10310 @ 21.3°C	
Dup	99899	161104A	100400 @ 21.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: _____

Analyst: _____

Standard	Std ID	Reading	Comments
			% Rec: (90-110%)

	Sample ID	Matrix	Reading	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115152 **Instrument ID:** pH meter

ASSET #: N024185 **Analyst:** LSR

Date Analyzed: 11-May

Method: EPA 150.1

pH Meter Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silvia Ramit Date: 5/11/2017

2nd Level Reviewer: 5/24/2017 Date: ____

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 5/11/17 935

Analyst: LSR CONT

Standard	Std ID	pH	Comments
Buffer 7	CINV - 170125C	7.00 @ 21.5C	SLOPE: 96.8%
Buffer 4	170125D	4.02 @ 21.6C	
Buffer 10	170131A	10.05 @ 21.4C	

	Sample ID	Matrix	pH	Comments
1	NO24124-011D	H2O	8.28 @ 17.1C	
2	12D		8.24 @ 16.8C	
3	13D		8.30 @ 17.0C	
4	14BC		7.51 @ 16.2C	
5	NO24185-001C		7.60 @ 16.7C	
6	1C DUP		7.63 @ 16.4C	
7				
8				
9				Julia Ramit 5/11/2017
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CINV - 170125D	6.99 @ 20.8C	Accept: +/-0.1 pH units from expected value

Date: _____

Analyst: _____

Standard	Std ID	pH	Comments
Buffer 7			
Buffer 4			
Buffer 10			

	Sample ID	Matrix	pH	Comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)			Accept: +/-0.1 pH units from expected value

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115198
ASSET #: N024185

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/11/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/16/2017

2nd Level Reviewer: 5/24/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N024185-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.00$$

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

rba 5/16/2017

ANALYSIS RUN LOG

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005A	SAMP	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-1,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-1,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-2,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-2,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-3,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-3,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,10
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-4,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-4,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	~~N023912-005AMS,MS~~	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL N023912-005A,SAMP,1
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-5,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-5,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170511A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/11/17 9:08 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/11/17 9:19 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/11/17 9:28 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/11/17 9:37 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/11/17 9:47 AM	Reported
17	MB-R115197	MBLK	1	Hexavalent Chromium	05/11/17 9:56 AM	Reported
18	LCS-R115197	LCS	1	Hexavalent Chromium	05/11/17 10:06 AM	Reported
19	N024167-001A	SAMP	50	Hexavalent Chromium	05/11/17 10:18 AM	Reported
20	N024167-002A	SAMP	20	Hexavalent Chromium	05/11/17 10:30 AM	Reported
21	N024167-003A	SAMP	5	Hexavalent Chromium	05/11/17 10:39 AM	Reported
22	N024167-004A	SAMP	1	Hexavalent Chromium	05/11/17 10:49 AM	Reported
23	N024167-005A	SAMP	5	Hexavalent Chromium	05/11/17 10:58 AM	Reported
24	N024167-006A	SAMP	1	Hexavalent Chromium	05/11/17 11:08 AM	Reported
25	N024167-007A	SAMP	1	Hexavalent Chromium	05/11/17 11:17 AM	Reported
26	N024167-008A	SAMP	1	Hexavalent Chromium	05/11/17 11:27 AM	Not Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/11/17 11:36 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/11/17 11:46 AM	Reported
29	N024167-009A	SAMP	50	Hexavalent Chromium	05/11/17 11:55 AM	Reported
30	N024167-010A	SAMP	50	Hexavalent Chromium	05/11/17 12:04 PM	Reported
31	N024167-011A	SAMP	50	Hexavalent Chromium	05/11/17 12:14 PM	Reported
32	N024167-012A	SAMP	100	Hexavalent Chromium	05/11/17 12:23 PM	Reported
33	N024167-013A	SAMP	20	Hexavalent Chromium	05/11/17 12:33 PM	Reported
34	N024167-014A	SAMP	100	Hexavalent Chromium	05/11/17 12:42 PM	Reported
35	N024167-015A	SAMP	20	Hexavalent Chromium	05/11/17 12:52 PM	Reported
36	N024167-016A	SAMP	1	Hexavalent Chromium	05/11/17 1:01 PM	Not Reported
37	N024167-017A	SAMP	1	Hexavalent Chromium	05/11/17 1:11 PM	Reported
38	N024167-008A	SAMP	2	Hexavalent Chromium	05/11/17 1:20 PM	Not Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/11/17 1:30 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/11/17 1:39 PM	Reported
41	N024167-016A	SAMP	2	Hexavalent Chromium	05/11/17 1:49 PM	Reported
42	N024167-004A	SAMP	1	Hexavalent Chromium	05/11/17 1:58 PM	Reported

INJECTION LOG: 170511A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024160-015A	SAMP	50	Hexavalent Chromium	05/11/17 2:07 PM	Reported
44	N024160-015AMS	MS	50	Hexavalent Chromium	05/11/17 2:17 PM	Reported
45	N024160-015AMSD	MSD	50	Hexavalent Chromium	05/11/17 2:26 PM	Reported
46	N024160-016A	SAMP	50	Hexavalent Chromium	05/11/17 2:36 PM	Reported
47	N024160-016ADUP	DUP	50	Hexavalent Chromium	05/11/17 2:45 PM	Reported
48	N024167-001AMS	MS	50	Hexavalent Chromium	05/11/17 2:55 PM	Reported
49	N024053-001A	SAMP	1	Hexavalent Chromium	05/11/17 3:04 PM	Not Reported
50	N024053-001AMS	MS	1	Hexavalent Chromium	05/11/17 3:14 PM	Not Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/11/17 3:23 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/11/17 3:33 PM	Reported
53	N024167-008A	SAMP	2	Hexavalent Chromium	05/11/17 3:42 PM	Reported
54	LCS-R115198	LCS	1	Hexavalent Chromium	05/11/17 3:55 PM	Reported
55	MB-R115198	MBLK	1	Hexavalent Chromium	05/11/17 4:06 PM	Reported
56	N024182-006A	SAMP	50	Hexavalent Chromium	05/11/17 4:15 PM	Reported
57	N024182-005A	SAMP	1	Hexavalent Chromium	05/11/17 4:25 PM	Reported
58	N024182-006AMS	MS	50	Hexavalent Chromium	05/11/17 4:34 PM	Reported
59	N024182-006AMSD	MSD	50	Hexavalent Chromium	05/11/17 4:44 PM	Reported
60	N024182-005ADUP	DUP	1	Hexavalent Chromium	05/11/17 4:53 PM	Reported
61	N024182-001A	SAMP	1	Hexavalent Chromium	05/11/17 5:03 PM	Reported
62	N024182-002A	SAMP	5	Hexavalent Chromium	05/11/17 5:12 PM	Reported
63	CCV-5	CCV	1	Hexavalent Chromium	05/11/17 5:22 PM	Reported
64	CCB-5	CCB	1	Hexavalent Chromium	05/11/17 5:31 PM	Reported
65	N024182-004A	SAMP	2	Hexavalent Chromium	05/11/17 5:41 PM	Reported
66	N024182-007A	SAMP	20	Hexavalent Chromium	05/11/17 5:50 PM	Reported
67	N024182-008A	SAMP	100	Hexavalent Chromium	05/11/17 5:59 PM	Reported
68	N024182-011A	SAMP	20	Hexavalent Chromium	05/11/17 6:09 PM	Reported
69	N024182-012A	SAMP	5	Hexavalent Chromium	05/11/17 6:18 PM	Reported
70	N024182-013A	SAMP	1	Hexavalent Chromium	05/11/17 6:28 PM	Reported
71	N024182-014A	SAMP	1	Hexavalent Chromium	05/11/17 6:37 PM	Reported
72	N024185-001A	SAMP	1	Hexavalent Chromium	05/11/17 6:47 PM	Reported
73	N024185-001AMS	MS	1	Hexavalent Chromium	05/11/17 6:56 PM	Reported
74	N024185-002A	SAMP	1	Hexavalent Chromium	05/11/17 7:06 PM	Reported
75	CCV-6	CCV1	1	Hexavalent Chromium	05/11/17 7:15 PM	Reported
76	CCB-6	CCB	1	Hexavalent Chromium	05/11/17 7:25 PM	Reported
77	N024185-002AMS	MS	1	Hexavalent Chromium	05/11/17 7:34 PM	Reported
78	N024185-003A	SAMP	1	Hexavalent Chromium	05/11/17 7:44 PM	Reported
79	N024185-003AMS	MS	1	Hexavalent Chromium	05/11/17 7:53 PM	Reported
80	N024182-003A	SAMP	1	Hexavalent Chromium	05/11/17 8:02 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	05/11/17 8:12 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	05/11/17 8:21 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170511A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/May/17 20:52:11**
No. of Injections:	**85**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/11/2017 09:08	Finished	
13	BLANK	2	1000	Unknown		05/11/2017 09:19	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/11/2017 09:28	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/11/2017 09:37	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/11/2017 09:47	Finished	CCB R170428A
17	MB-H2O,MBLK,1	6	1000	Unknown		05/11/2017 09:56	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/11/2017 10:06	Finished	LCS, IWST-170330B
19	N024167-001A,SAMF	8	1000	Unknown		05/11/2017 10:18	Finished	SAMP, 0.2>10mL
20	N024167-002A,SAMF	9	1000	Unknown		05/11/2017 10:30	Finished	SAMP, 0.5>10mL
21	N024167-003A,SAMF	10	1000	Unknown		05/11/2017 10:39	Finished	SAMP, 2>10mL
22	N024167-004A,SAMF	11	1000	Unknown		05/11/2017 10:49	Finished	SAMP, 10mL
23	N024167-005A,SAMF	12	1000	Unknown		05/11/2017 10:58	Finished	SAMP, 2>10mL
24	N024167-006A,SAMF	13	1000	Unknown		05/11/2017 11:08	Finished	SAMP, 10mL
25	N024167-007A,SAMF	14	1000	Unknown		05/11/2017 11:17	Finished	SAMP, 10mL
26	N024167-008A,SAMF	15	1000	Unknown		05/11/2017 11:27	Finished	SAMP, 10mL
27	CCV-2,CCV1,1,	16	1000	Unknown		05/11/2017 11:36	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	17	1000	Unknown		05/11/2017 11:46	Finished	CCB R170419B
29	N024167-009A,SAMF	18	1000	Unknown		05/11/2017 11:55	Finished	SAMP, 0.2>10mL
30	N024167-010A,SAMF	19	1000	Unknown		05/11/2017 12:04	Finished	SAMP, 0.2>10mL
31	N024167-011A,SAMF	20	1000	Unknown		05/11/2017 12:14	Finished	SAMP, 0.2>10mL
32	N024167-012A,SAMF	21	1000	Unknown		05/11/2017 12:23	Finished	SAMP, 0.1>10mL
33	N024167-013A,SAMF	22	1000	Unknown		05/11/2017 12:33	Finished	SAMP, 0.5>10mL
34	N024167-014A,SAMF	23	1000	Unknown		05/11/2017 12:42	Finished	SAMP, 0.1>10mL
35	N024167-015A,SAMF	24	1000	Unknown		05/11/2017 12:52	Finished	SAMP, 0.5>10mL
36	N024167-016A,SAMF	25	1000	Unknown		05/11/2017 13:01	Finished	SAMP, 10mL
37	N024167-017A,SAMF	26	1000	Unknown		05/11/2017 13:11	Finished	SAMP, 10mL
38	N024167-008A,SAMF	27	1000	Unknown		05/11/2017 13:20	Finished	SAMP, 5>10mL
39	CCV-3,CCV,1,	28	1000	Unknown		05/11/2017 13:30	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	29	1000	Unknown		05/11/2017 13:39	Finished	CCB R170419B
41	N024167-016A,SAMF	30	1000	Unknown		05/11/2017 13:49	Finished	SAMP, 5>10mL
42	N024167-004A,SAMF	31	1000	Unknown		05/11/2017 13:58	Finished	SAMP, 10mL
43	N024160-015A,SAMF	32	1000	Unknown		05/11/2017 14:07	Finished	SAMP, 0.2>10mL
44	N024160-015AMS,MS	33	1000	Unknown		05/11/2017 14:17	Finished	MS (5ppb), IWST-170330B,0.2
45	N024160-015AMSD,M	34	1000	Unknown		05/11/2017 14:26	Finished	MSD (5ppb), IWST-170330B,0.
46	N024160-016A,SAMF	35	1000	Unknown		05/11/2017 14:36	Finished	SAMP, 0.2>10mL
47	N024160-016ADUP,D	36	1000	Unknown		05/11/2017 14:45	Finished	DUP, 0.2>10mL
48	N024167-001AMS,MS	37	1000	Unknown		05/11/2017 14:55	Finished	MS (5ppb), IWST-170330B,0.2
49	N024053-001A,SAMF	38	1000	Unknown		05/11/2017 15:04	Finished	SAMP, 10mL
50	N024053-001AMS,MS	39	1000	Unknown		05/11/2017 15:14	Finished	MS (1ppb), IWST-170330B,0.2
51	CCV-4,CCV1,1,	40	1000	Unknown		05/11/2017 15:23	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	41	1000	Unknown		05/11/2017 15:33	Finished	CCB R170419B
53	N024167-008A,SAMF	42	1000	Unknown		05/11/2017 15:42	Finished	SAMP, 5>10mL
54	LCS-2,LCS,1	1	1000	Unknown		05/11/2017 15:55	Finished	LCS, IWST-170330B
55	MB-2,MBLK,1	2	1000	Unknown		05/11/2017 16:06	Finished	MB R170414A
56	N024182-006A,SAMF	3	1000	Unknown		05/11/2017 16:15	Finished	SAMP,0.2>10mL
57	N024182-005A,SAMF	4	1000	Unknown		05/11/2017 16:25	Finished	SAMP, 10mL
58	N024182-006AMS,MS	5	1000	Unknown		05/11/2017 16:34	Finished	MS (5ppb), IWST-170330B,0.2
59	N024182-006AMSD,M	6	1000	Unknown		05/11/2017 16:44	Finished	MSD (5ppb), IWST-170330B,0.
60	N024182-005ADUP,D	7	1000	Unknown		05/11/2017 16:53	Finished	MS (5ppb), IWST-170330B,0.2

61	N024182-001A,SAMP	8	1000	Unknown		05/11/2017 17:03	Finished	SAMP, 10mL
62	N024182-002A,SAMP	9	1000	Unknown		05/11/2017 17:12	Finished	SAMP,2>10mL
63	CCV-5,CCV,1,	10	1000	Unknown		05/11/2017 17:22	Finished	CCV @5ppb, IWST-170330B
64	CCB-5,CCB,1,	11	1000	Unknown		05/11/2017 17:31	Finished	CCB R170414A
65	N024182-004A,SAMP	12	1000	Unknown		05/11/2017 17:41	Finished	SAMP,5>10mL
66	N024182-007A,SAMP	13	1000	Unknown		05/11/2017 17:50	Finished	SAMP,0.5>10mL
67	N024182-008A,SAMP	14	1000	Unknown		05/11/2017 17:59	Finished	SAMP,0.1>10mL
68	N024182-011A,SAMP	15	1000	Unknown		05/11/2017 18:09	Finished	SAMP,0.5>10mL
69	N024182-012A,SAMP	16	1000	Unknown		05/11/2017 18:18	Finished	SAMP,2> 10mL
70	N024182-013A,SAMP	17	1000	Unknown		05/11/2017 18:28	Finished	SAMP, 10mL
71	N024182-014A,SAMP	18	1000	Unknown		05/11/2017 18:37	Finished	SAMP, 10mL
72	N024185-001A,SAMP	19	1000	Unknown		05/11/2017 18:47	Finished	SAMP, 10mL
73	N024185-001AMS,MS	20	1000	Unknown		05/11/2017 18:56	Finished	MS (1ppb), IWST-170330B,0.2
74	N024185-002A,SAMP	21	1000	Unknown		05/11/2017 19:06	Finished	SAMP, 10mL
75	CCV-6,CCV1,1,	22	1000	Unknown		05/11/2017 19:15	Finished	CCV @10ppb, IWST-170330B
76	CCB-6,CCB,1,	23	1000	Unknown		05/11/2017 19:25	Finished	CCB R170414A
77	N024185-002AMS,MS	24	1000	Unknown		05/11/2017 19:34	Finished	MS (1ppb), IWST-170330B,0.2
78	N024185-003A,SAMP	25	1000	Unknown		05/11/2017 19:44	Finished	SAMP, 10mL
79	N024185-003AMS,MS	26	1000	Unknown		05/11/2017 19:53	Finished	MS (1ppb), IWST-170330B,0.2
80	N024182-003A,SAMP	27	1000	Unknown		05/11/2017 20:02	Finished	MS (1ppb), IWST-170330B,0.2
81	CCV-7,CCV,1,	28	1000	Unknown		05/11/2017 20:12	Finished	CCV @5ppb, IWST-170330B
82	CCB-7,CCB,1,	29	1000	Unknown		05/11/2017 20:21	Finished	CCB R170428A
83	SHUTDOWN	30	1000	Unknown		05/11/2017 20:31	Finished	
84	Eluent: R170508C	31	1000	Unknown		n.a.	Finished	Eluent
85	PCR: R170511A	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 5/11/17
Time Prepared: 1102H
Prepared By: RBA / MG

slope - 97.7%
pH4 - 9.02 @ 20.1°C
pH7 - 7.01 @ 20.2°C
pH10 - 10.05 @ 20.1°C
LCS - 0.96 @ 22.8°C

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CLNV-161228C
NH4OH + NH4SO4 eluent: M170511A
NH4OH + NH4SO4 buffer: M170414A / M170428A

6N NaOH: M170308A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M024182-1A	9.32	-	~250 mL	~250 mL		M170414A
2)	2A	9.15	9.54			+5 drops 6N NaOH	
3)	3A	9.33	-				
4)	4A	9.34	-				
5)	5A	9.31	-				
6)	6A	9.42	-				
7)	7A	9.23	9.51			+4 drops 6N NaOH	
8)	8A	9.24	9.57			"	
9)	11A	9.25	9.58			"	
10)	12A	9.39	-				
11)	13A	9.54	-				
12)	14A	9.48	-				
13)	M024185-1A	9.57	-				1/3 M170428A
14)	1A	9.57	-				2/3
15)	1A	9.49	-				3/3
	2A	9.59	-				

Sample Preparation

Date Prepared: 5/11/17
Time Prepared: 1102H
Prepared By: RBA / MG

CON'T

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CLNV-161228C
NH4OH + NH4SO4 eluent: M170511A / M170511F
NH4OH + NH4SO4 buffer: M170428A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M024185-3A	9.53	-	~20mL	~250 mL		M170428A
2)	M024164-1A	9.54	-				1/3
3)	1A	9.56	-				2/3
4)	1A	9.58	-				3/3
5)	2A	9.57	-				1/3
6)	2A	9.53	-				2/3
7)	2A	9.62	-				3/3
8)	3A	9.59	-				1/3
9)	3A	9.58	-				2/3
10)	3A	9.57	-				3/3
11)	4A	9.53	-				1/3
12)	4A	9.03	-				2/3
13)	4A	9.63	-				3/3
14)	5A	9.60	-				1/3
15)	5A	9.59	-				2/3
	5A	9.42	-				3/3

Logbook No. 12

rba 5/16/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/25/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0537	0.2438	1.2243	2.4380	3.6639	4.8727	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST-170330A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ICV**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2642228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.087	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2642229**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642231**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.201	0.20	0.2000	0	101	80	120				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.021	0.20	10.00	0	100	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **CCV**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.176	0.20	5.000	0	104	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-6**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ZZZZZZ**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	10.147	0.20	10.00	0	101	95	105				

Sample ID **CCV-7**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **CCV**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.125	0.20	5.000	0	103	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **ICB**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2642230**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **CCB**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-5**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **CCB**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-6**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **CCB**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-7**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115198**
Client ID: **CCB**	Batch ID: **R115198**	TestNo: **EPA 218.6**		Analysis Date: **5/11/2017**	SeqNo: **2642262**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.056	
CCV-3	4.140	
CCV-4	4.131	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
Average	4.127	
Actual RT Window	4.047 - 4.207	
Applied RT Window	3.927 - 4.327	
MB-R115197	N.A.	N.A.
LCS-R115197	4.140	PASS
N024167-001A	4.140	PASS
N024167-002A	4.131	PASS
N024167-003A	4.115	PASS
N024167-004A	4.056	PASS
N024167-005A	4.098	PASS
N024167-006A	3.965	PASS
N024167-007A	N.A.	N.A.
N024167-008A	3.765	FAIL
N024167-009A	4.056	PASS
N024167-010A	4.098	PASS
N024167-011A	4.115	PASS
N024167-012A	4.123	PASS
N024167-013A	4.123	PASS
N024167-014A	4.131	PASS
N024167-015A	4.131	PASS
N024167-016A	3.815	FAIL
N024167-017A	N.A.	N.A.
N024167-008A	3.940	PASS
N024167-016A	4.015	PASS
N024167-004A	4.048	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.056	
CCV-3	4.140	
CCV-4	4.131	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
Average	4.127	
Actual RT Window	4.047 - 4.207	
Applied RT Window	3.927 - 4.327	
N024160-015A	4.123	PASS
N024160-015AMS	4.123	PASS
N024160-015AMSD	4.123	PASS
N024160-016A	4.123	PASS
N024160-016ADUP	4.123	PASS
N024167-001AMS	4.123	PASS
N024053-001A	4.115	PASS
N024053-001AMS	4.123	PASS
N024167-008A	4.015	PASS
LCS-R115198	4.131	PASS
MB-R115198	N.A.	N.A.
N024182-006A	4.140	PASS
N024182-005A	4.131	PASS
N024182-006AMS	4.140	PASS
N024182-006AMSD	4.140	PASS
N024182-005ADUP	4.140	PASS
N024182-001A	4.140	PASS
N024182-002A	4.140	PASS
N024182-004A	4.140	PASS
N024182-007A	4.140	PASS
N024182-008A	4.140	PASS
N024182-011A	4.140	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/11/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.140	
CCV-2	4.056	
CCV-3	4.140	
CCV-4	4.131	
CCV-5	4.140	
CCV-6	4.140	
CCV-7	4.140	
Average	4.127	
Actual RT Window	4.047 - 4.207	
Applied RT Window	3.927 - 4.327	
N024182-012A	4.140	PASS
N024182-013A	N.A.	N.A.
N024182-014A	N.A.	N.A.
N024185-001A	N.A.	N.A.
N024185-001AMS	4.131	PASS
N024185-002A	N.A.	N.A.
N024185-002AMS	4.148	PASS
N024185-003A	N.A.	N.A.
N024185-003AMS	4.140	PASS
N024182-003A	4.131	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6/EPA 7199 Unit: ug/L
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Instrument Name: **IC-06** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA



INITIAL CALIBRATION

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-2,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-2,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-3,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-4,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-4,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,1
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-5,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-5,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

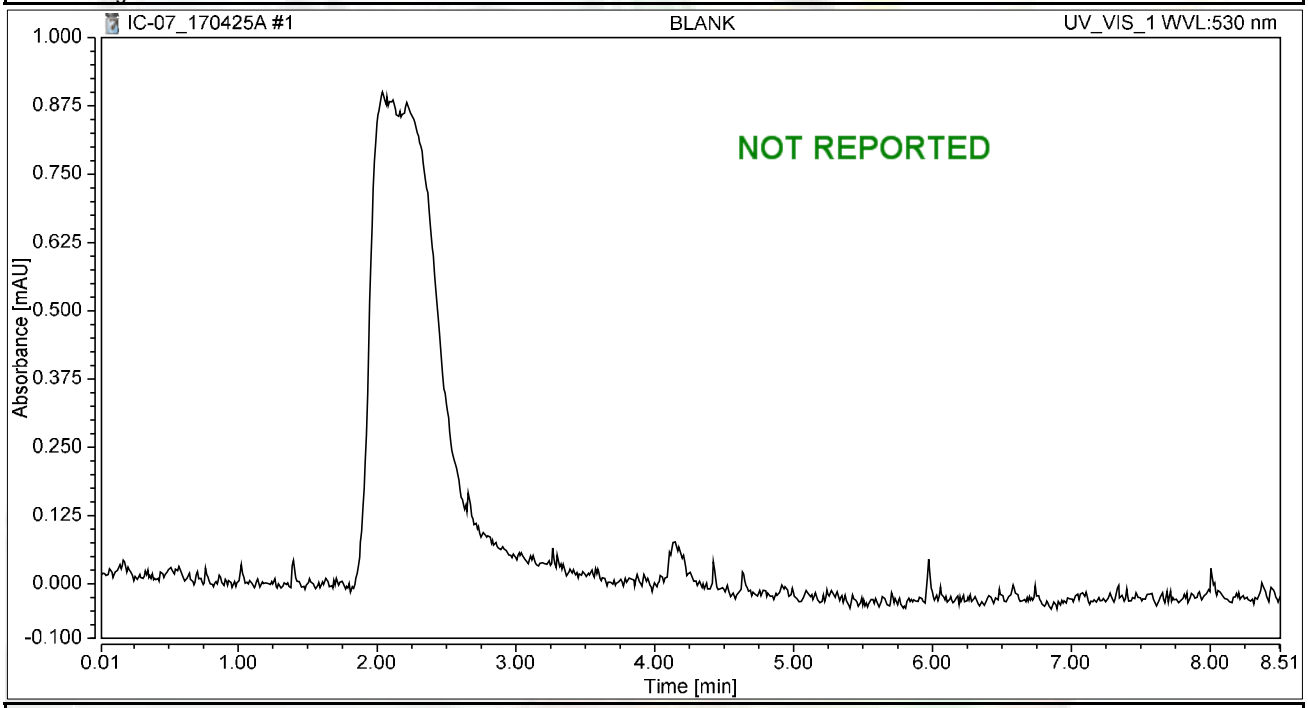
61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	N023912-005AMS,MS	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-6,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-6,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

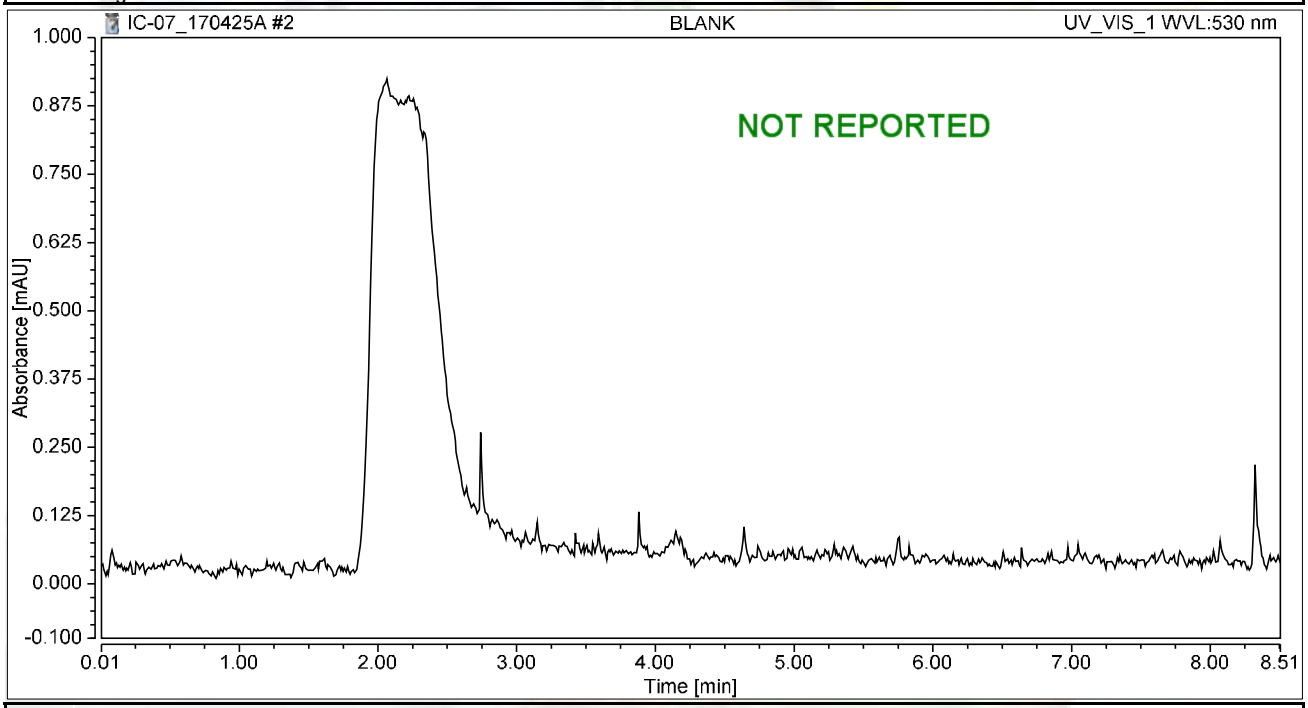
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

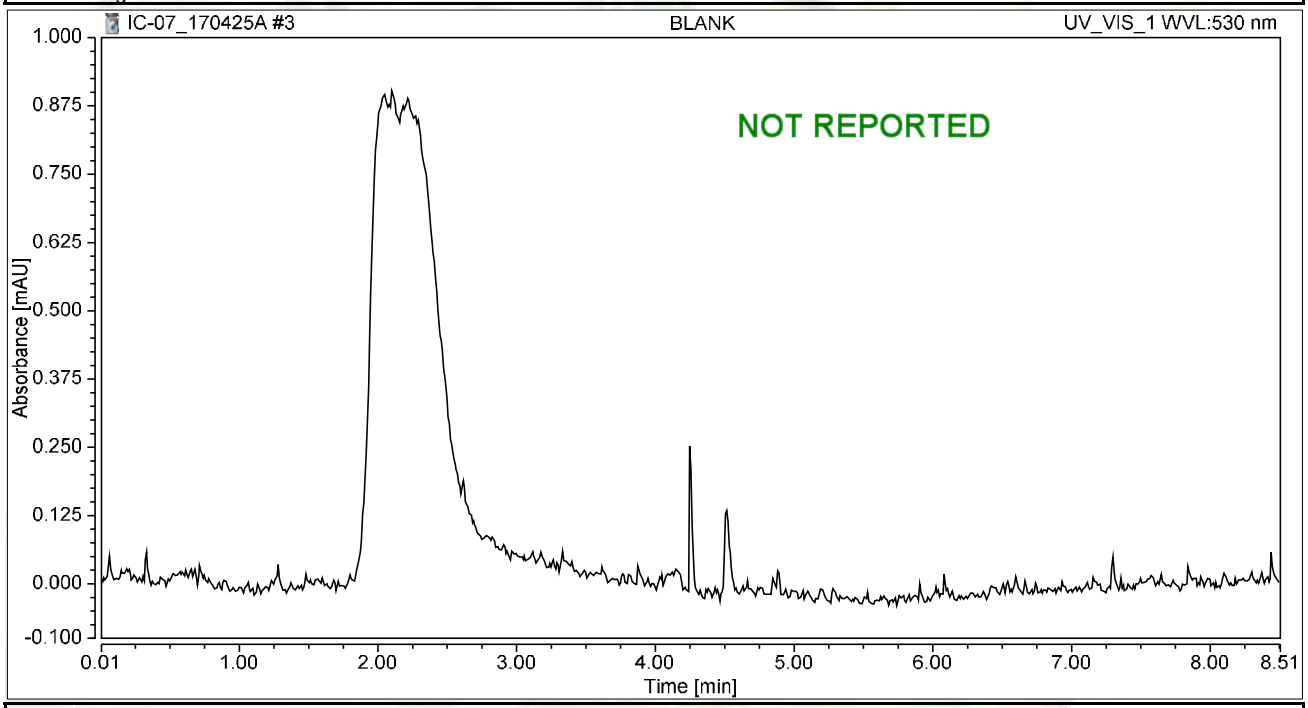
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

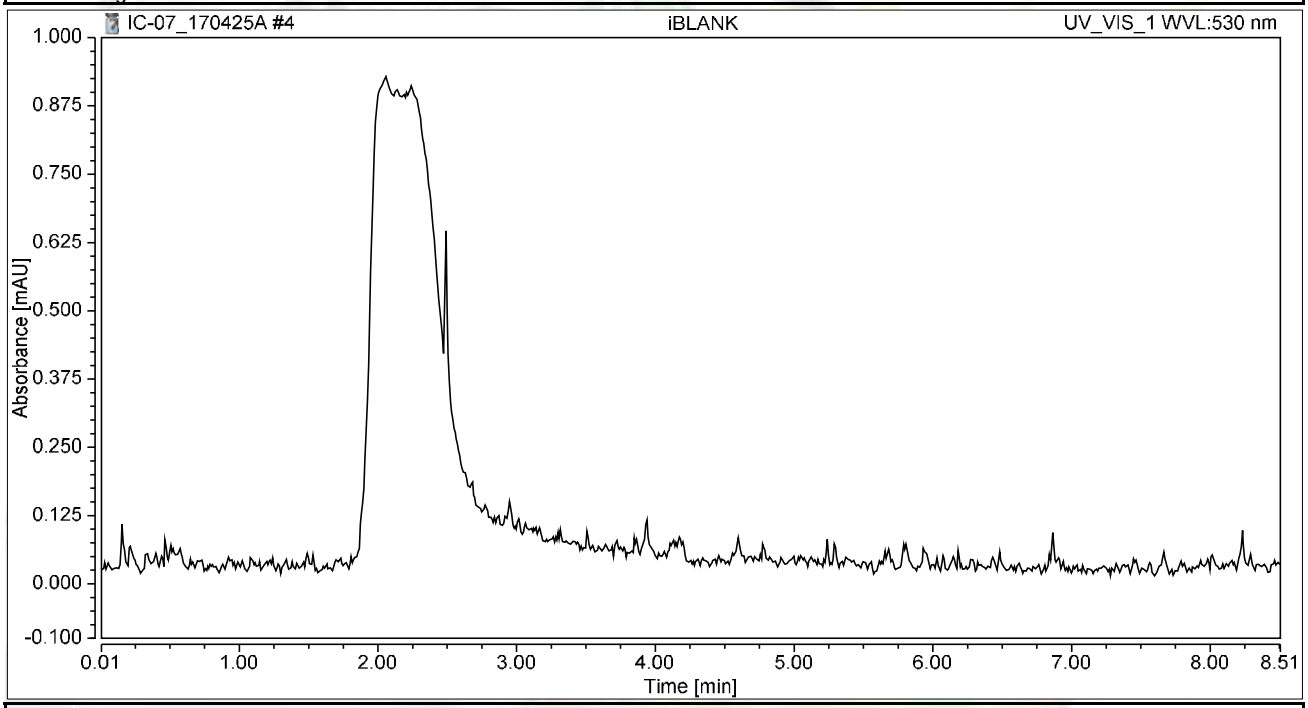
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

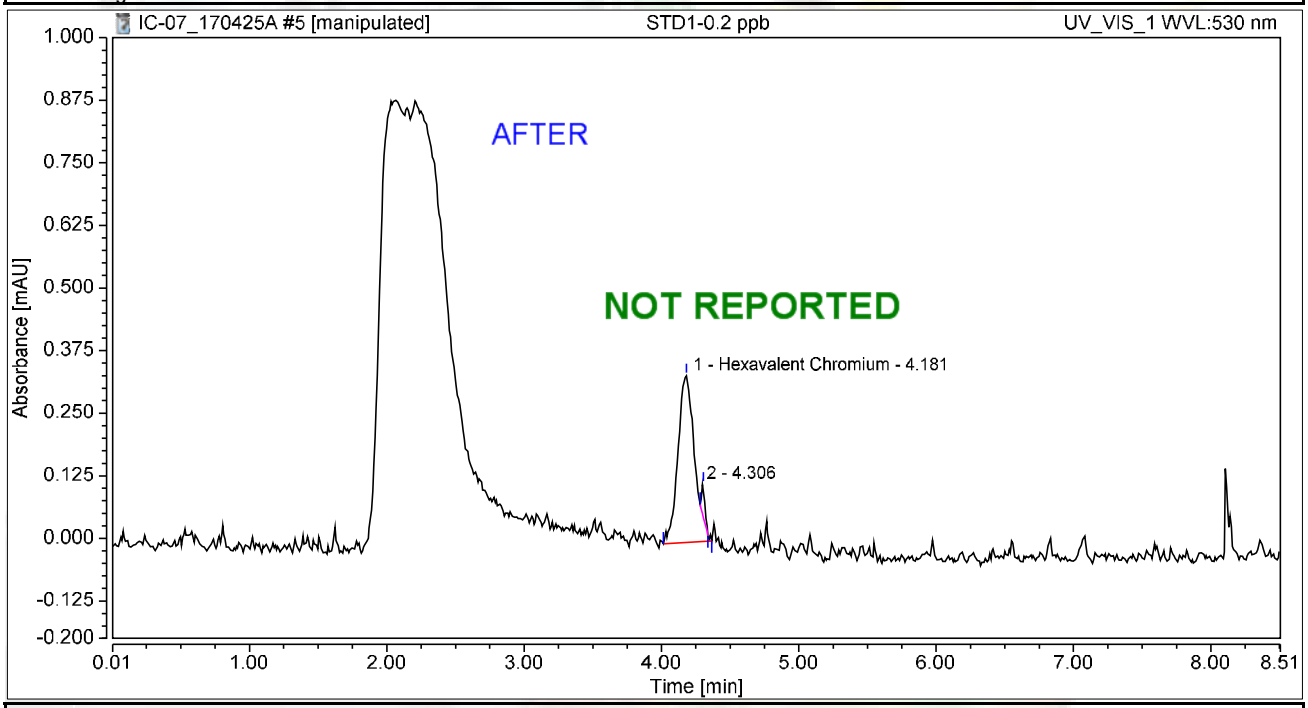
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.046	0.333	96.32	83.12	0.1906
2		4.306	0.002	0.068	3.68	16.88	n.a.
Total:			**0.048**	**0.401**	**100.00**	**100.00**	

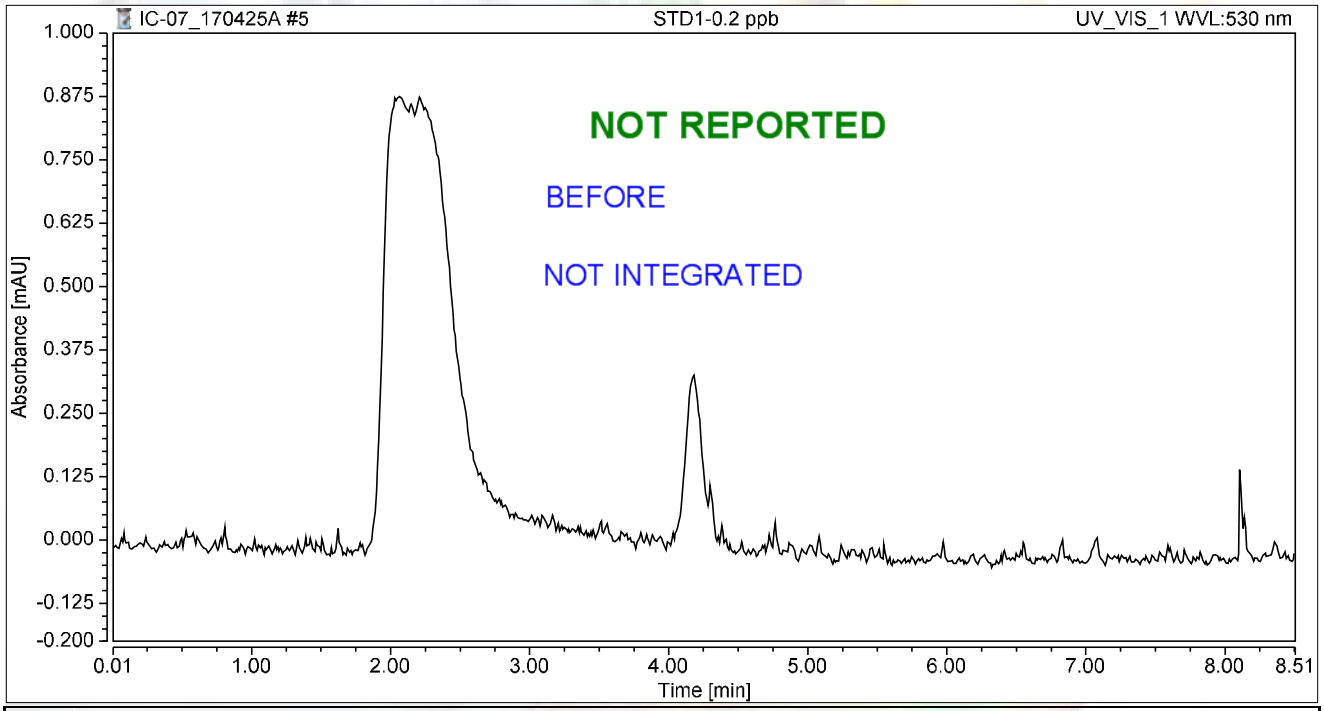
rba 4/30/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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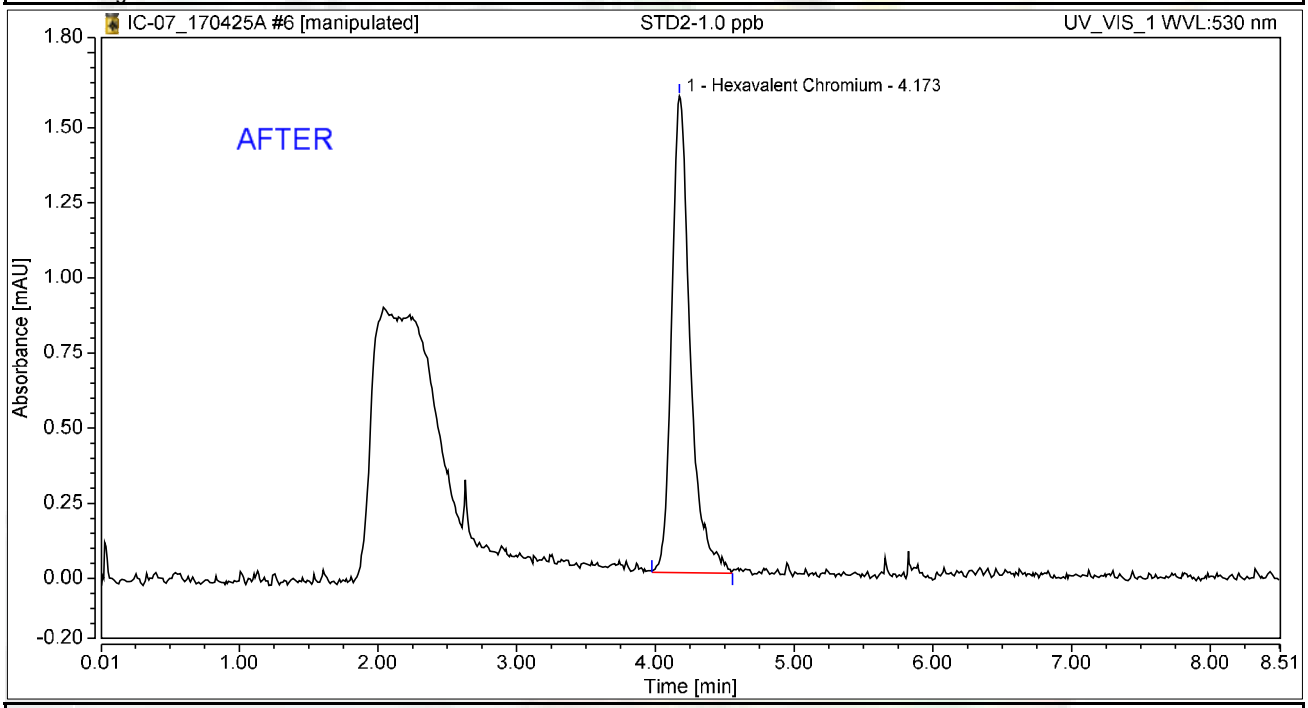
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.244	1.585	100.00	100.00	0.9996
Total:			**0.244**	**1.585**	**100.00**	**100.00**	

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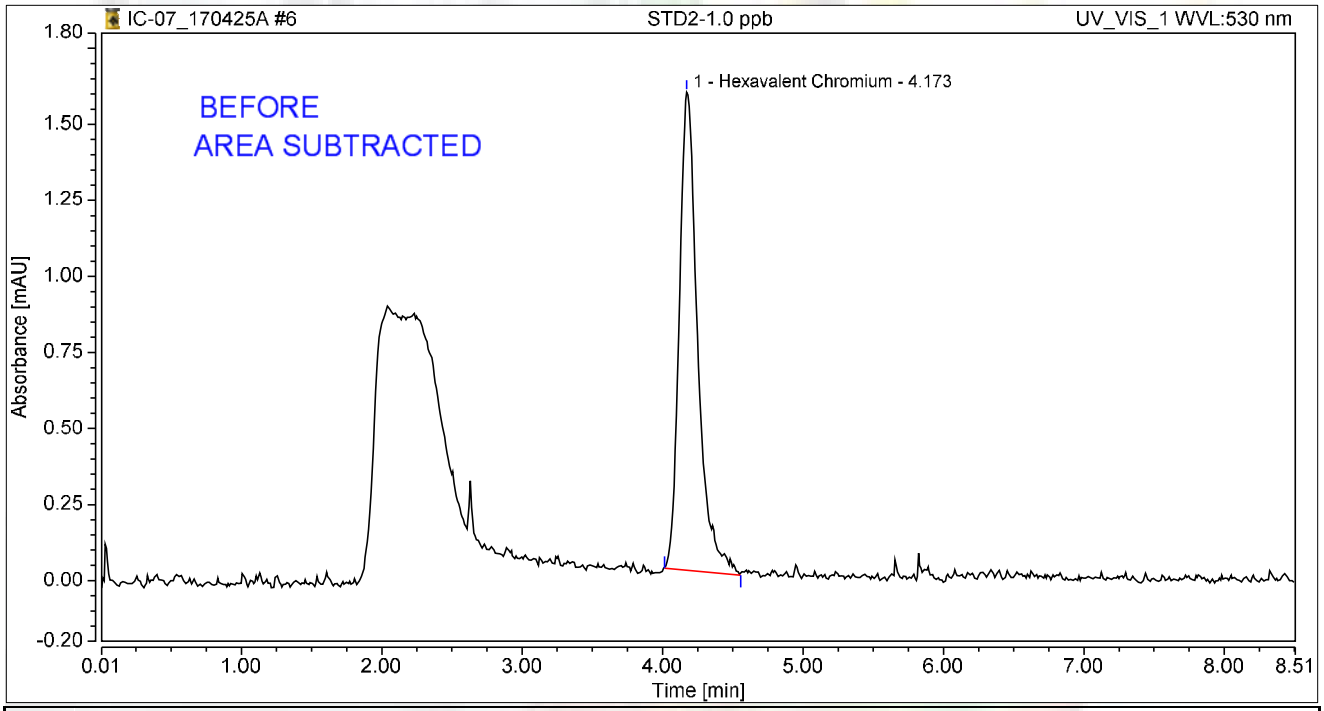
Reviewed by: Nancy 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.238	1.572	100.00	100.00	0.9911
Total:			**0.238**	**1.572**	**100.00**	**100.00**	

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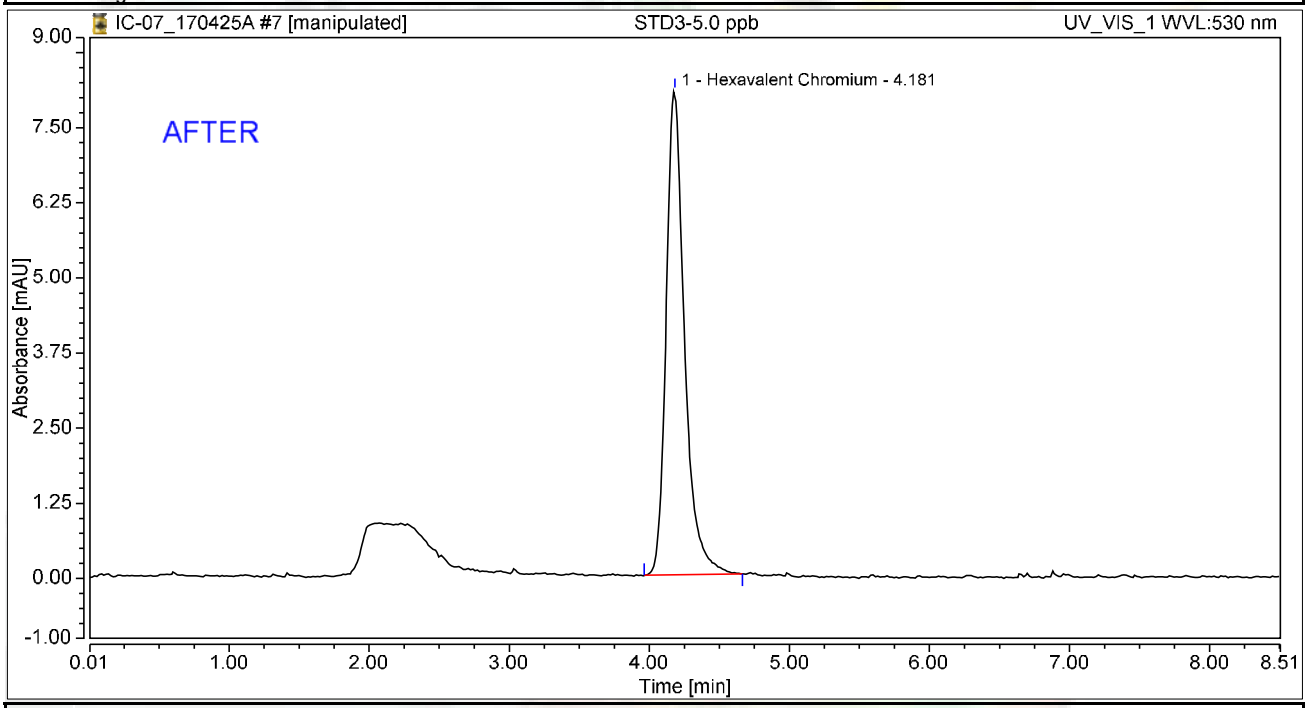
Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.224	8.059	100.00	100.00	5.0198
Total:			**1.224**	**8.059**	**100.00**	**100.00**	

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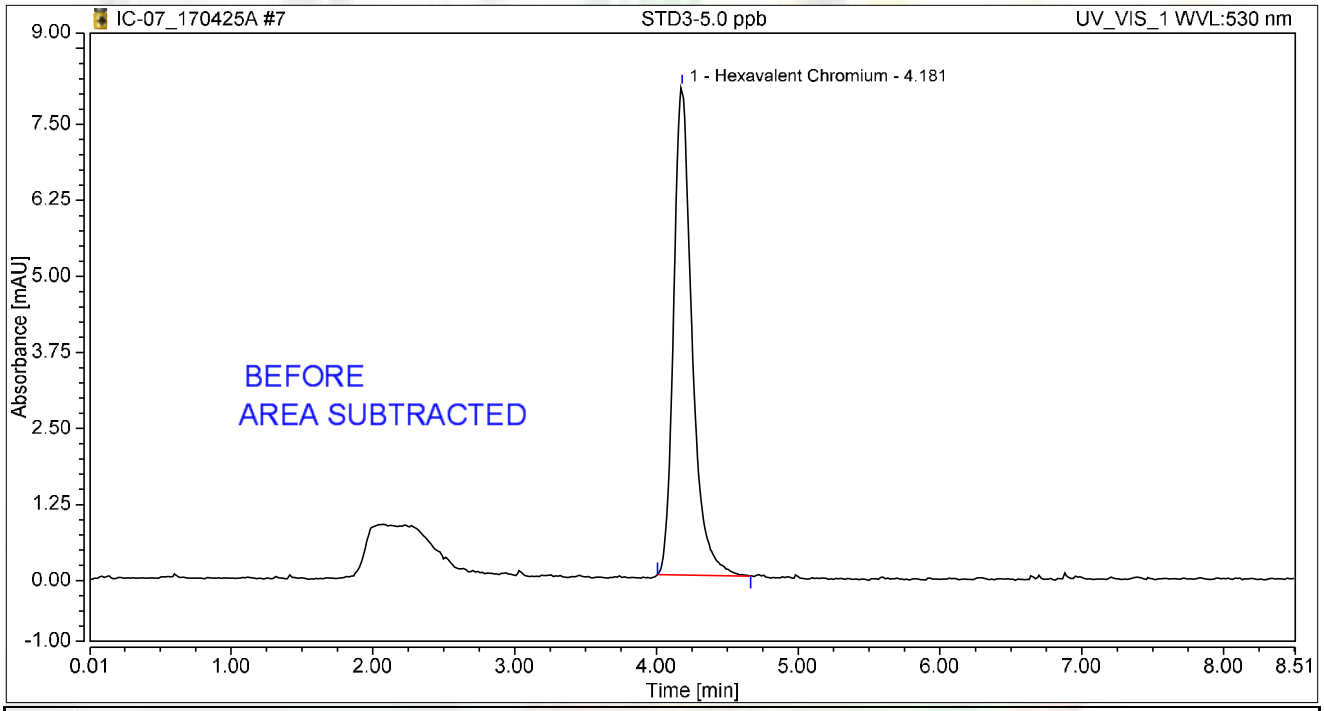
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.209	8.027	100.00	100.00	5.0326
Total:			**1.209**	**8.027**	**100.00**	**100.00**	

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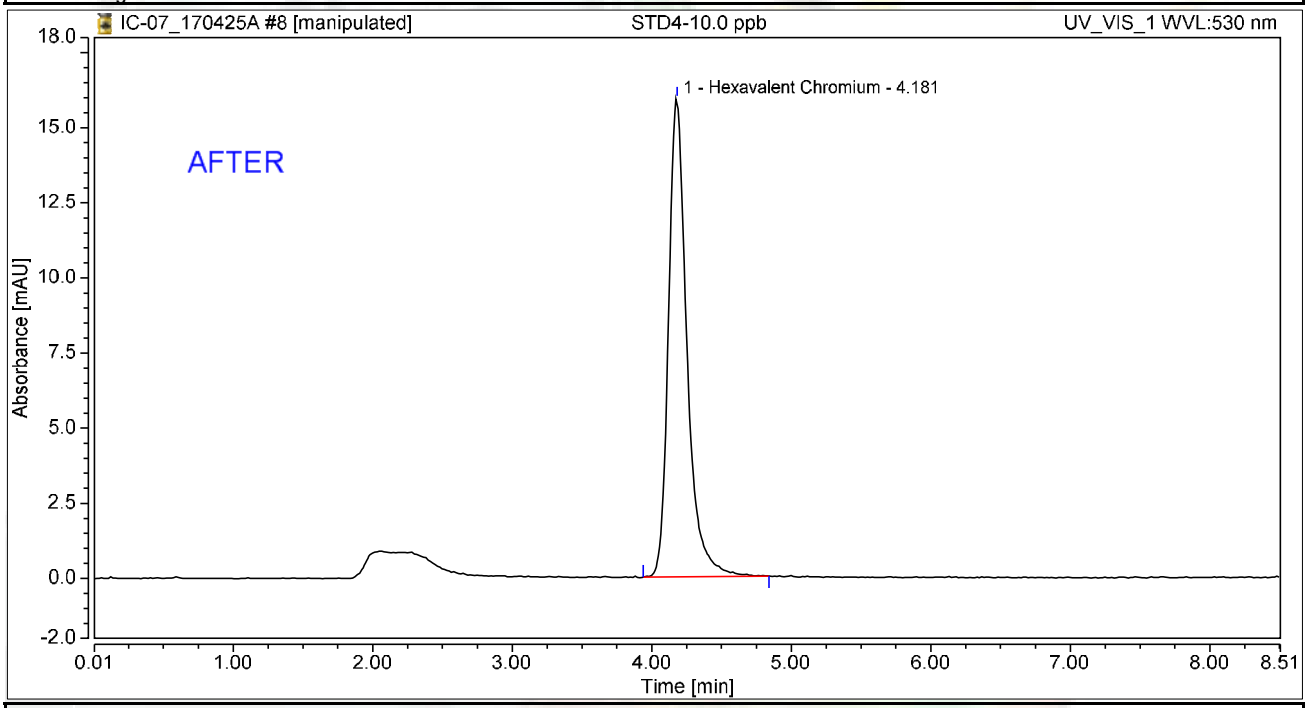
Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.438	15.921	100.00	100.00	9.9965
Total:			**2.438**	**15.921**	**100.00**	**100.00**	

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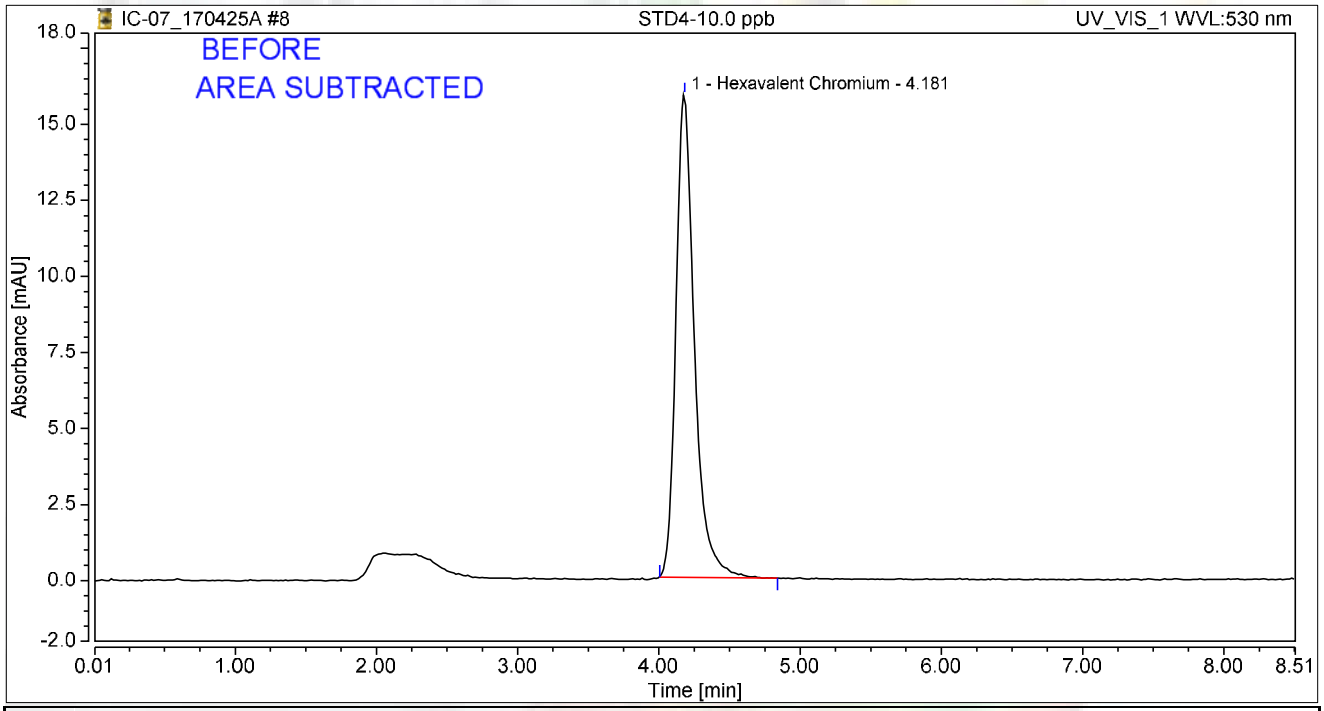
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.407	15.865	100.00	100.00	10.0165
Total:			**2.407**	**15.865**	**100.00**	**100.00**	

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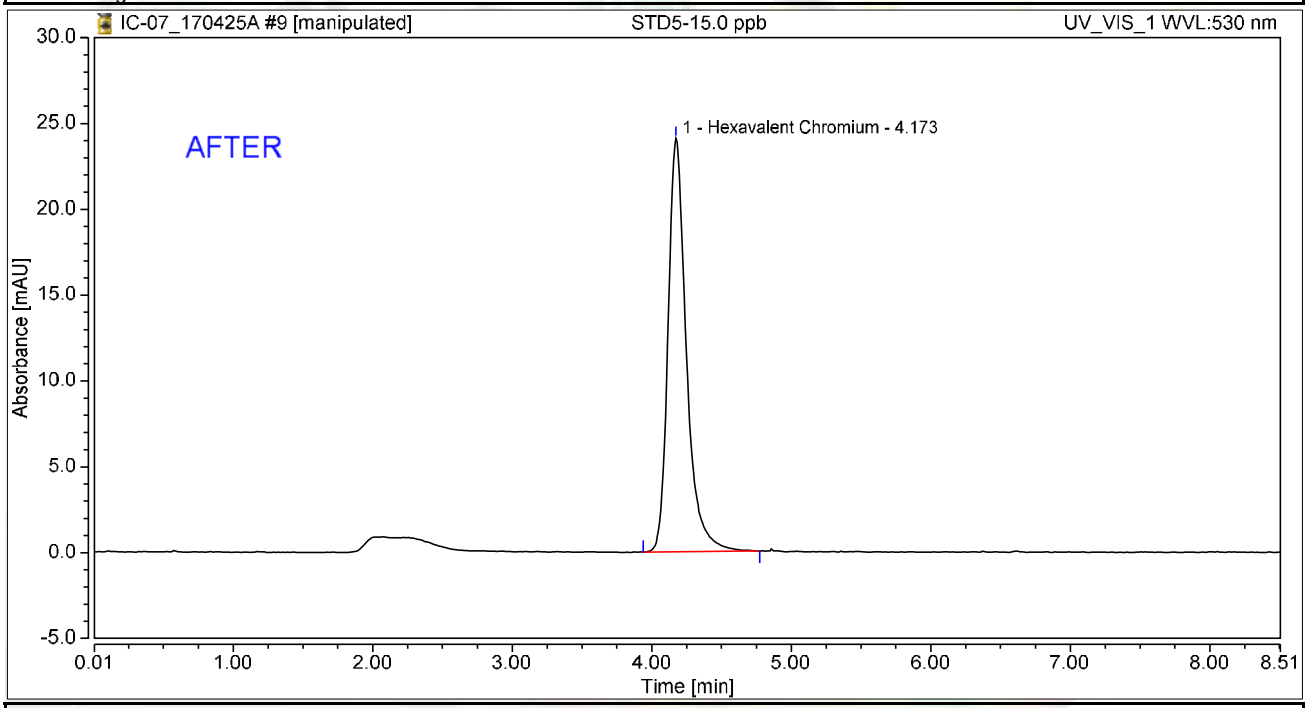
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.664	24.088	100.00	100.00	15.0230
Total:			**3.664**	**24.088**	**100.00**	**100.00**	

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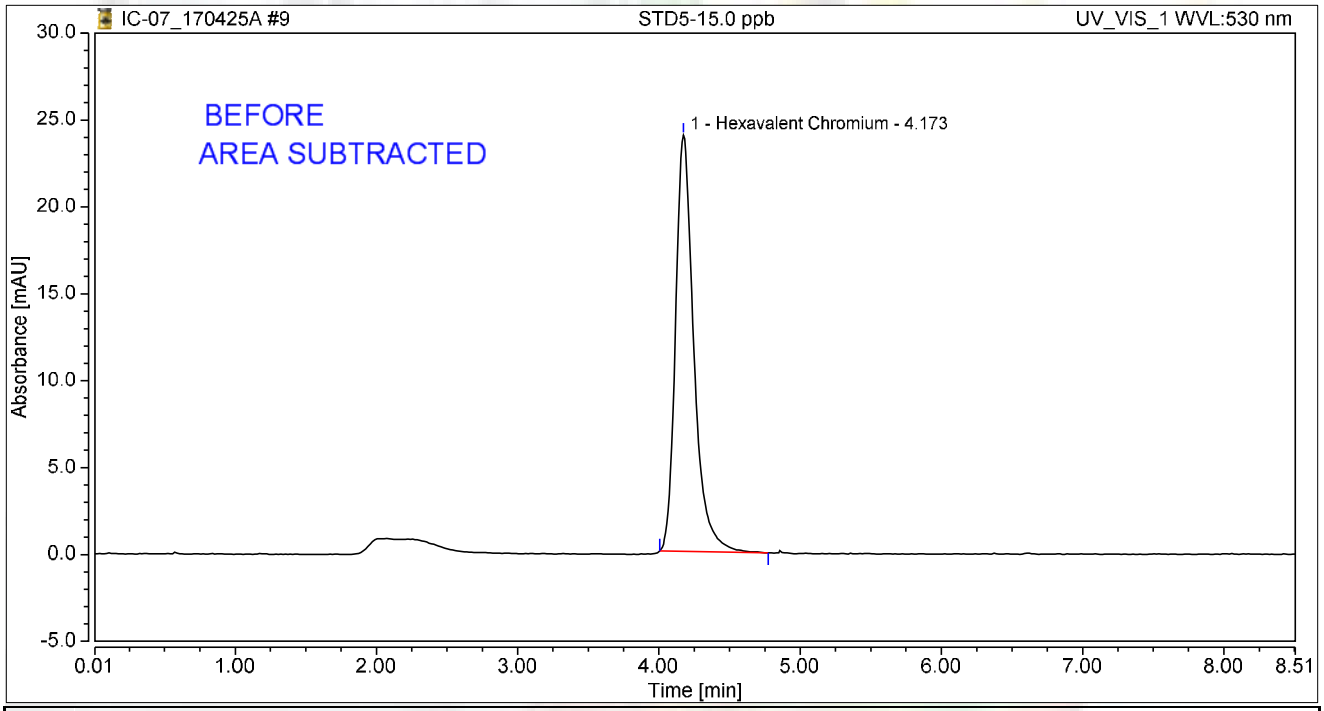
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.597	23.956	100.00	100.00	14.9652
Total:			**3.597**	**23.956**	**100.00**	**100.00**	

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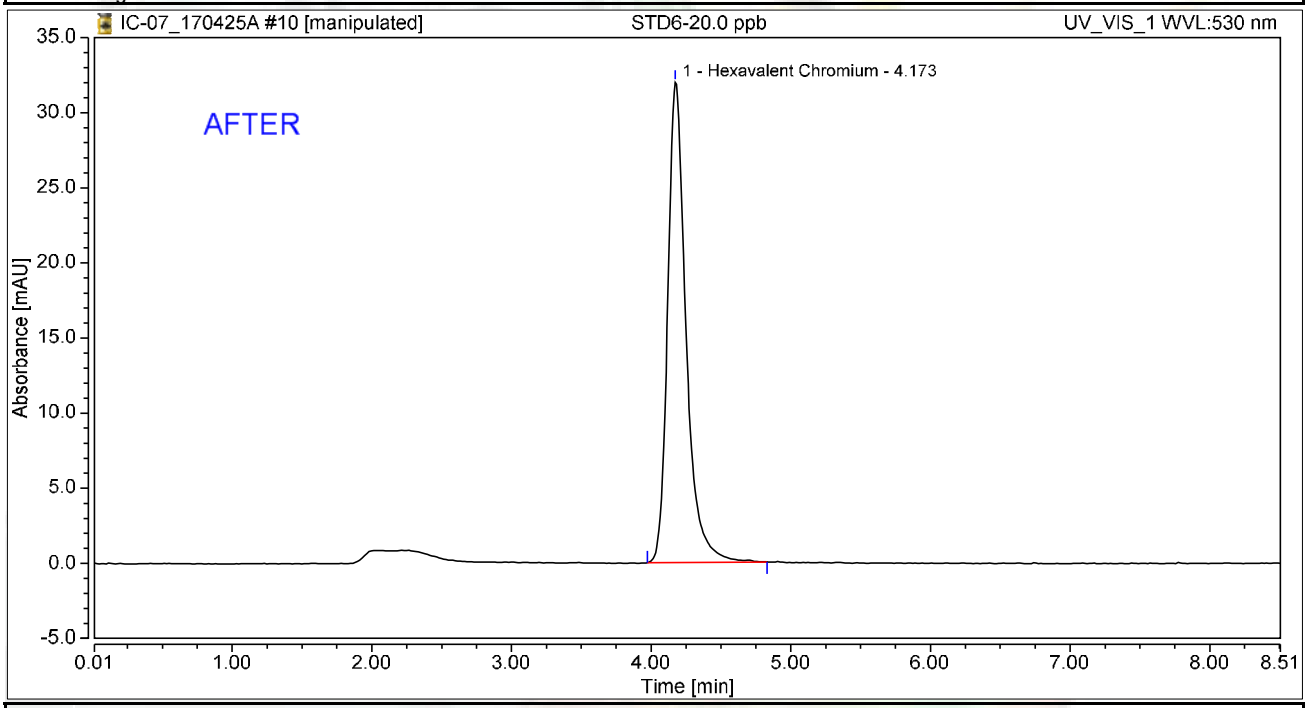
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.873	31.978	100.00	100.00	19.9794
Total:			**4.873**	**31.978**	**100.00**	**100.00**	

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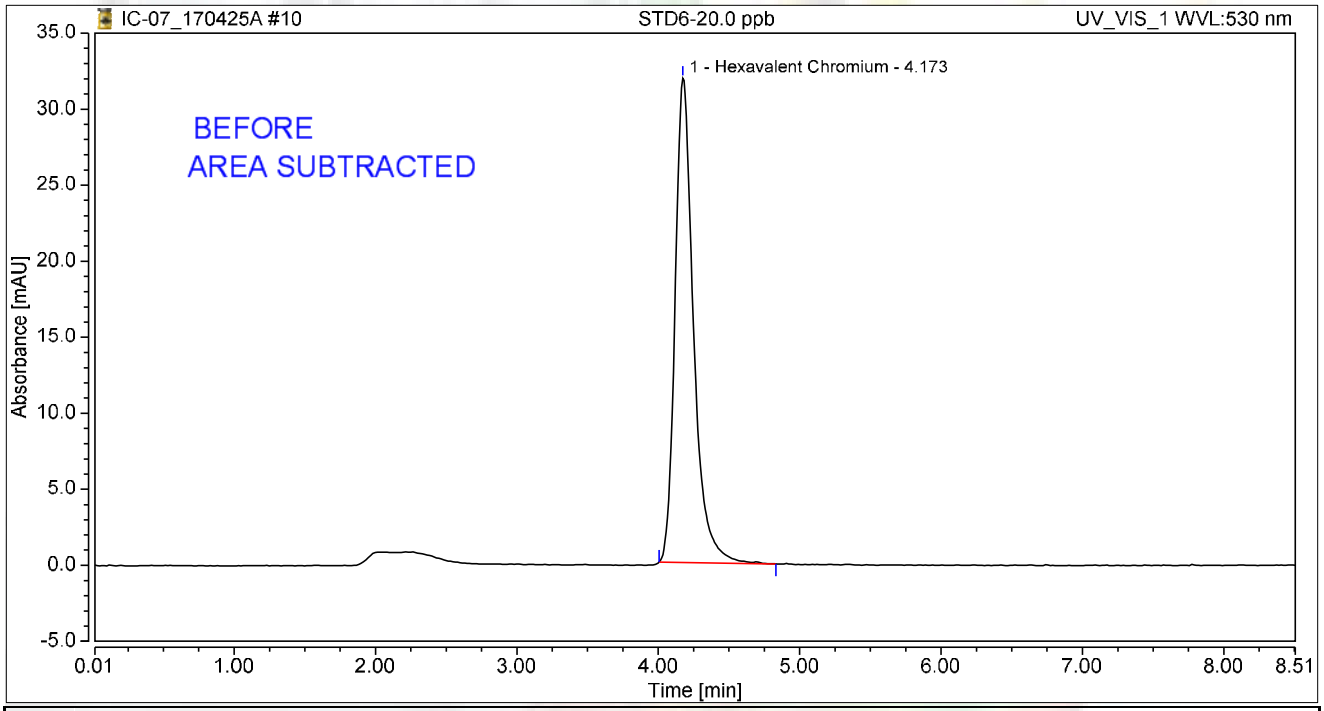
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.809	31.858	100.00	100.00	20.0099
Total:			**4.809**	**31.858**	**100.00**	**100.00**	

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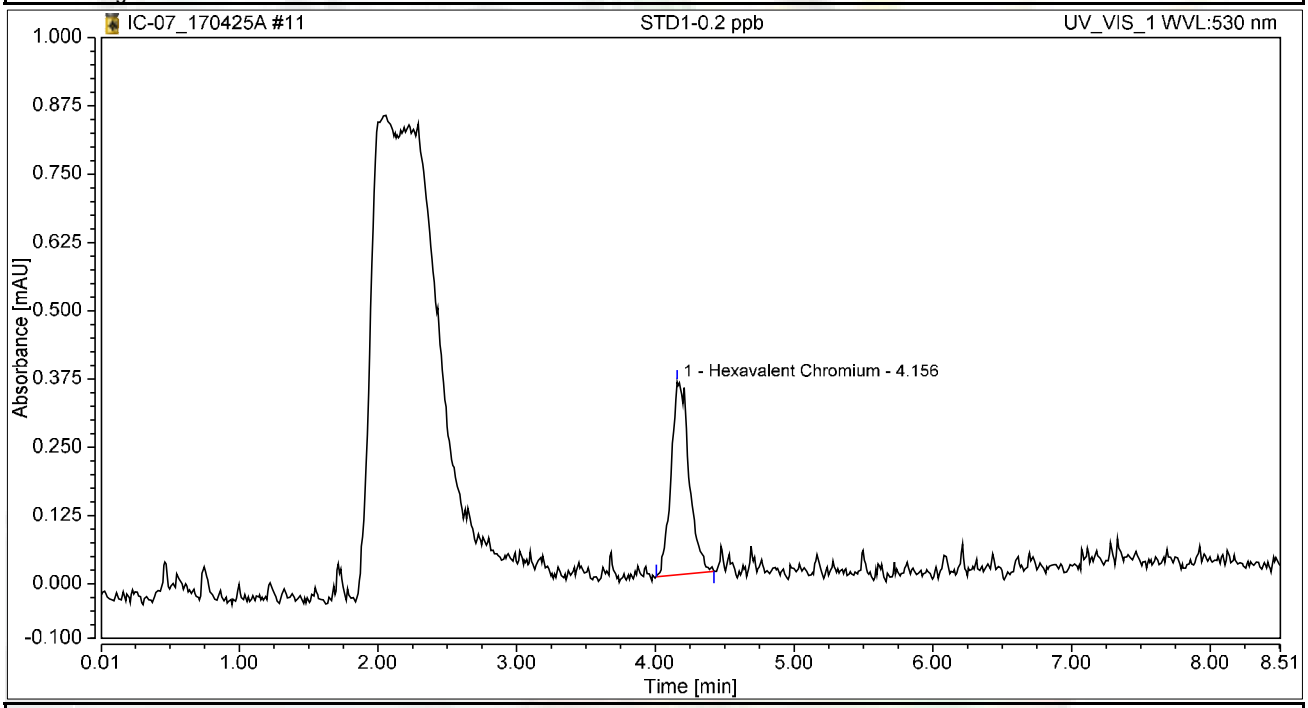
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



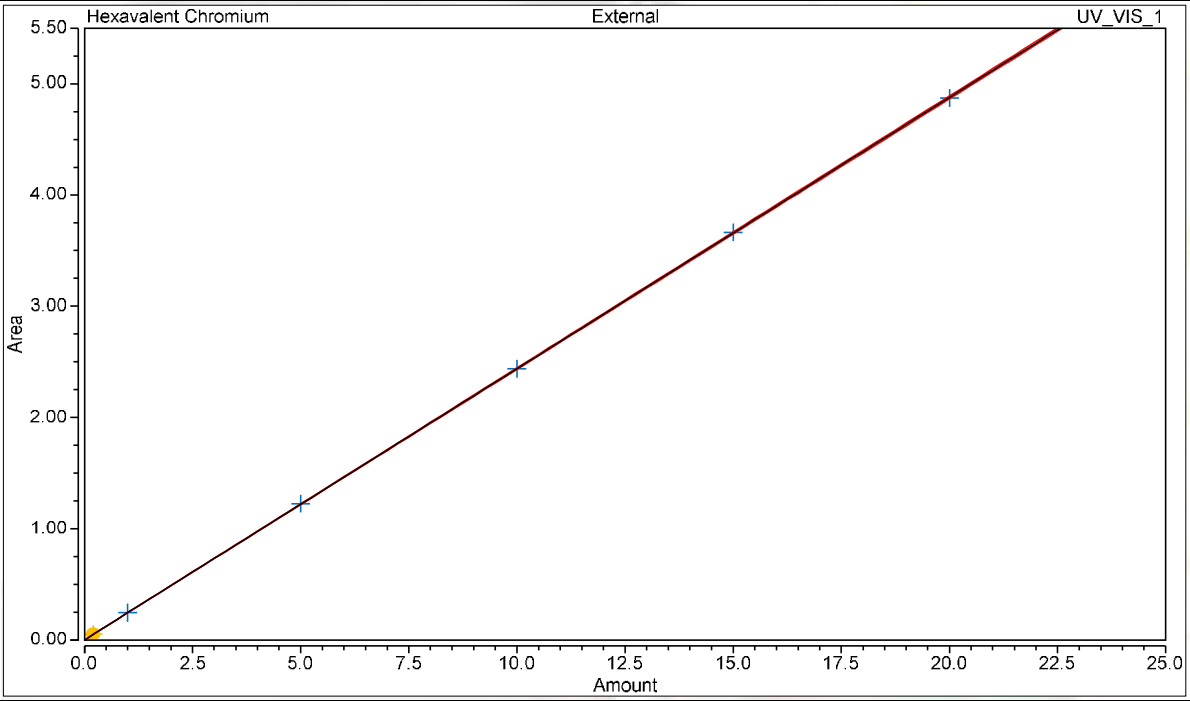
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.054	0.353	100.00	100.00	0.2201
Total:			**0.054**	**0.353**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2439
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99999

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

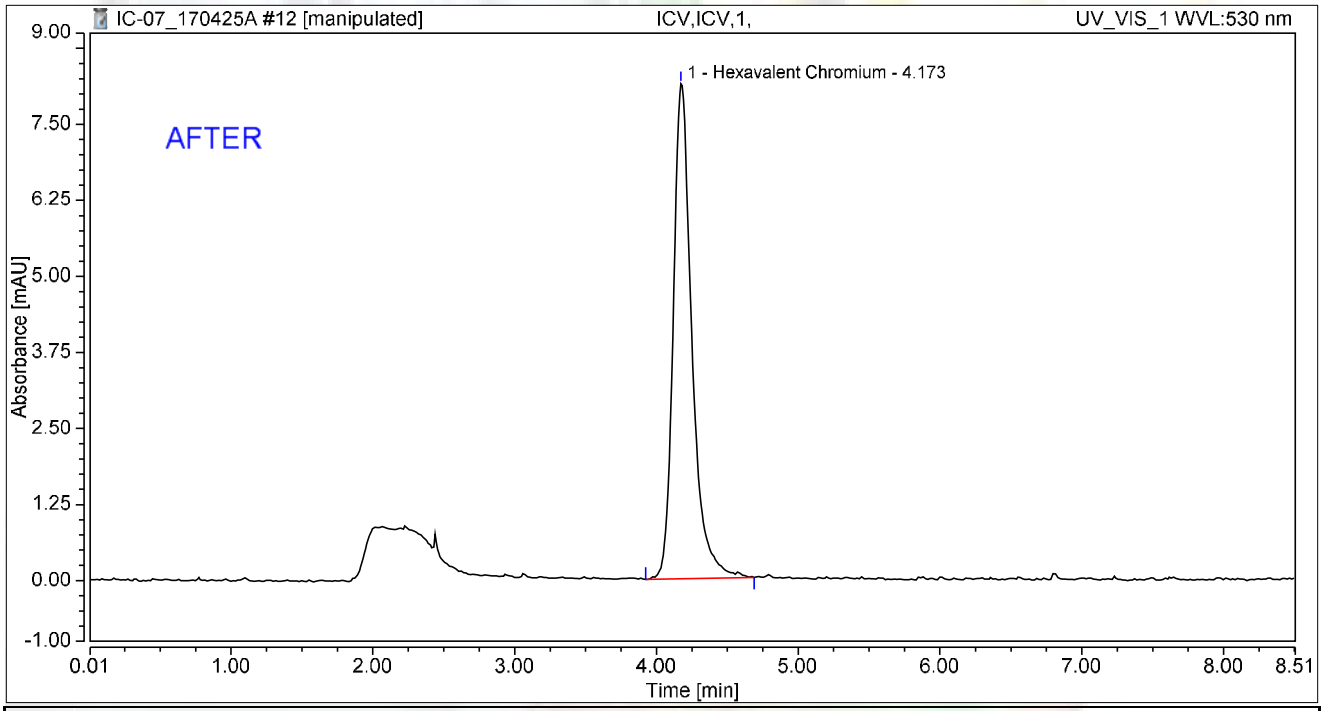
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD2-1.0 ppb	02	1.0000	0.2438	0.244	1.585
7	STD3-5.0 ppb	03	5.0000	1.2243	1.224	8.059
8	STD4-10.0 ppb	04	10.0000	2.4380	2.438	15.921
9	STD5-15.0 ppb	05	15.0000	3.6639	3.664	24.088
10	STD6-20.0 ppb	06	20.0000	4.8727	4.873	31.978
11	STD1-0.2 ppb	01	0.2000	0.0537	0.054	0.353

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.241	8.139	100.00	100.00	5.0868
Total:			**1.241**	**8.139**	**100.00**	**100.00**	

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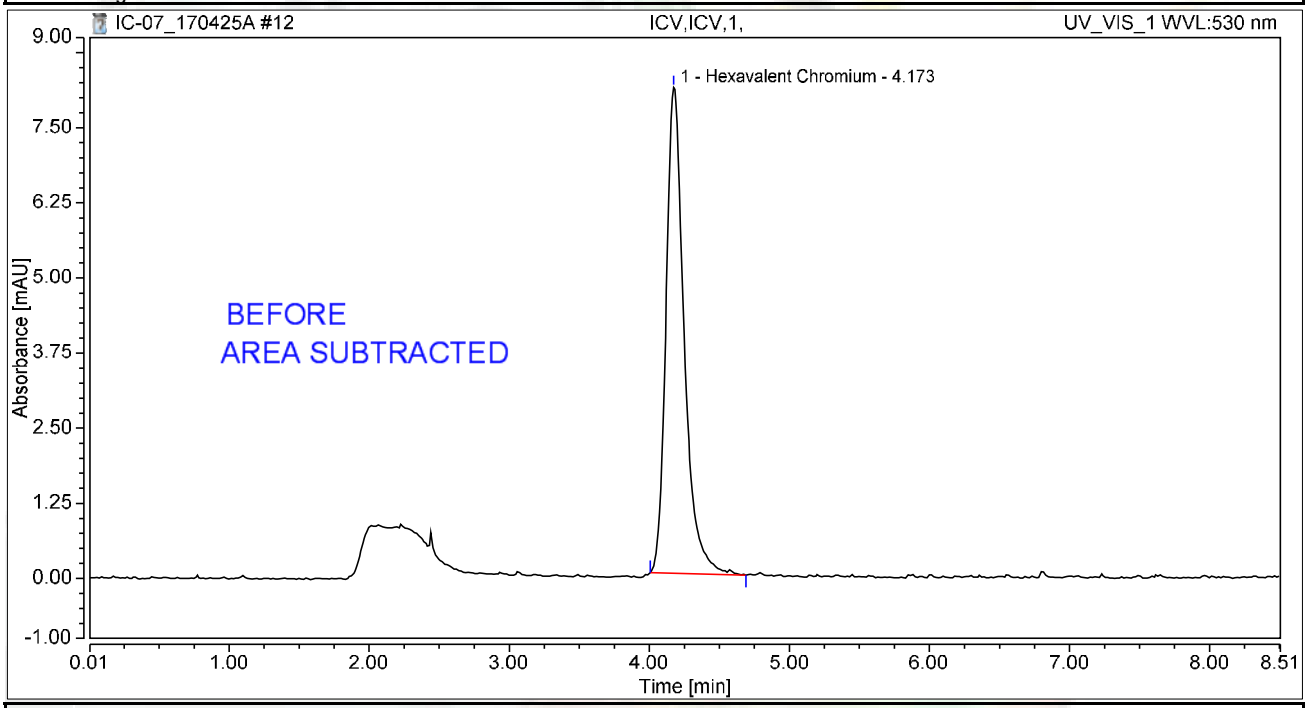
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.212	8.081	100.00	100.00	4.9703
Total:			**1.212**	**8.081**	**100.00**	**100.00**	

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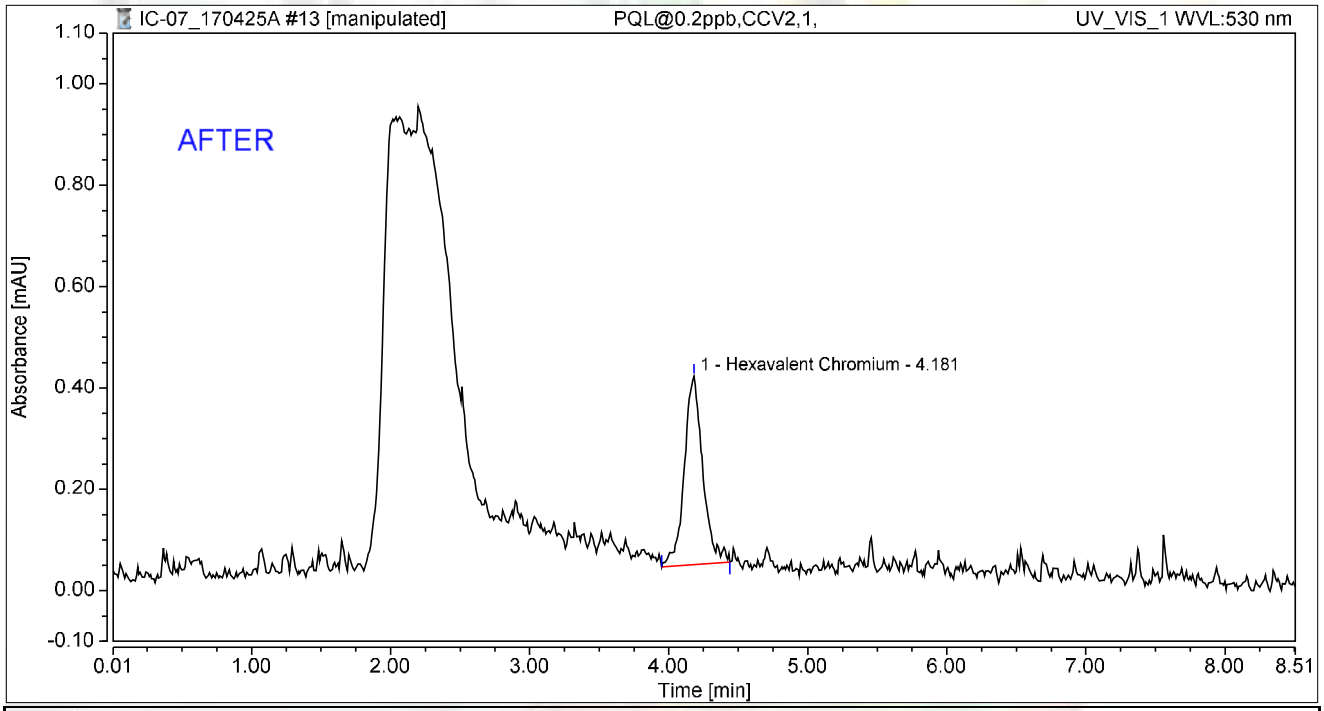
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.057	0.372	100.00	100.00	0.2353
Total:			**0.057**	**0.372**	**100.00**	**100.00**	

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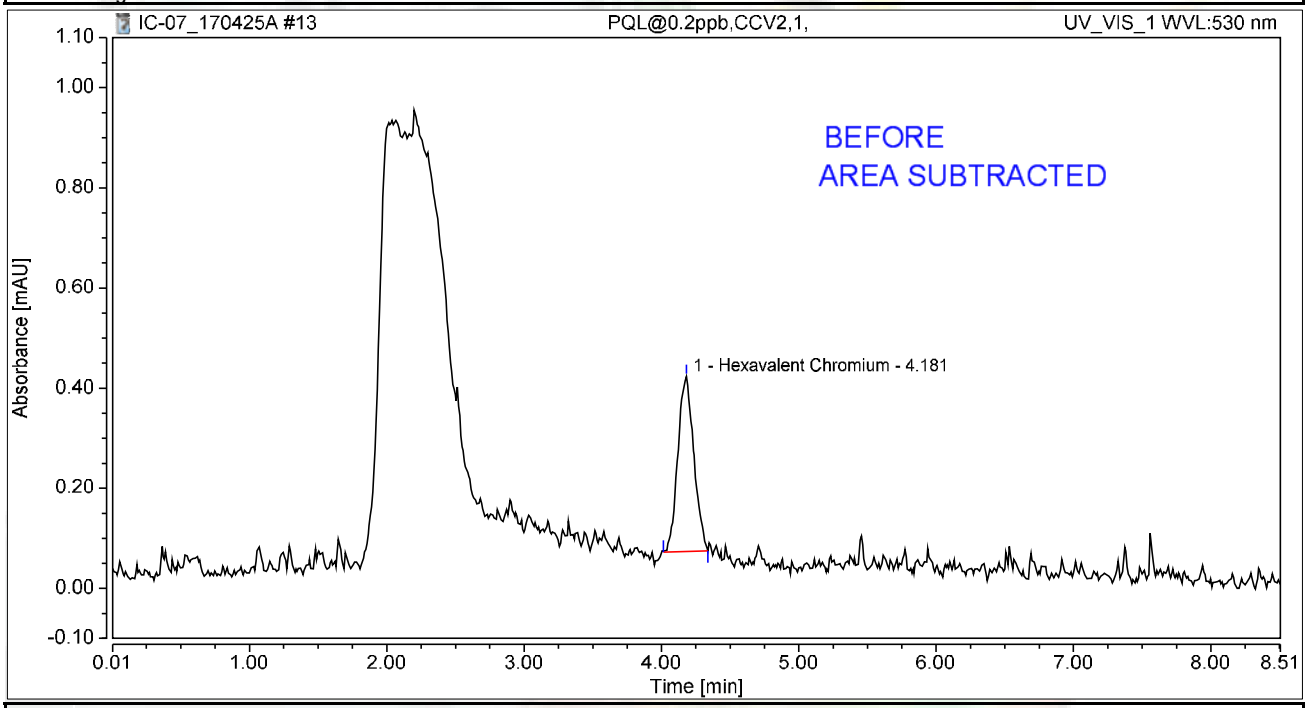
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.047	0.349	100.00	100.00	0.1927
Total:			**0.047**	**0.349**	**100.00**	**100.00**	

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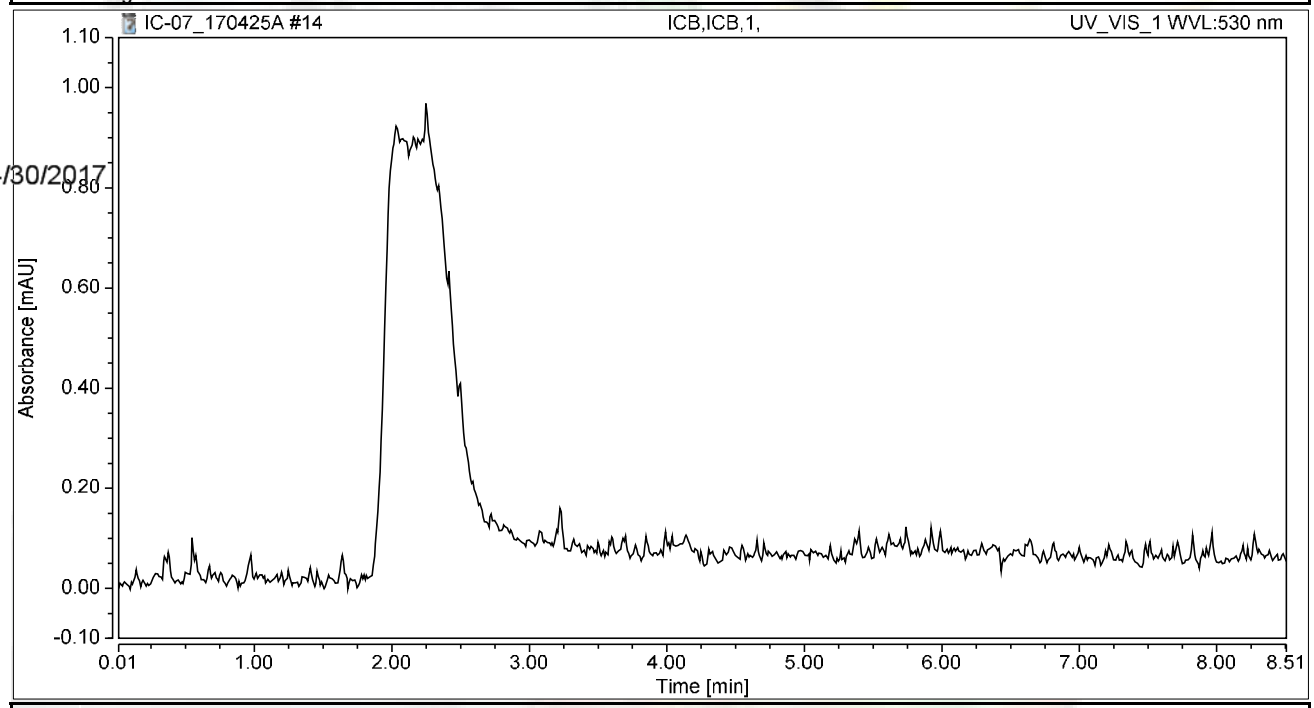
Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



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Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170511A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/11/17 9:08 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/11/17 9:19 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/11/17 9:28 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/11/17 9:37 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/11/17 9:47 AM	Reported
17	MB-R115197	MBLK	1	Hexavalent Chromium	05/11/17 9:56 AM	Reported
18	LCS-R115197	LCS	1	Hexavalent Chromium	05/11/17 10:06 AM	Reported
19	N024167-001A	SAMP	50	Hexavalent Chromium	05/11/17 10:18 AM	Reported
20	N024167-002A	SAMP	20	Hexavalent Chromium	05/11/17 10:30 AM	Reported
21	N024167-003A	SAMP	5	Hexavalent Chromium	05/11/17 10:39 AM	Reported
22	N024167-004A	SAMP	1	Hexavalent Chromium	05/11/17 10:49 AM	Reported
23	N024167-005A	SAMP	5	Hexavalent Chromium	05/11/17 10:58 AM	Reported
24	N024167-006A	SAMP	1	Hexavalent Chromium	05/11/17 11:08 AM	Reported
25	N024167-007A	SAMP	1	Hexavalent Chromium	05/11/17 11:17 AM	Reported
26	N024167-008A	SAMP	1	Hexavalent Chromium	05/11/17 11:27 AM	Not Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/11/17 11:36 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/11/17 11:46 AM	Reported
29	N024167-009A	SAMP	50	Hexavalent Chromium	05/11/17 11:55 AM	Reported
30	N024167-010A	SAMP	50	Hexavalent Chromium	05/11/17 12:04 PM	Reported
31	N024167-011A	SAMP	50	Hexavalent Chromium	05/11/17 12:14 PM	Reported
32	N024167-012A	SAMP	100	Hexavalent Chromium	05/11/17 12:23 PM	Reported
33	N024167-013A	SAMP	20	Hexavalent Chromium	05/11/17 12:33 PM	Reported
34	N024167-014A	SAMP	100	Hexavalent Chromium	05/11/17 12:42 PM	Reported
35	N024167-015A	SAMP	20	Hexavalent Chromium	05/11/17 12:52 PM	Reported
36	N024167-016A	SAMP	1	Hexavalent Chromium	05/11/17 1:01 PM	Not Reported
37	N024167-017A	SAMP	1	Hexavalent Chromium	05/11/17 1:11 PM	Reported
38	N024167-008A	SAMP	2	Hexavalent Chromium	05/11/17 1:20 PM	Not Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/11/17 1:30 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/11/17 1:39 PM	Reported
41	N024167-016A	SAMP	2	Hexavalent Chromium	05/11/17 1:49 PM	Reported
42	N024167-004A	SAMP	1	Hexavalent Chromium	05/11/17 1:58 PM	Reported

INJECTION LOG: 170511A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024160-015A	SAMP	50	Hexavalent Chromium	05/11/17 2:07 PM	Reported
44	N024160-015AMS	MS	50	Hexavalent Chromium	05/11/17 2:17 PM	Reported
45	N024160-015AMSD	MSD	50	Hexavalent Chromium	05/11/17 2:26 PM	Reported
46	N024160-016A	SAMP	50	Hexavalent Chromium	05/11/17 2:36 PM	Reported
47	N024160-016ADUP	DUP	50	Hexavalent Chromium	05/11/17 2:45 PM	Reported
48	N024167-001AMS	MS	50	Hexavalent Chromium	05/11/17 2:55 PM	Reported
49	N024053-001A	SAMP	1	Hexavalent Chromium	05/11/17 3:04 PM	Not Reported
50	N024053-001AMS	MS	1	Hexavalent Chromium	05/11/17 3:14 PM	Not Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/11/17 3:23 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/11/17 3:33 PM	Reported
53	N024167-008A	SAMP	2	Hexavalent Chromium	05/11/17 3:42 PM	Reported
54	LCS-R115198	LCS	1	Hexavalent Chromium	05/11/17 3:55 PM	Reported
55	MB-R115198	MBLK	1	Hexavalent Chromium	05/11/17 4:06 PM	Reported
56	N024182-006A	SAMP	50	Hexavalent Chromium	05/11/17 4:15 PM	Reported
57	N024182-005A	SAMP	1	Hexavalent Chromium	05/11/17 4:25 PM	Reported
58	N024182-006AMS	MS	50	Hexavalent Chromium	05/11/17 4:34 PM	Reported
59	N024182-006AMSD	MSD	50	Hexavalent Chromium	05/11/17 4:44 PM	Reported
60	N024182-005ADUP	DUP	1	Hexavalent Chromium	05/11/17 4:53 PM	Reported
61	N024182-001A	SAMP	1	Hexavalent Chromium	05/11/17 5:03 PM	Reported
62	N024182-002A	SAMP	5	Hexavalent Chromium	05/11/17 5:12 PM	Reported
63	CCV-5	CCV	1	Hexavalent Chromium	05/11/17 5:22 PM	Reported
64	CCB-5	CCB	1	Hexavalent Chromium	05/11/17 5:31 PM	Reported
65	N024182-004A	SAMP	2	Hexavalent Chromium	05/11/17 5:41 PM	Reported
66	N024182-007A	SAMP	20	Hexavalent Chromium	05/11/17 5:50 PM	Reported
67	N024182-008A	SAMP	100	Hexavalent Chromium	05/11/17 5:59 PM	Reported
68	N024182-011A	SAMP	20	Hexavalent Chromium	05/11/17 6:09 PM	Reported
69	N024182-012A	SAMP	5	Hexavalent Chromium	05/11/17 6:18 PM	Reported
70	N024182-013A	SAMP	1	Hexavalent Chromium	05/11/17 6:28 PM	Reported
71	N024182-014A	SAMP	1	Hexavalent Chromium	05/11/17 6:37 PM	Reported
72	N024185-001A	SAMP	1	Hexavalent Chromium	05/11/17 6:47 PM	Reported
73	N024185-001AMS	MS	1	Hexavalent Chromium	05/11/17 6:56 PM	Reported
74	N024185-002A	SAMP	1	Hexavalent Chromium	05/11/17 7:06 PM	Reported
75	CCV-6	CCV1	1	Hexavalent Chromium	05/11/17 7:15 PM	Reported
76	CCB-6	CCB	1	Hexavalent Chromium	05/11/17 7:25 PM	Reported
77	N024185-002AMS	MS	1	Hexavalent Chromium	05/11/17 7:34 PM	Reported
78	N024185-003A	SAMP	1	Hexavalent Chromium	05/11/17 7:44 PM	Reported
79	N024185-003AMS	MS	1	Hexavalent Chromium	05/11/17 7:53 PM	Reported
80	N024182-003A	SAMP	1	Hexavalent Chromium	05/11/17 8:02 PM	Reported
81	CCV-7	CCV	1	Hexavalent Chromium	05/11/17 8:12 PM	Reported
82	CCB-7	CCB	1	Hexavalent Chromium	05/11/17 8:21 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170511A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**11/May/17 20:52:11**
No. of Injections:	**85**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/11/2017 09:08	Finished	
13	BLANK	2	1000	Unknown		05/11/2017 09:19	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/11/2017 09:28	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/11/2017 09:37	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/11/2017 09:47	Finished	CCB R170428A
17	MB-H2O,MBLK,1	6	1000	Unknown		05/11/2017 09:56	Finished	MB R170419B
18	LCS-H2O,LCS,1	7	1000	Unknown		05/11/2017 10:06	Finished	LCS, IWST-170330B
19	N024167-001A,SAMF	8	1000	Unknown		05/11/2017 10:18	Finished	SAMP, 0.2>10mL
20	N024167-002A,SAMF	9	1000	Unknown		05/11/2017 10:30	Finished	SAMP, 0.5>10mL
21	N024167-003A,SAMF	10	1000	Unknown		05/11/2017 10:39	Finished	SAMP, 2>10mL
22	N024167-004A,SAMF	11	1000	Unknown		05/11/2017 10:49	Finished	SAMP, 10mL
23	N024167-005A,SAMF	12	1000	Unknown		05/11/2017 10:58	Finished	SAMP, 2>10mL
24	N024167-006A,SAMF	13	1000	Unknown		05/11/2017 11:08	Finished	SAMP, 10mL
25	N024167-007A,SAMF	14	1000	Unknown		05/11/2017 11:17	Finished	SAMP, 10mL
26	N024167-008A,SAMF	15	1000	Unknown		05/11/2017 11:27	Finished	SAMP, 10mL
27	CCV-2,CCV1,1,	16	1000	Unknown		05/11/2017 11:36	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	17	1000	Unknown		05/11/2017 11:46	Finished	CCB R170419B
29	N024167-009A,SAMF	18	1000	Unknown		05/11/2017 11:55	Finished	SAMP, 0.2>10mL
30	N024167-010A,SAMF	19	1000	Unknown		05/11/2017 12:04	Finished	SAMP, 0.2>10mL
31	N024167-011A,SAMF	20	1000	Unknown		05/11/2017 12:14	Finished	SAMP, 0.2>10mL
32	N024167-012A,SAMF	21	1000	Unknown		05/11/2017 12:23	Finished	SAMP, 0.1>10mL
33	N024167-013A,SAMF	22	1000	Unknown		05/11/2017 12:33	Finished	SAMP, 0.5>10mL
34	N024167-014A,SAMF	23	1000	Unknown		05/11/2017 12:42	Finished	SAMP, 0.1>10mL
35	N024167-015A,SAMF	24	1000	Unknown		05/11/2017 12:52	Finished	SAMP, 0.5>10mL
36	N024167-016A,SAMF	25	1000	Unknown		05/11/2017 13:01	Finished	SAMP, 10mL
37	N024167-017A,SAMF	26	1000	Unknown		05/11/2017 13:11	Finished	SAMP, 10mL
38	N024167-008A,SAMF	27	1000	Unknown		05/11/2017 13:20	Finished	SAMP, 5>10mL
39	CCV-3,CCV,1,	28	1000	Unknown		05/11/2017 13:30	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	29	1000	Unknown		05/11/2017 13:39	Finished	CCB R170419B
41	N024167-016A,SAMF	30	1000	Unknown		05/11/2017 13:49	Finished	SAMP, 5>10mL
42	N024167-004A,SAMF	31	1000	Unknown		05/11/2017 13:58	Finished	SAMP, 10mL
43	N024160-015A,SAMF	32	1000	Unknown		05/11/2017 14:07	Finished	SAMP, 0.2>10mL
44	N024160-015AMS,MS	33	1000	Unknown		05/11/2017 14:17	Finished	MS (5ppb), IWST-170330B,0.2
45	N024160-015AMSD,M	34	1000	Unknown		05/11/2017 14:26	Finished	MSD (5ppb), IWST-170330B,0.
46	N024160-016A,SAMF	35	1000	Unknown		05/11/2017 14:36	Finished	SAMP, 0.2>10mL
47	N024160-016ADUP,D	36	1000	Unknown		05/11/2017 14:45	Finished	DUP, 0.2>10mL
48	N024167-001AMS,MS	37	1000	Unknown		05/11/2017 14:55	Finished	MS (5ppb), IWST-170330B,0.2
49	N024053-001A,SAMF	38	1000	Unknown		05/11/2017 15:04	Finished	SAMP, 10mL
50	N024053-001AMS,MS	39	1000	Unknown		05/11/2017 15:14	Finished	MS (1ppb), IWST-170330B,0.2
51	CCV-4,CCV1,1,	40	1000	Unknown		05/11/2017 15:23	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	41	1000	Unknown		05/11/2017 15:33	Finished	CCB R170419B
53	N024167-008A,SAMF	42	1000	Unknown		05/11/2017 15:42	Finished	SAMP, 5>10mL
54	LCS-2,LCS,1	1	1000	Unknown		05/11/2017 15:55	Finished	LCS, IWST-170330B
55	MB-2,MBLK,1	2	1000	Unknown		05/11/2017 16:06	Finished	MB R170414A
56	N024182-006A,SAMF	3	1000	Unknown		05/11/2017 16:15	Finished	SAMP,0.2>10mL
57	N024182-005A,SAMF	4	1000	Unknown		05/11/2017 16:25	Finished	SAMP, 10mL
58	N024182-006AMS,MS	5	1000	Unknown		05/11/2017 16:34	Finished	MS (5ppb), IWST-170330B,0.2
59	N024182-006AMSD,M	6	1000	Unknown		05/11/2017 16:44	Finished	MSD (5ppb), IWST-170330B,0.
60	N024182-005ADUP,D	7	1000	Unknown		05/11/2017 16:53	Finished	MS (5ppb), IWST-170330B,0.2

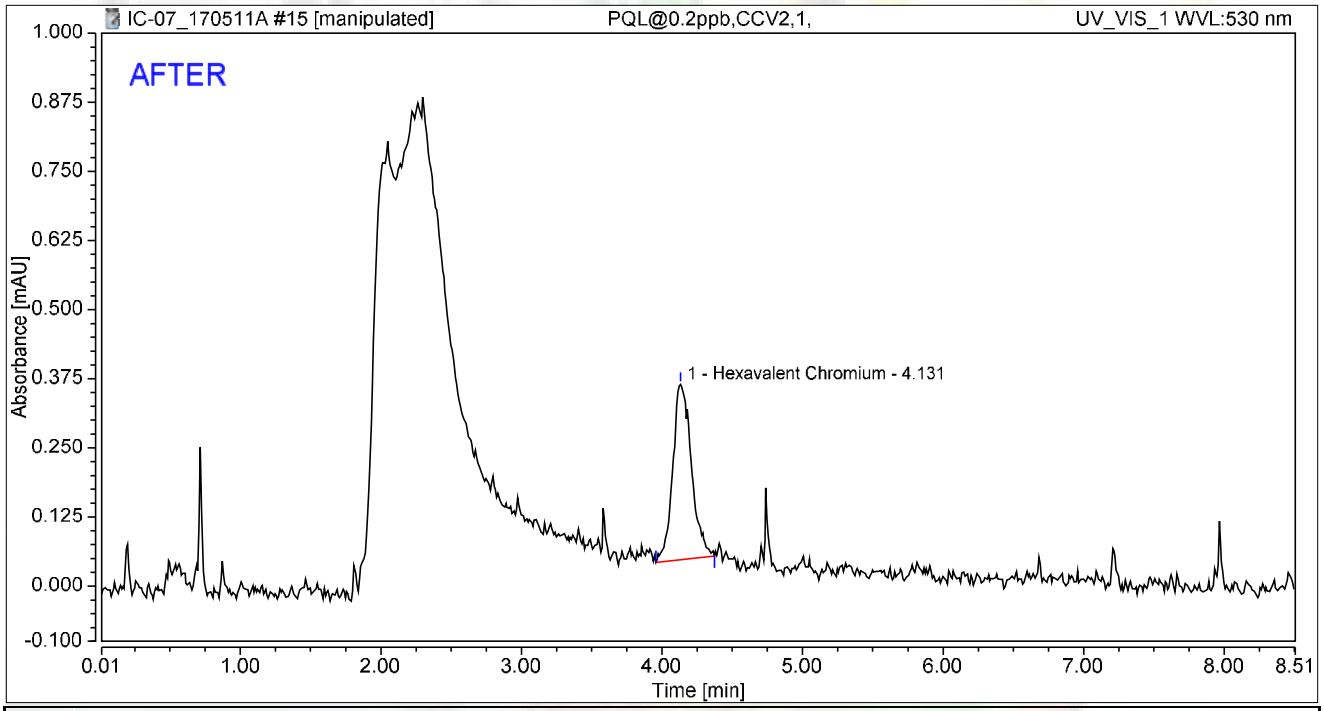
61	N024182-001A,SAMP	8	1000	Unknown		05/11/2017 17:03	Finished	SAMP, 10mL
62	N024182-002A,SAMP	9	1000	Unknown		05/11/2017 17:12	Finished	SAMP,2>10mL
63	CCV-5,CCV,1,	10	1000	Unknown		05/11/2017 17:22	Finished	CCV @5ppb, IWST-170330B
64	CCB-5,CCB,1,	11	1000	Unknown		05/11/2017 17:31	Finished	CCB R170414A
65	N024182-004A,SAMP	12	1000	Unknown		05/11/2017 17:41	Finished	SAMP,5>10mL
66	N024182-007A,SAMP	13	1000	Unknown		05/11/2017 17:50	Finished	SAMP,0.5>10mL
67	N024182-008A,SAMP	14	1000	Unknown		05/11/2017 17:59	Finished	SAMP,0.1>10mL
68	N024182-011A,SAMP	15	1000	Unknown		05/11/2017 18:09	Finished	SAMP,0.5>10mL
69	N024182-012A,SAMP	16	1000	Unknown		05/11/2017 18:18	Finished	SAMP,2> 10mL
70	N024182-013A,SAMP	17	1000	Unknown		05/11/2017 18:28	Finished	SAMP, 10mL
71	N024182-014A,SAMP	18	1000	Unknown		05/11/2017 18:37	Finished	SAMP, 10mL
72	N024185-001A,SAMP	19	1000	Unknown		05/11/2017 18:47	Finished	SAMP, 10mL
73	N024185-001AMS,MS	20	1000	Unknown		05/11/2017 18:56	Finished	MS (1ppb), IWST-170330B,0.2
74	N024185-002A,SAMP	21	1000	Unknown		05/11/2017 19:06	Finished	SAMP, 10mL
75	CCV-6,CCV1,1,	22	1000	Unknown		05/11/2017 19:15	Finished	CCV @10ppb, IWST-170330B
76	CCB-6,CCB,1,	23	1000	Unknown		05/11/2017 19:25	Finished	CCB R170414A
77	N024185-002AMS,MS	24	1000	Unknown		05/11/2017 19:34	Finished	MS (1ppb), IWST-170330B,0.2
78	N024185-003A,SAMP	25	1000	Unknown		05/11/2017 19:44	Finished	SAMP, 10mL
79	N024185-003AMS,MS	26	1000	Unknown		05/11/2017 19:53	Finished	MS (1ppb), IWST-170330B,0.2
80	N024182-003A,SAMP	27	1000	Unknown		05/11/2017 20:02	Finished	MS (1ppb), IWST-170330B,0.2
81	CCV-7,CCV,1,	28	1000	Unknown		05/11/2017 20:12	Finished	CCV @5ppb, IWST-170330B
82	CCB-7,CCB,1,	29	1000	Unknown		05/11/2017 20:21	Finished	CCB R170428A
83	SHUTDOWN	30	1000	Unknown		05/11/2017 20:31	Finished	
84	Eluent: R170508C	31	1000	Unknown		n.a.	Finished	Eluent
85	PCR: R170511A	32	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.049	0.317	100.00	100.00	0.2011
Total:			**0.049**	**0.317**	**100.00**	**100.00**	

rba 5/16/2017

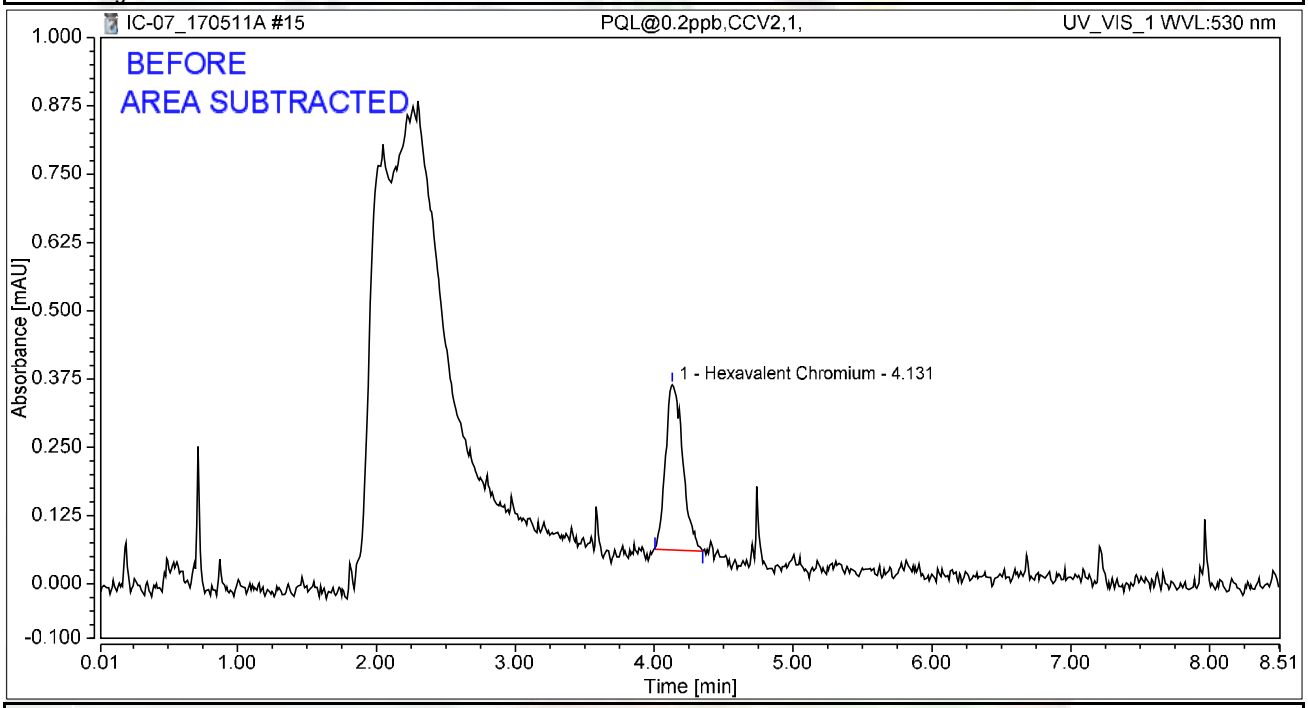
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.044	0.303	100.00	100.00	0.1802
Total:			**0.044**	**0.303**	**100.00**	**100.00**	

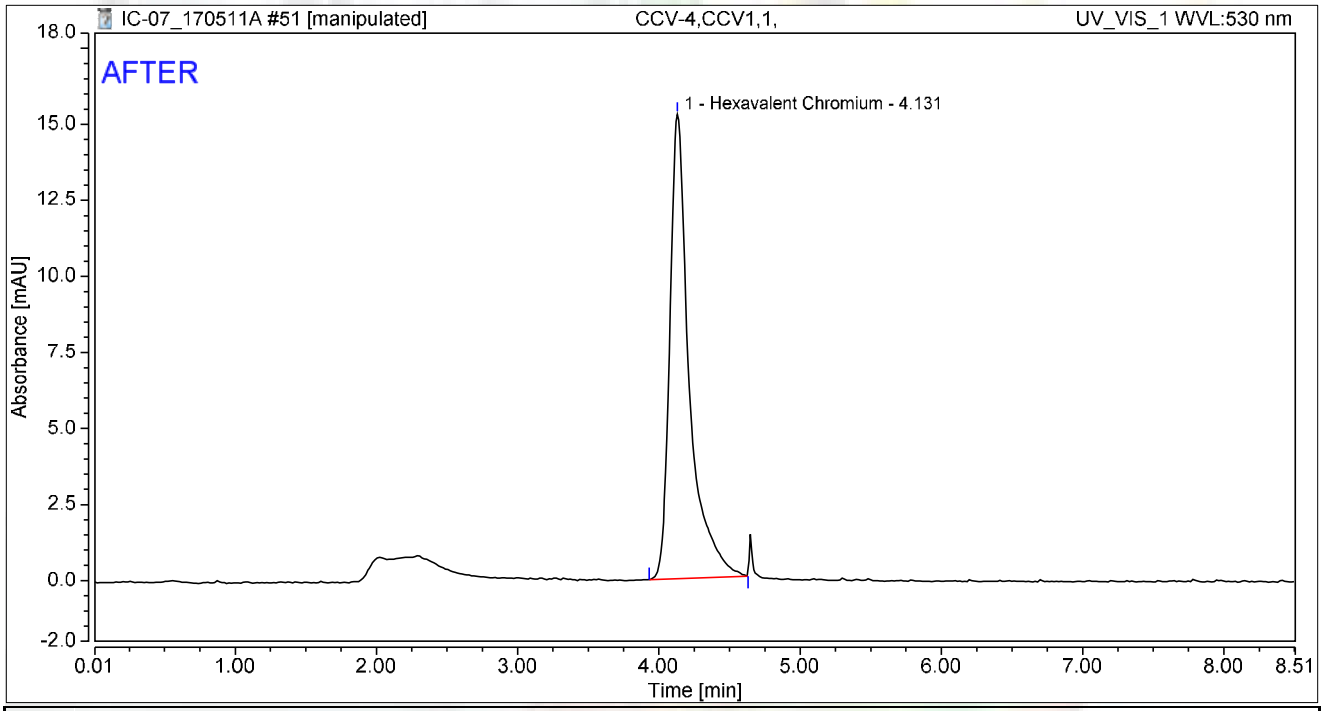
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.444	15.268	100.00	100.00	10.0213
Total:			**2.444**	**15.268**	**100.00**	**100.00**	

rba 5/16/2017

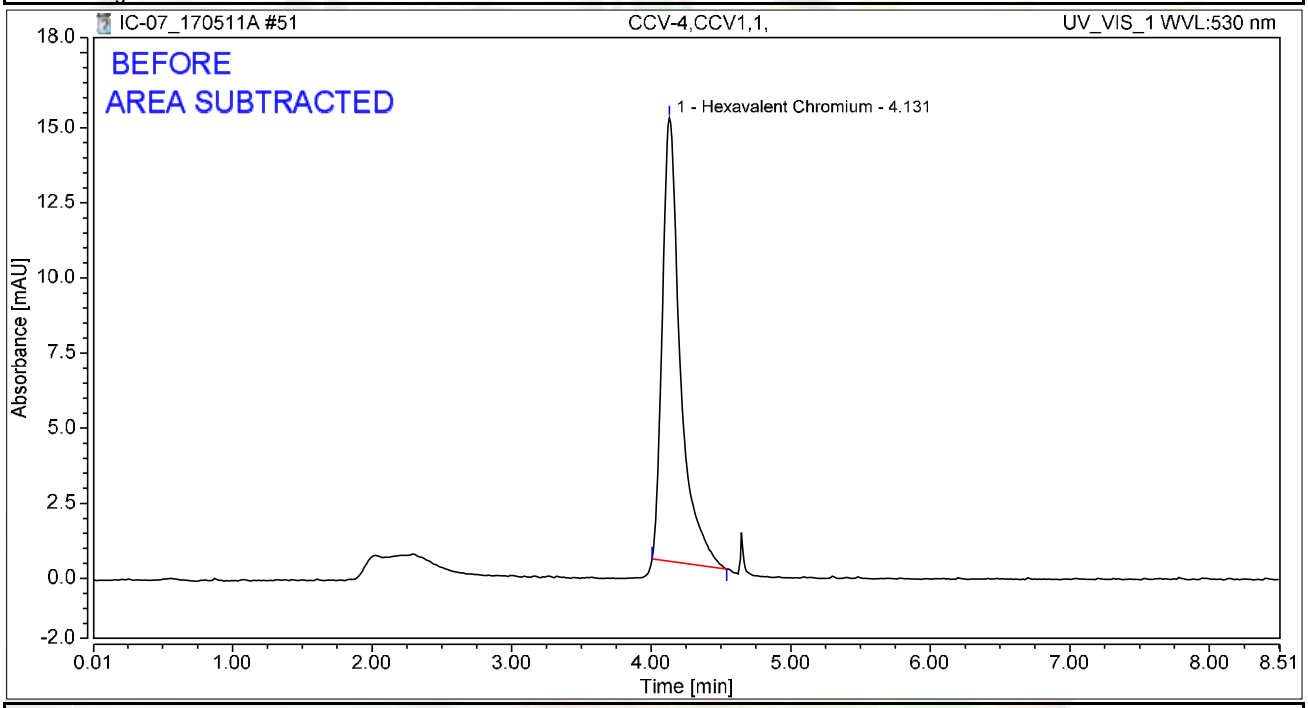
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.210	14.753	100.00	100.00	9.0606
Total:			**2.210**	**14.753**	**100.00**	**100.00**	

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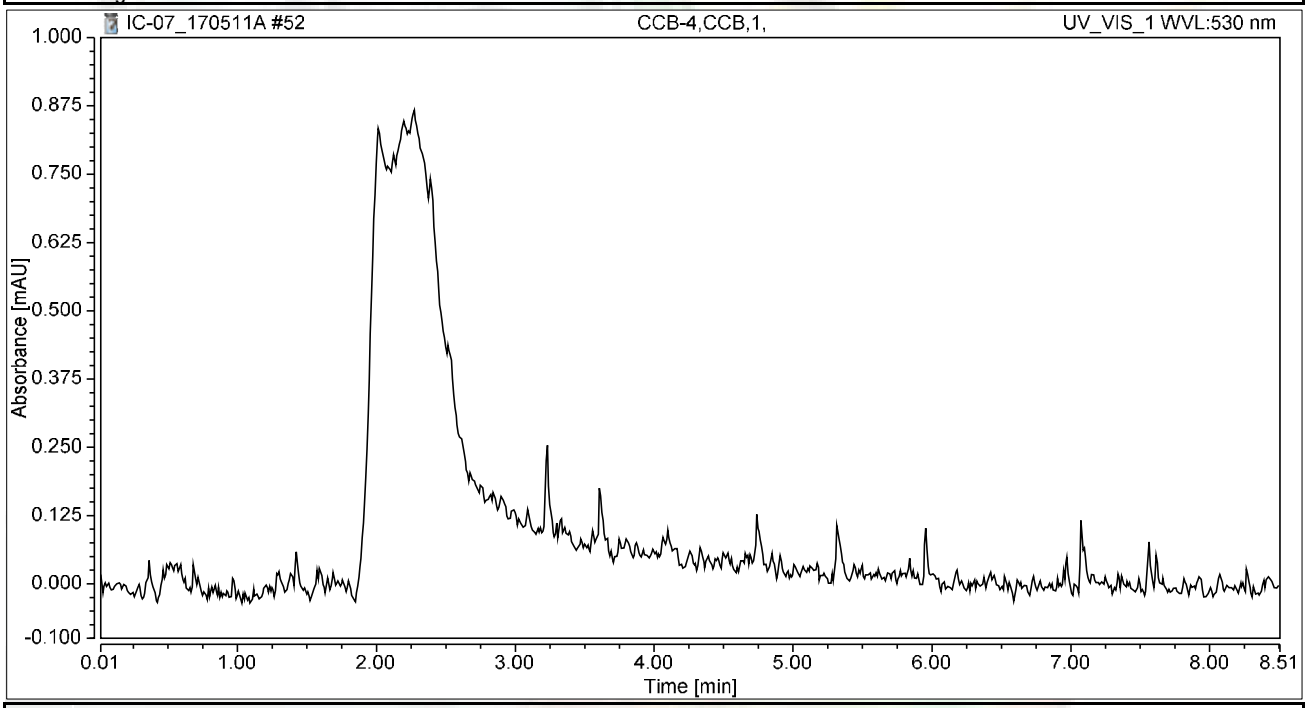
Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

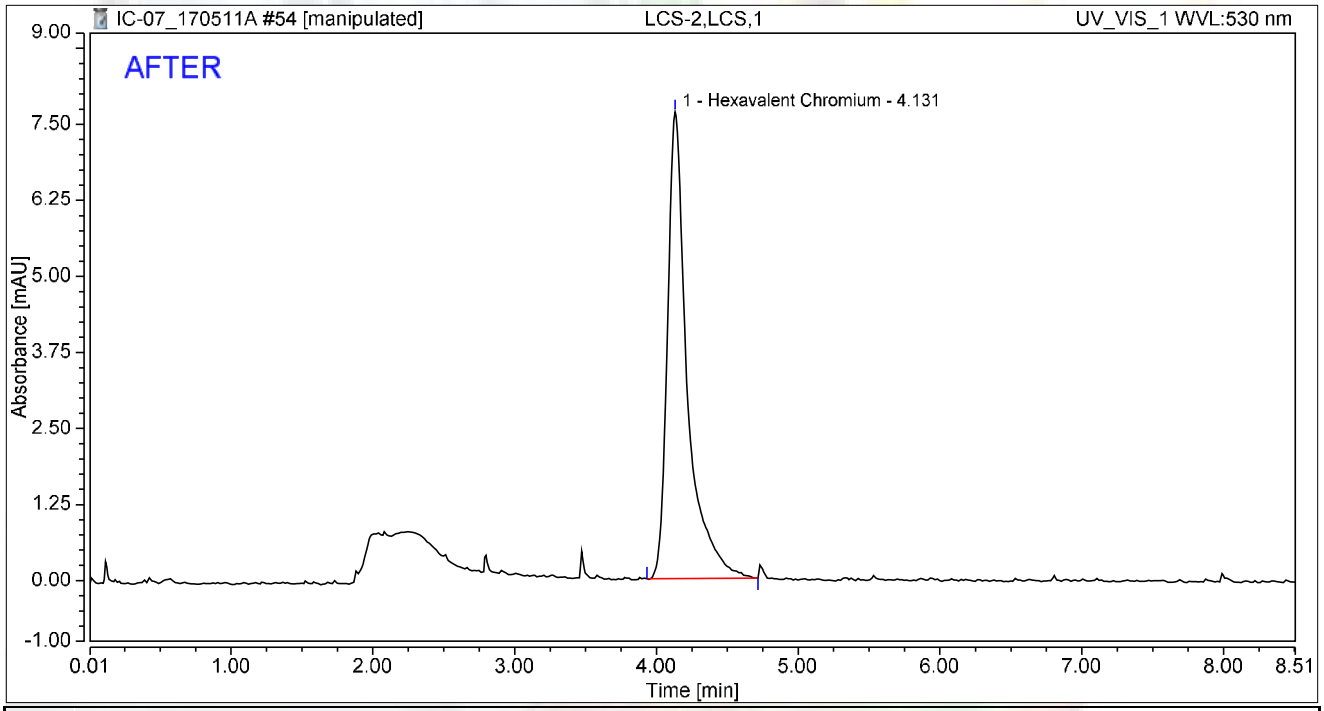
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.244	7.675	100.00	100.00	5.1023
Total:			**1.244**	**7.675**	**100.00**	**100.00**	

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My first review/validation

Reviewed by: Nancy 5/24/2017

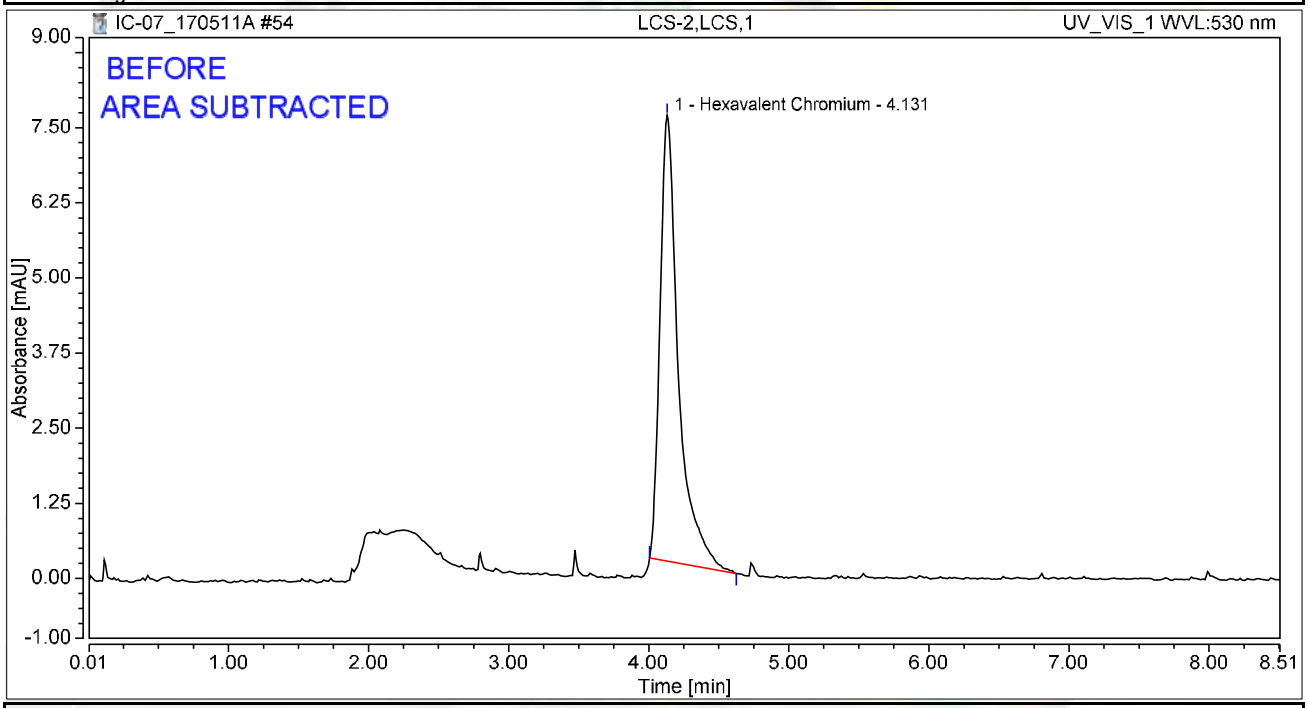
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**LCS-2,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 15:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.128	7.417	100.00	100.00	4.6241
Total:			**1.128**	**7.417**	**100.00**	**100.00**	

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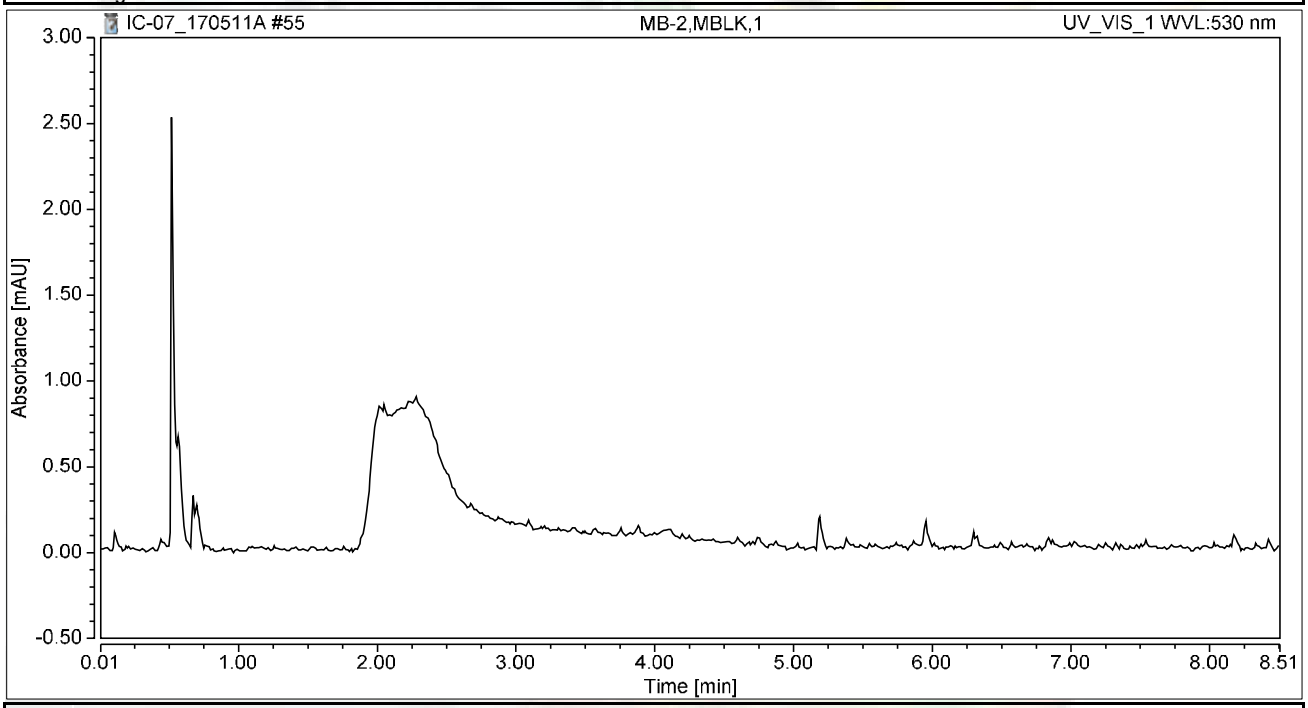
Chromatogram and Results

Injection Details

Injection Name:	**MB-2,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

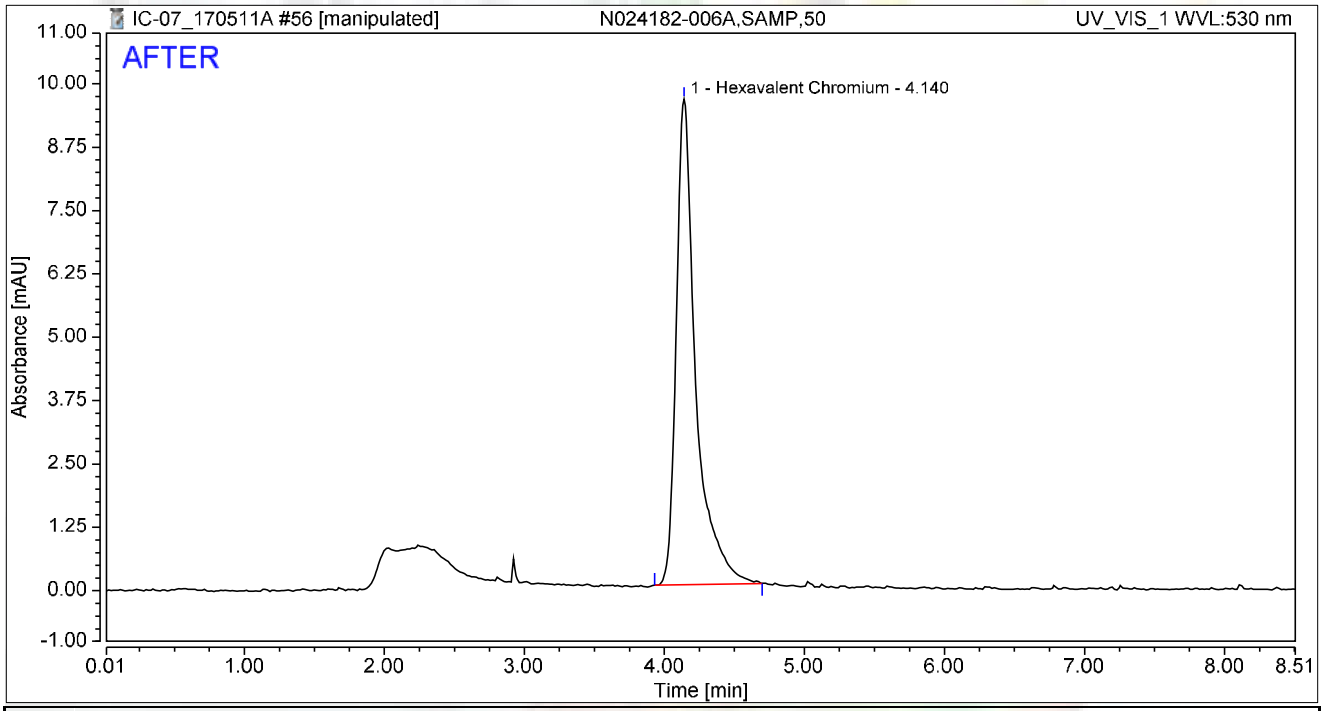
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024182-006A,SAMP,50**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.548	9.581	100.00	100.00	6.3490
Total:			**1.548**	**9.581**	**100.00**	**100.00**	

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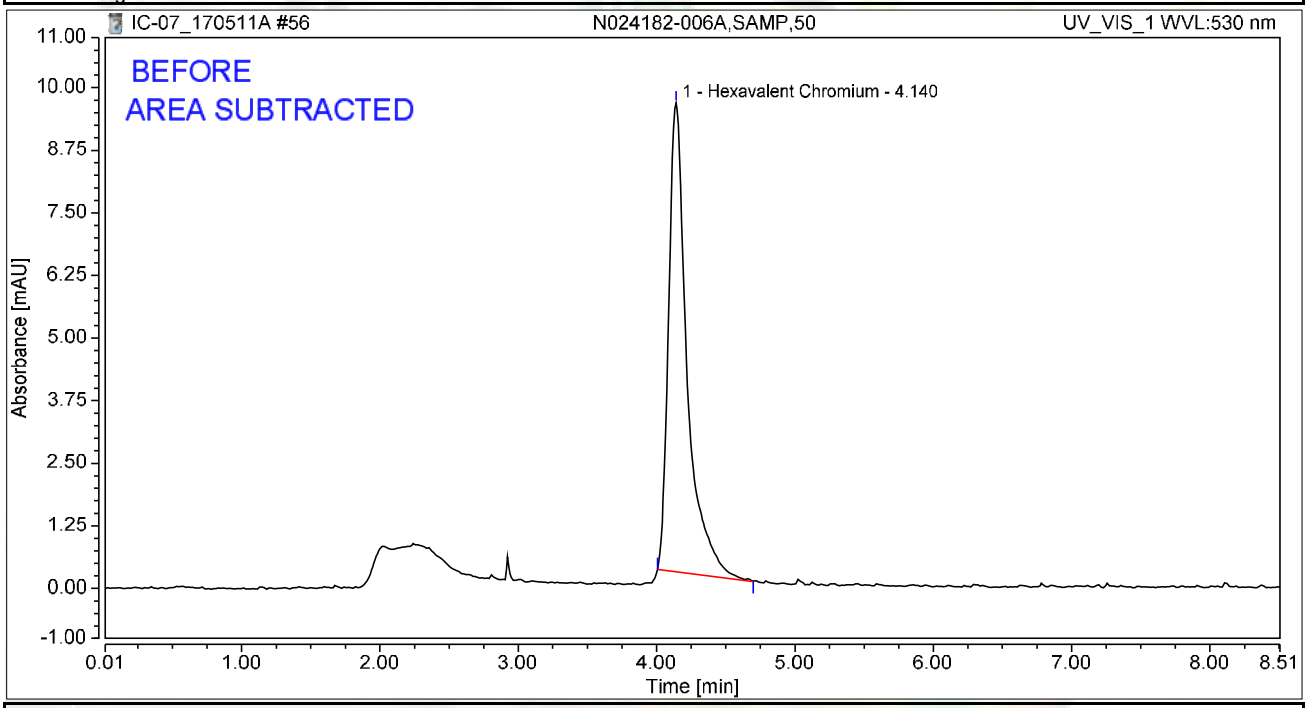
Reviewed by: 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-006A,SAMP,50**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.451	9.364	100.00	100.00	5.9507
Total:			**1.451**	**9.364**	**100.00**	**100.00**	

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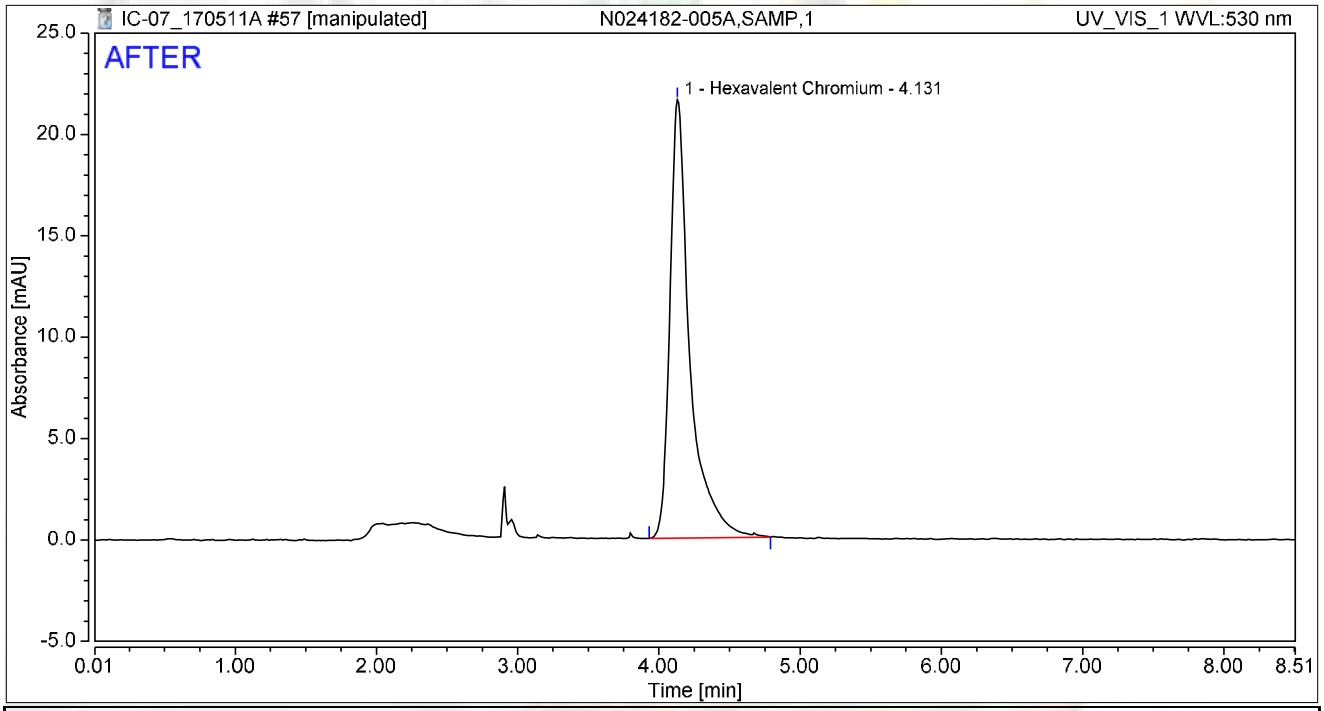
Chromatogram and Results

Injection Details

Injection Name:	**N024182-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.539	21.618	100.00	100.00	14.5126
Total:			**3.539**	**21.618**	**100.00**	**100.00**	

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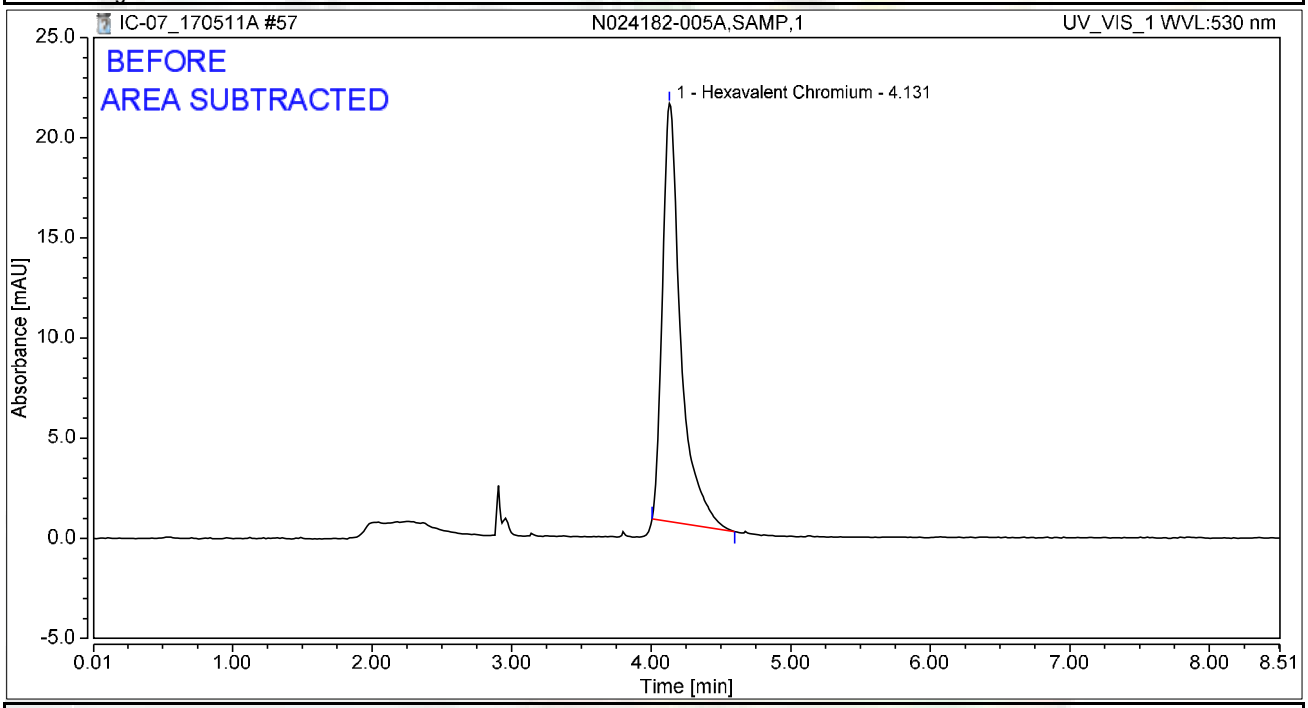
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-005A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	3.180	20.875	100.00	100.00	13.0383
Total:			**3.180**	**20.875**	**100.00**	**100.00**	

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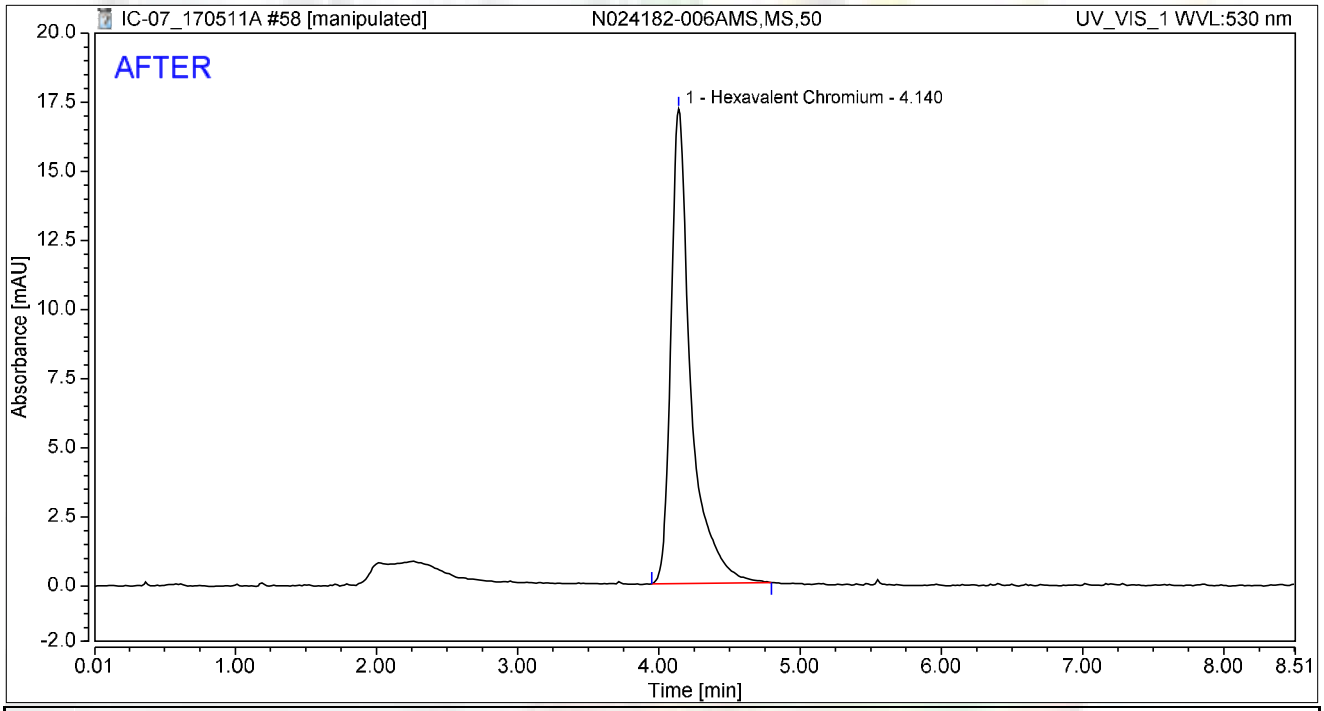
Chromatogram and Results

Injection Details

Injection Name:	**N024182-006AMS,MS,50**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.811	17.176	100.00	100.00	11.5239
Total:			**2.811**	**17.176**	**100.00**	**100.00**	

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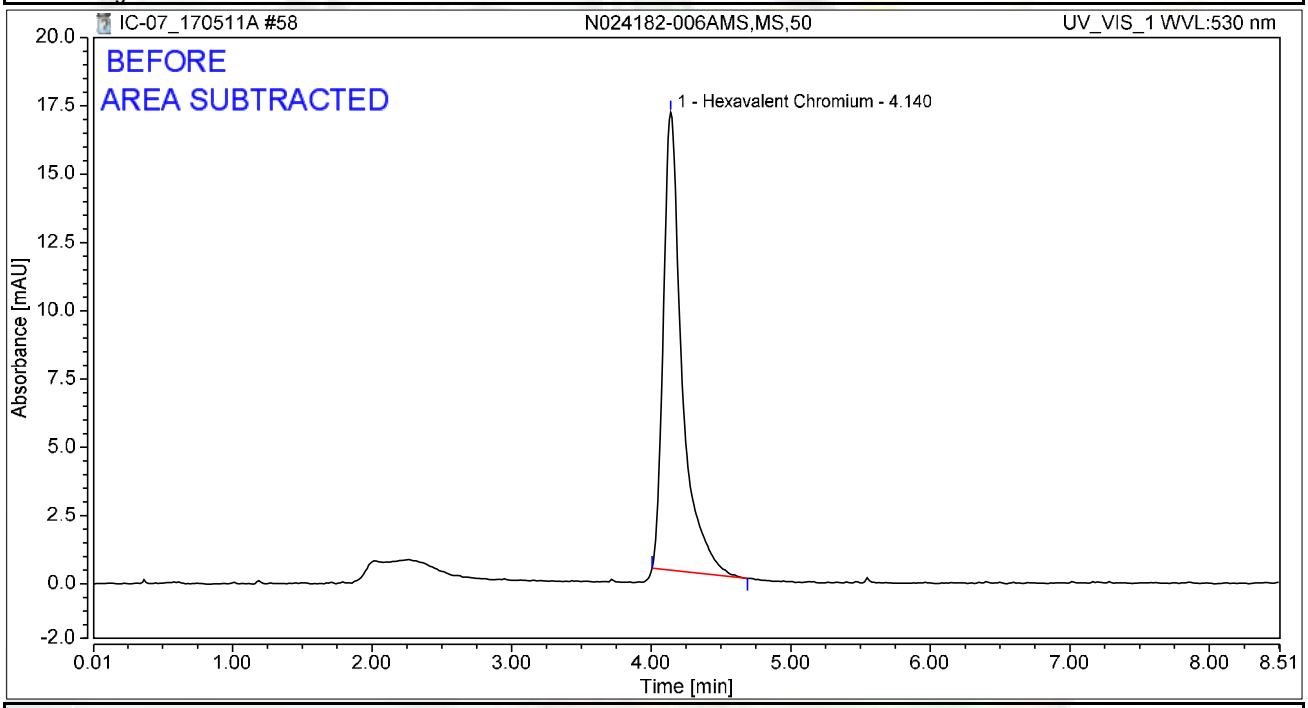
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-006AMS,MS,50**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.602	16.761	100.00	100.00	10.6690
Total:			**2.602**	**16.761**	**100.00**	**100.00**	

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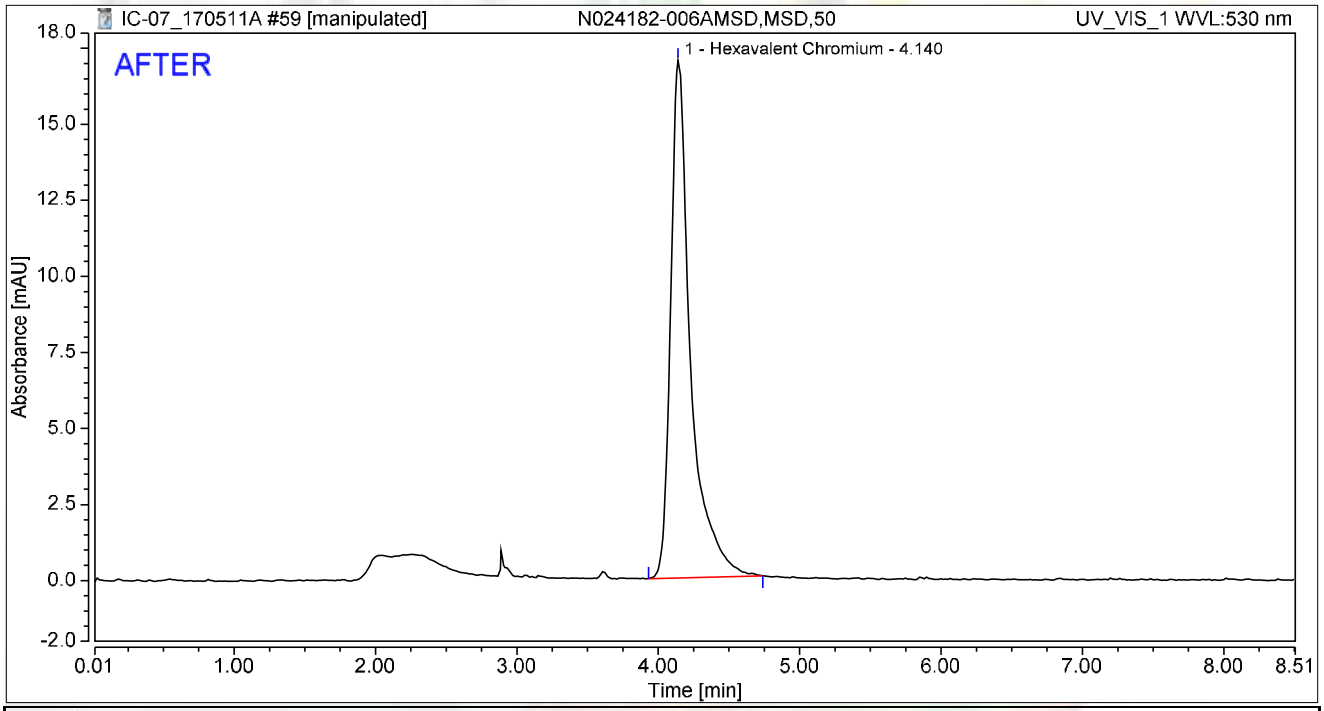
Chromatogram and Results

Injection Details

Injection Name:	**N024182-006AMSD,MSD,50**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.782	17.025	100.00	100.00	11.4073
Total:			**2.782**	**17.025**	**100.00**	**100.00**	

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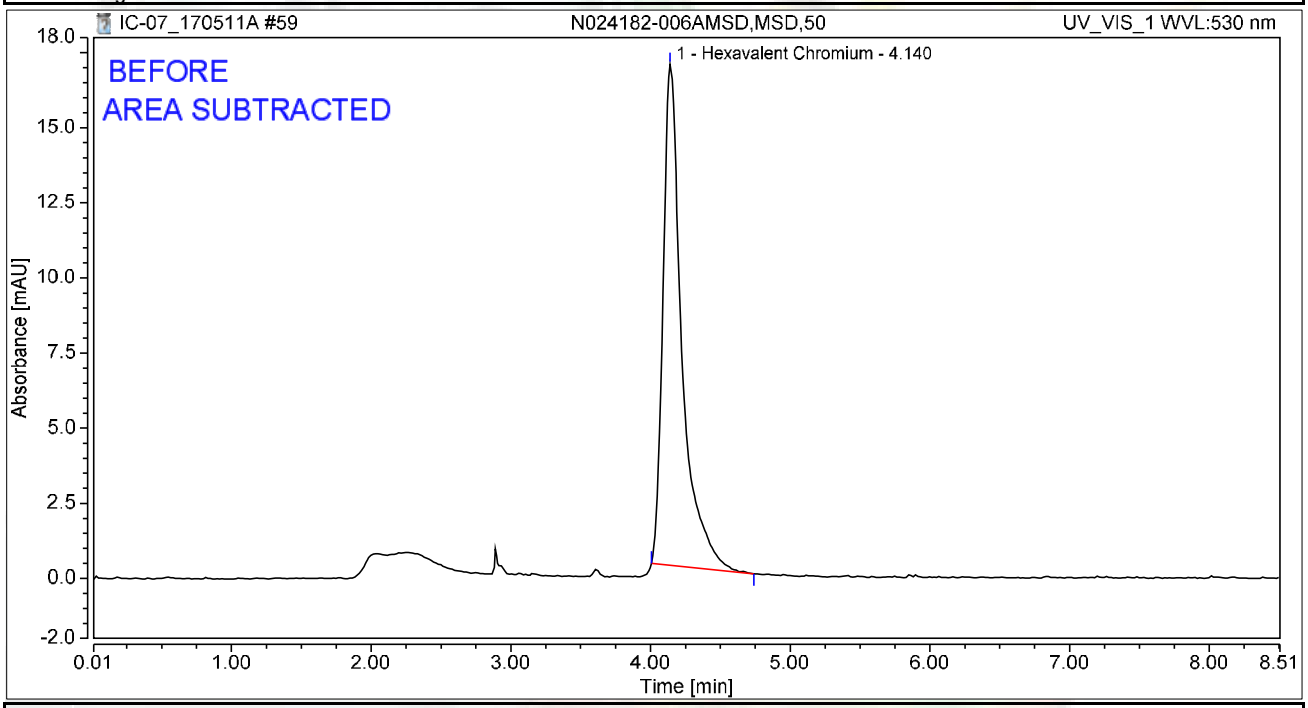
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-006AMSD,MSD,50**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.613	16.666	100.00	100.00	10.7130
Total:			**2.613**	**16.666**	**100.00**	**100.00**	

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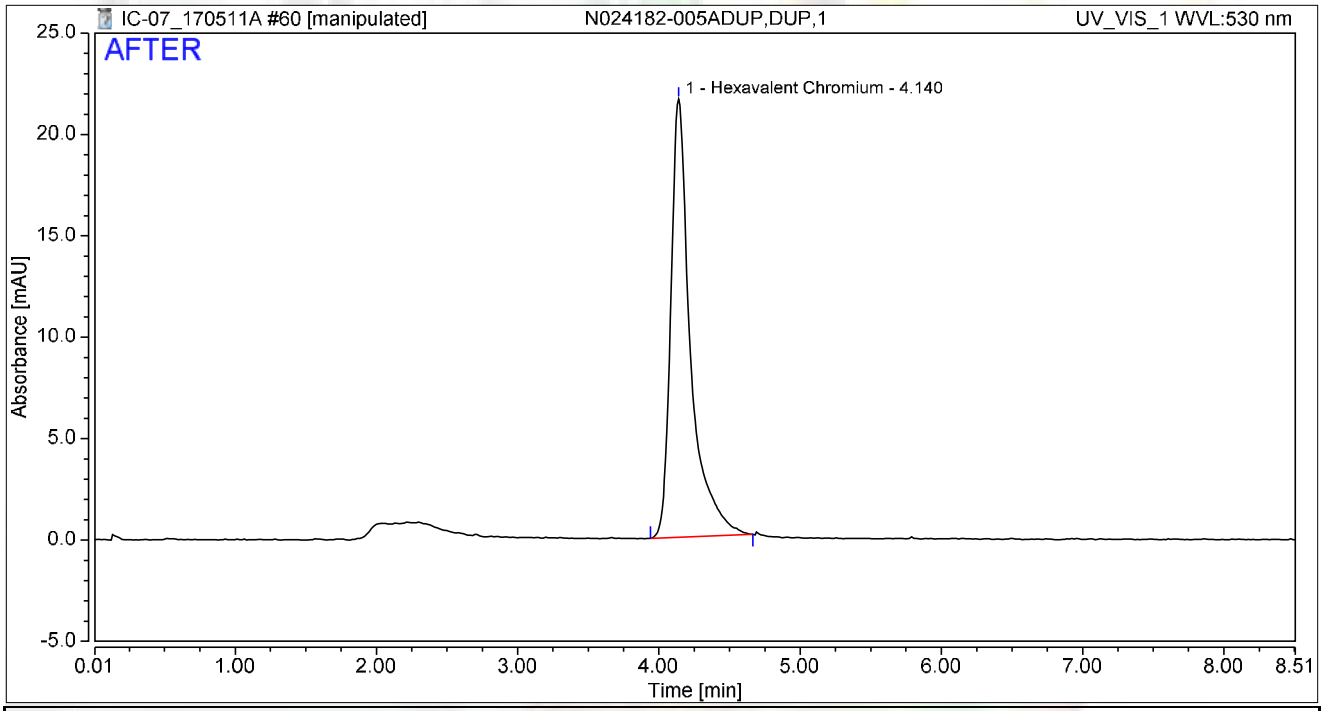
Chromatogram and Results

Injection Details

Injection Name:	**N024182-005ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.495	21.599	100.00	100.00	14.3284
Total:			**3.495**	**21.599**	**100.00**	**100.00**	

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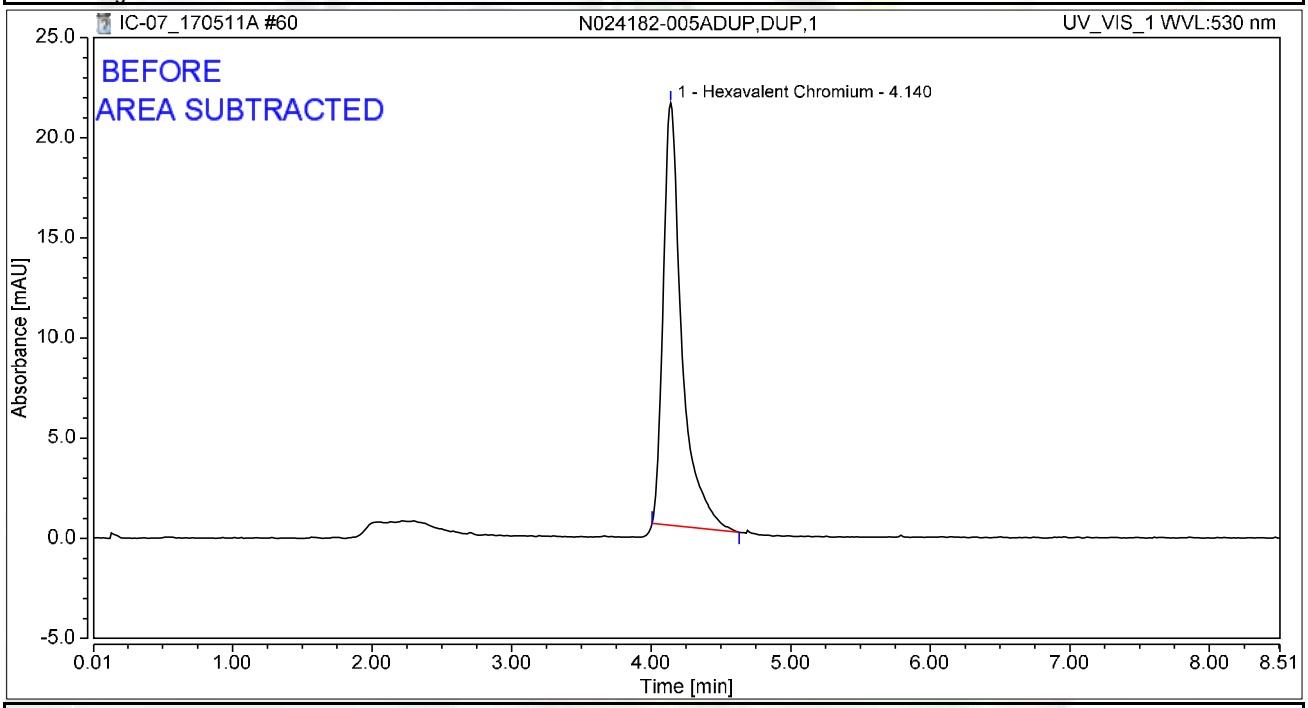
Reviewed by: 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-005ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 16:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	3.261	21.072	100.00	100.00	13.3709
Total:			**3.261**	**21.072**	**100.00**	**100.00**	

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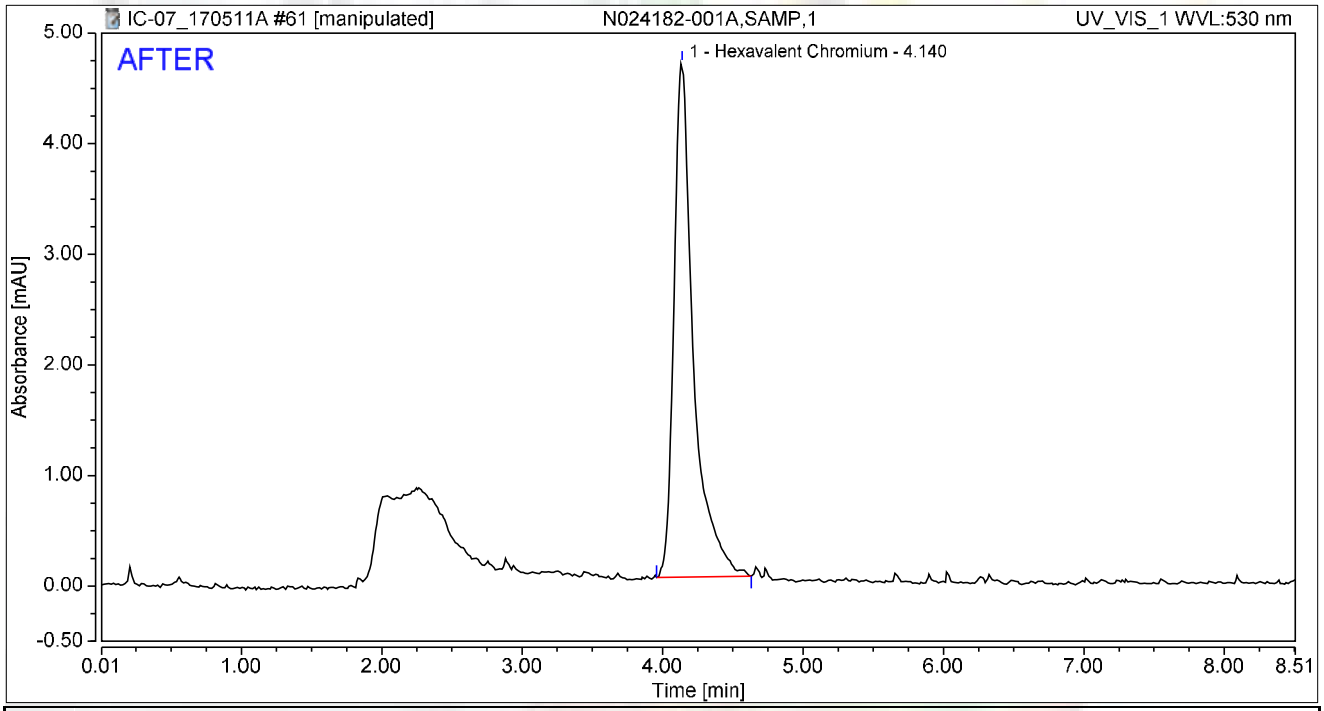
Chromatogram and Results

Injection Details

Injection Name:	**N024182-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.749	4.647	100.00	100.00	3.0710
Total:			**0.749**	**4.647**	**100.00**	**100.00**	

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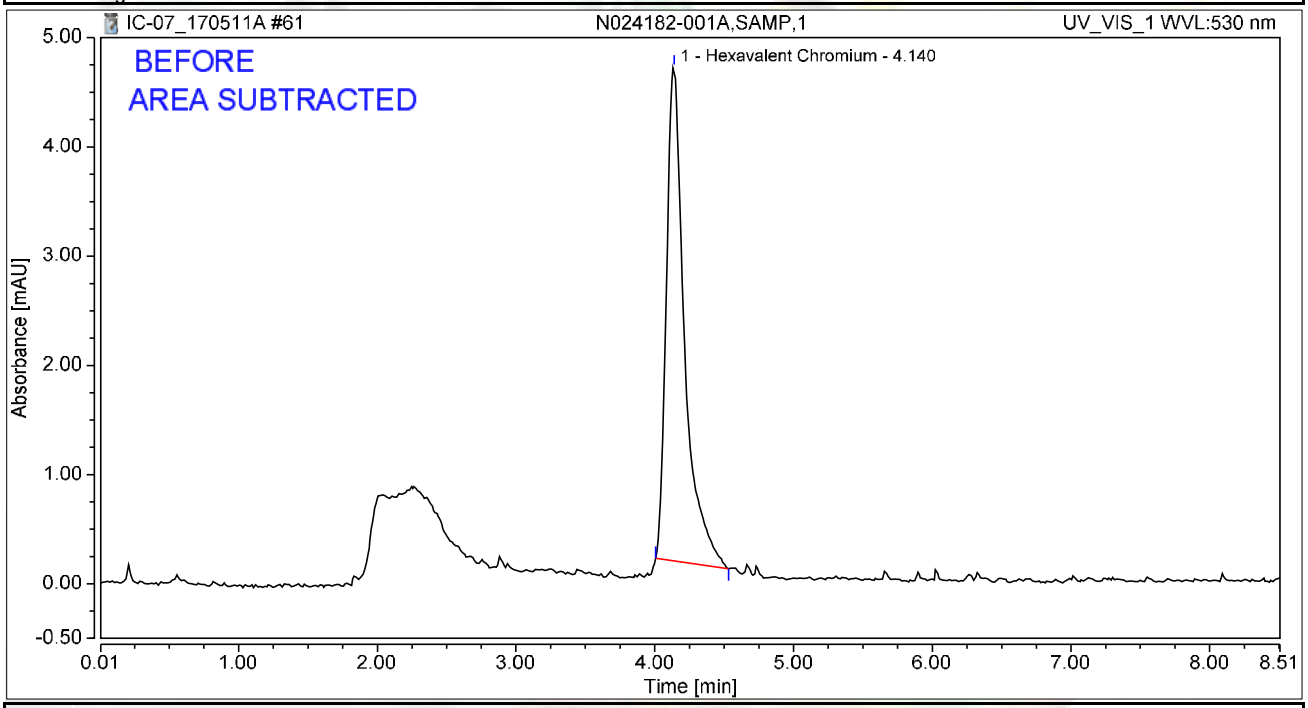
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:03**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.689	4.520	100.00	100.00	2.8253
Total:			**0.689**	**4.520**	**100.00**	**100.00**	

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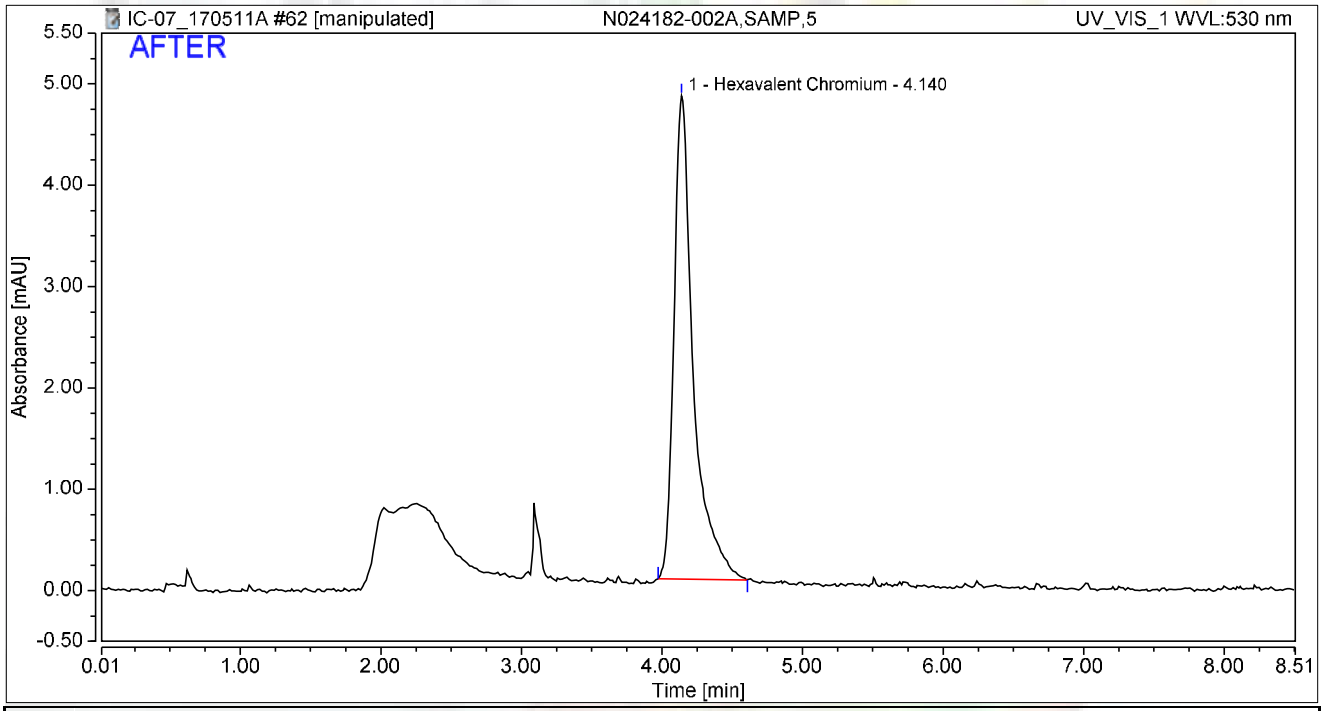
Chromatogram and Results

Injection Details

Injection Name:	**N024182-002A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.761	4.767	100.00	100.00	3.1202
Total:			**0.761**	**4.767**	**100.00**	**100.00**	

rba 5/16/2017

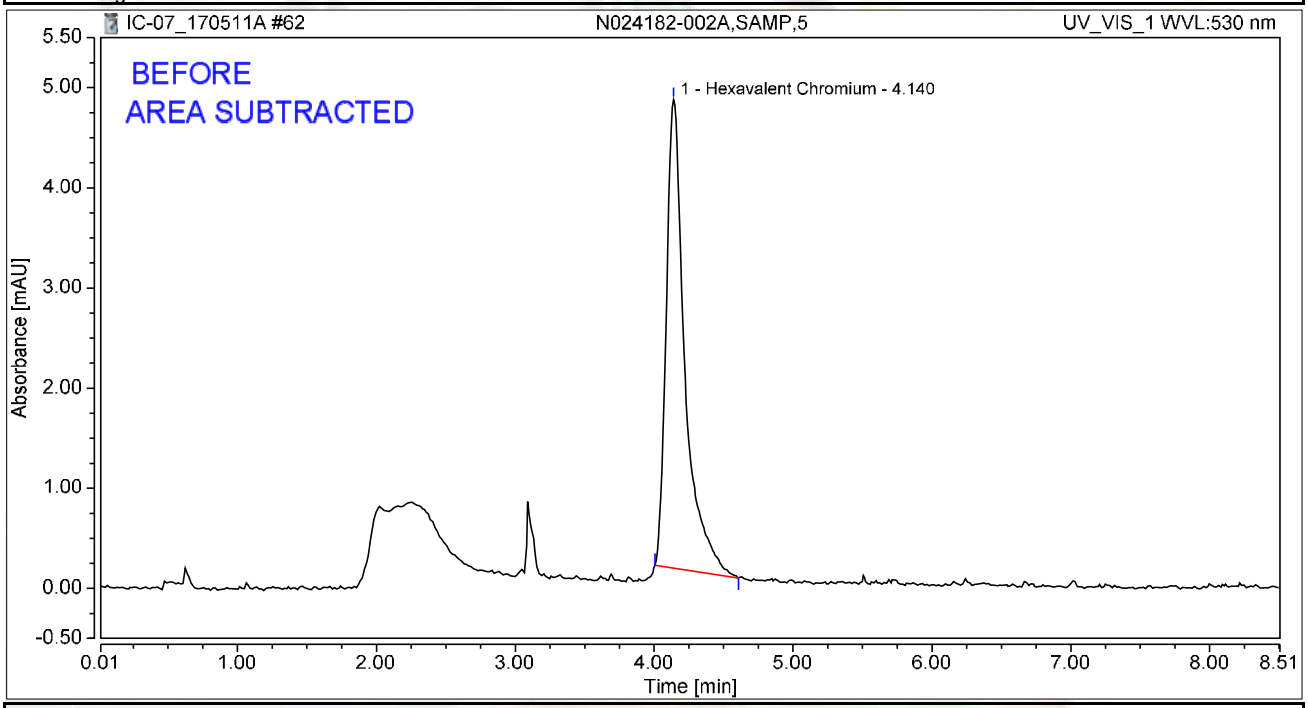
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-002A,SAMP,5**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.726	4.680	100.00	100.00	2.9762
Total:			**0.726**	**4.680**	**100.00**	**100.00**	

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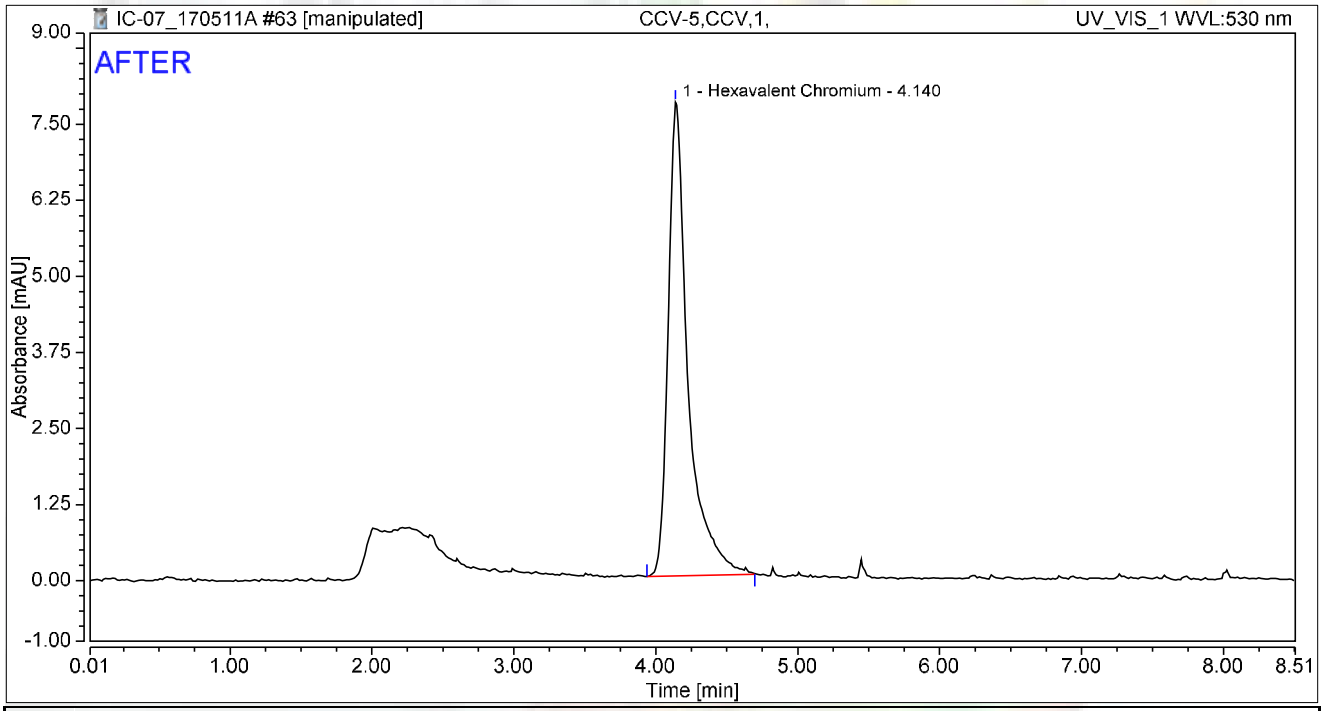
Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.262	7.790	100.00	100.00	5.1757
Total:			**1.262**	**7.790**	**100.00**	**100.00**	

rba 5/16/2017

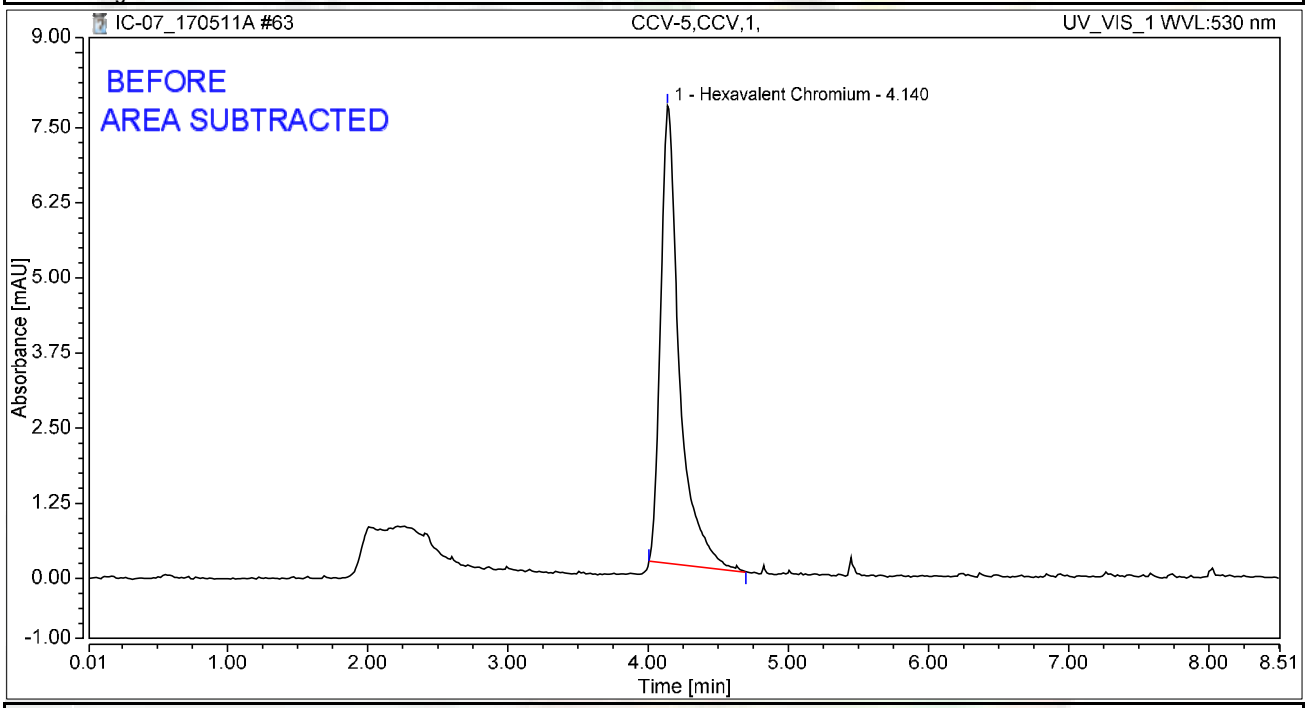
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:22**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.184	7.616	100.00	100.00	4.8564
Total:			**1.184**	**7.616**	**100.00**	**100.00**	

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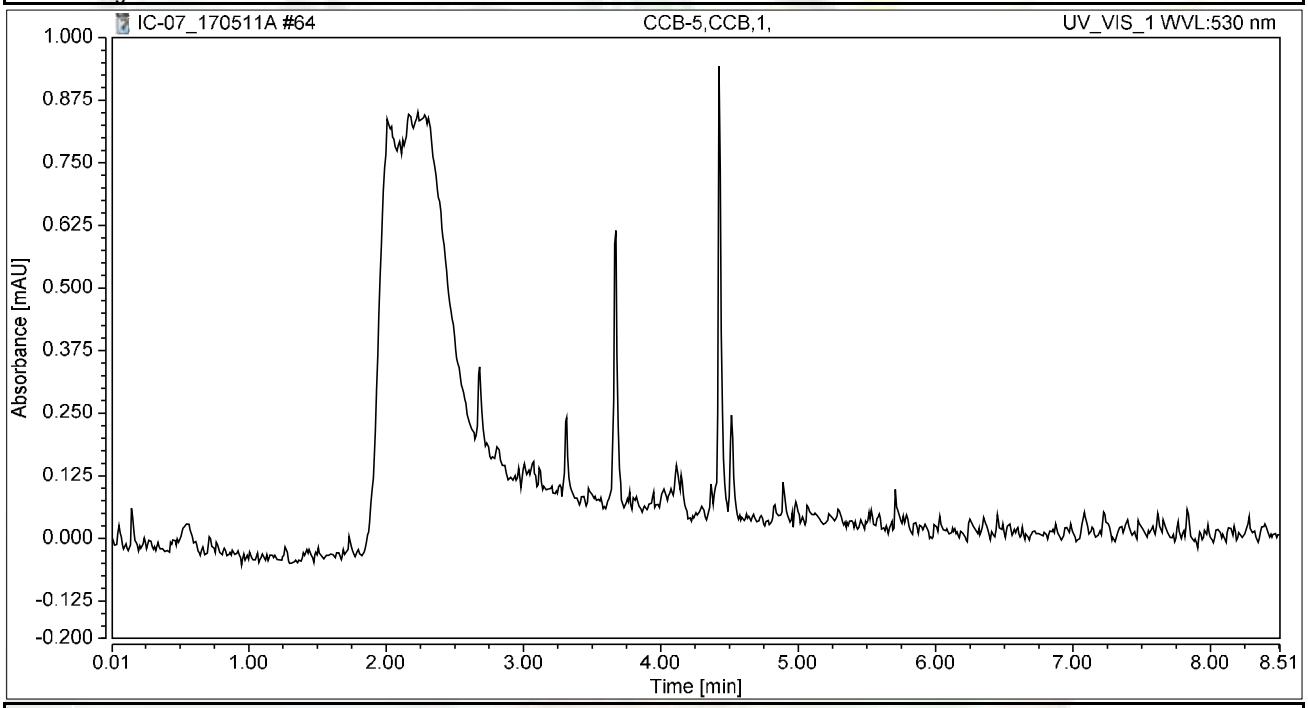
Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:31**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

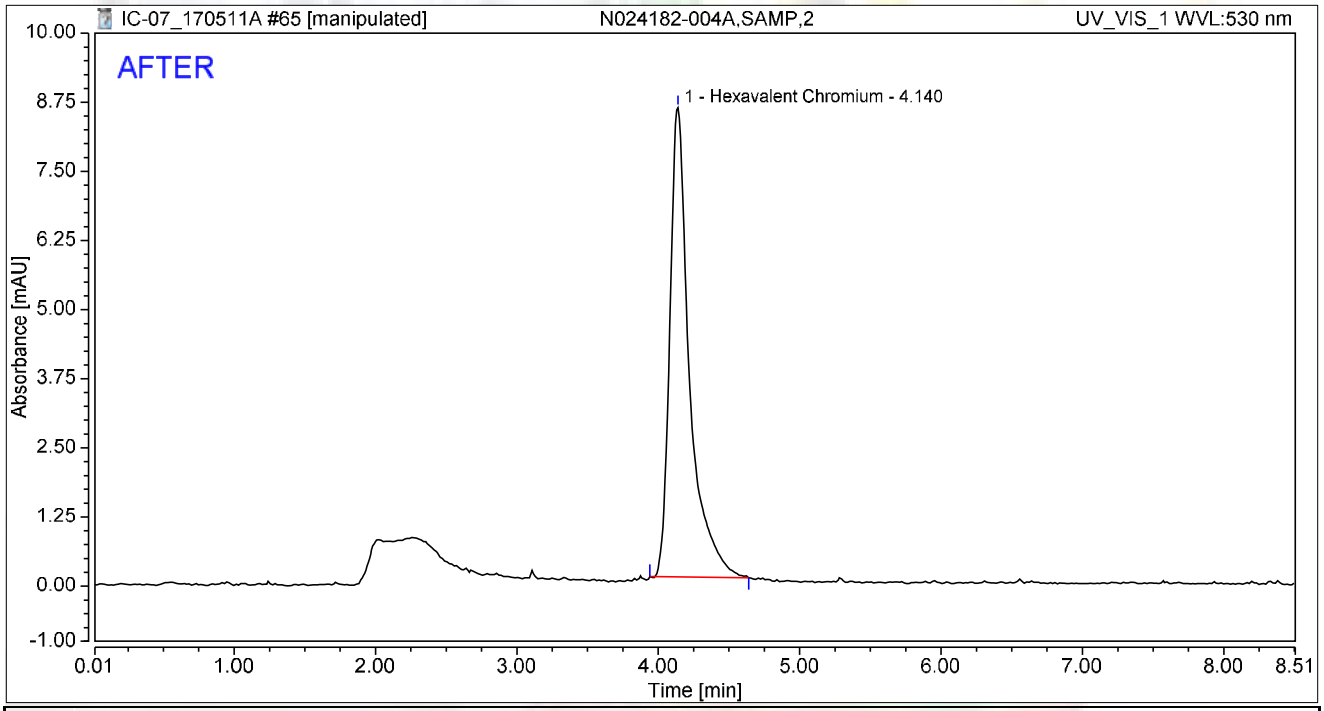
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024182-004A,SAMP,2**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.365	8.484	100.00	100.00	5.5988
Total:			**1.365**	**8.484**	**100.00**	**100.00**	

rba 5/16/2017

Reviewed by: Nancy 5/24/2017

My first report/Integration

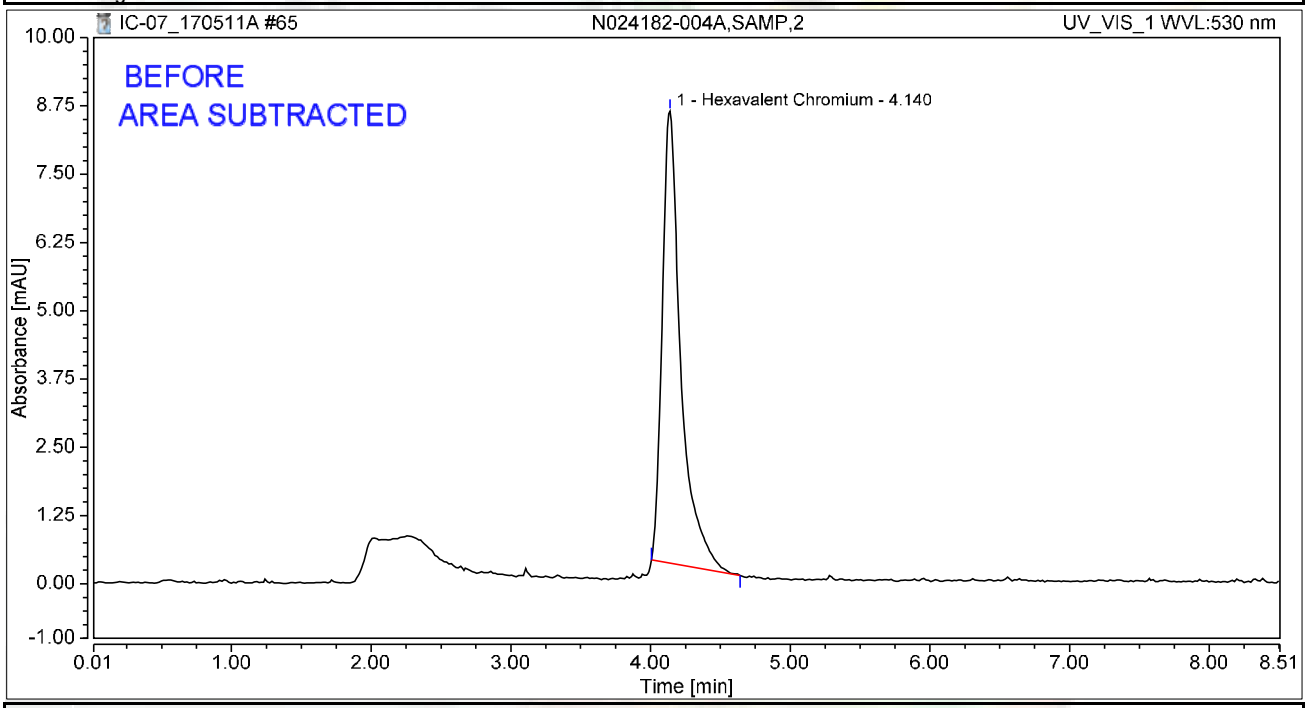
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024182-004A,SAMP,2**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:41**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.278	8.274	100.00	100.00	5.2420
Total:			**1.278**	**8.274**	**100.00**	**100.00**	

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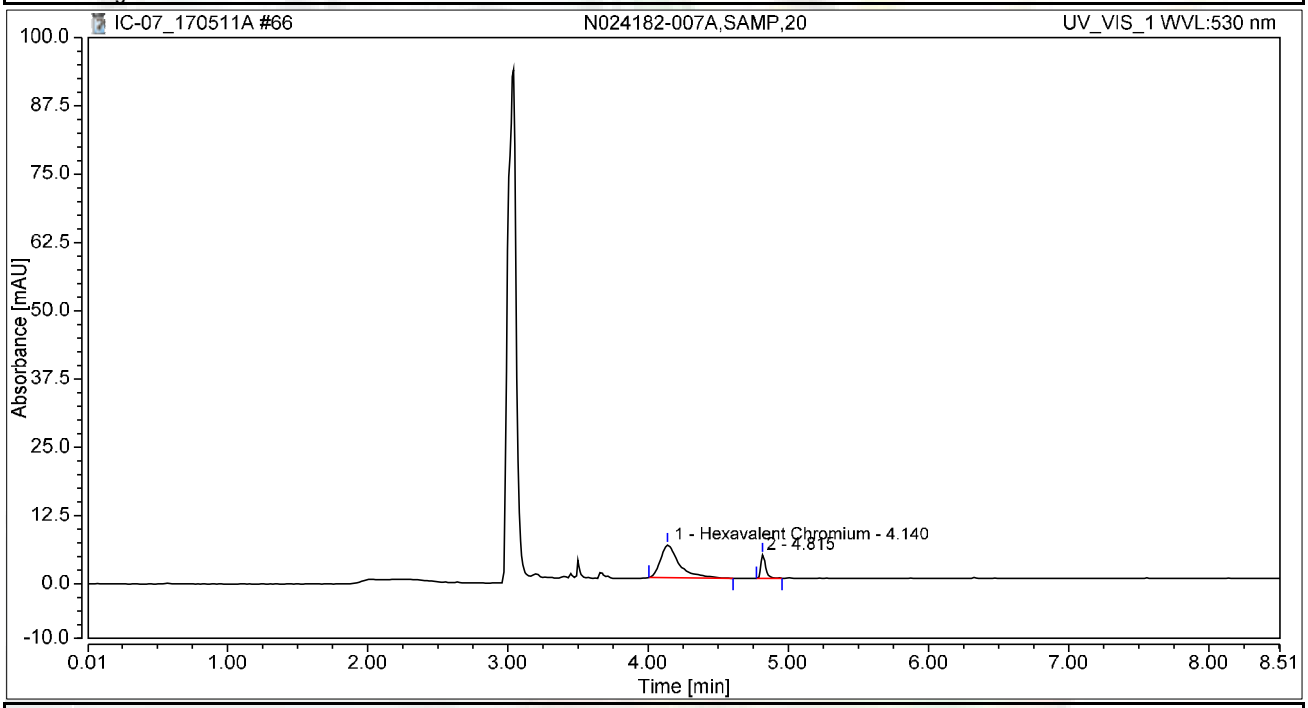
Chromatogram and Results

Injection Details

Injection Name:	**N024182-007A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

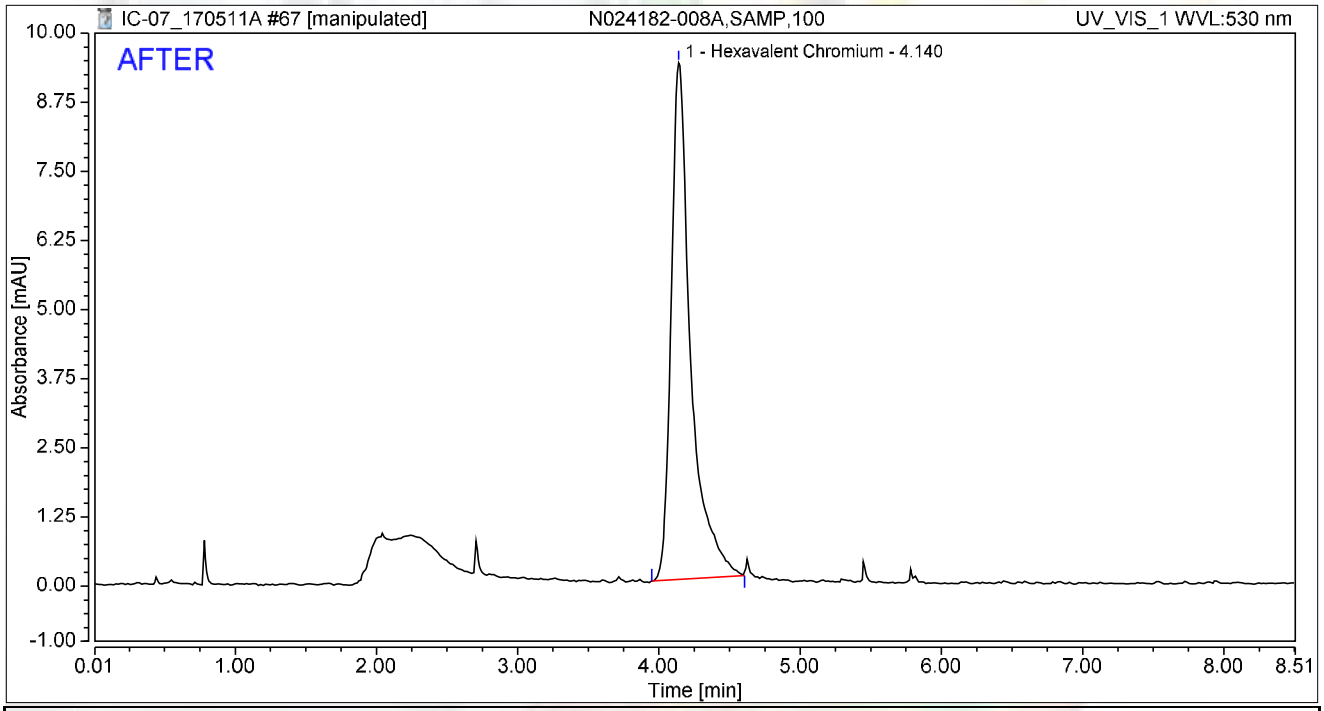
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.915	5.942	83.73	58.07	3.7534
2		4.815	0.178	4.290	16.27	41.93	n.a.
Total:			**1.093**	**10.232**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024182-008A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.496	9.342	100.00	100.00	6.1354
Total:			**1.496**	**9.342**	**100.00**	**100.00**	

rba 5/16/2017

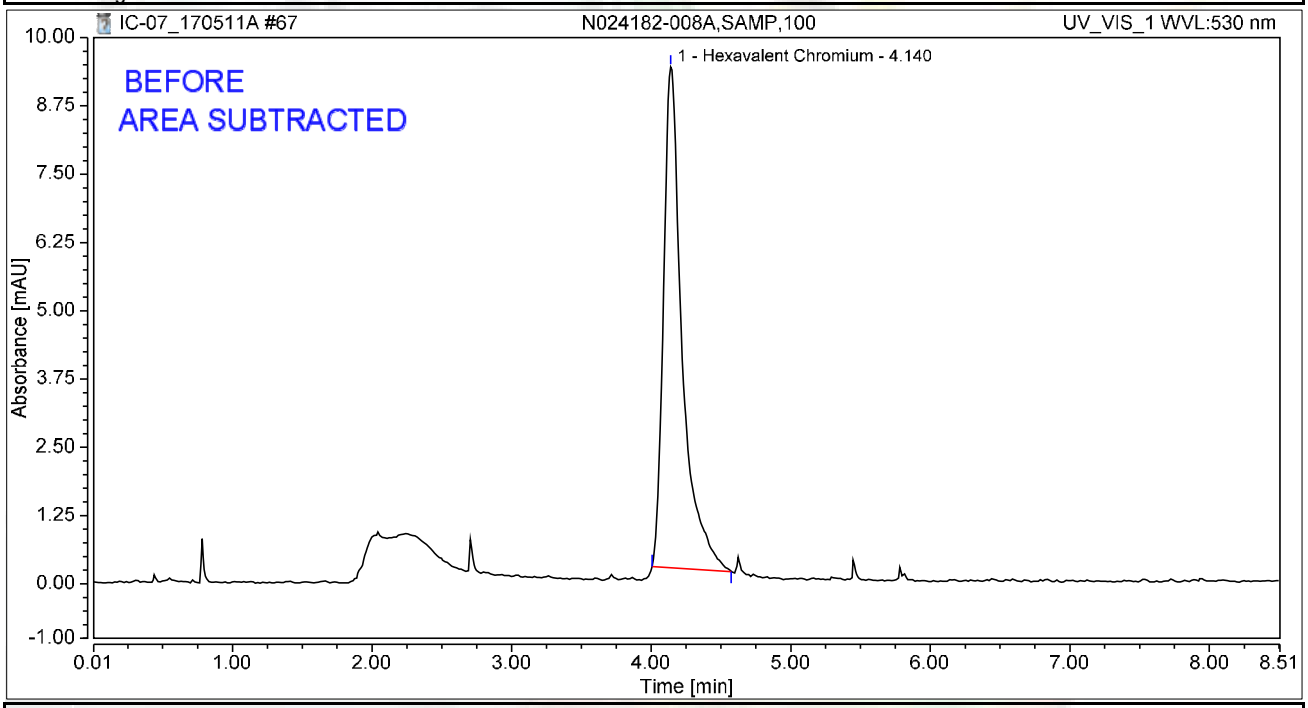
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-008A,SAMP,100**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 17:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.419	9.166	100.00	100.00	5.8192
Total:			**1.419**	**9.166**	**100.00**	**100.00**	

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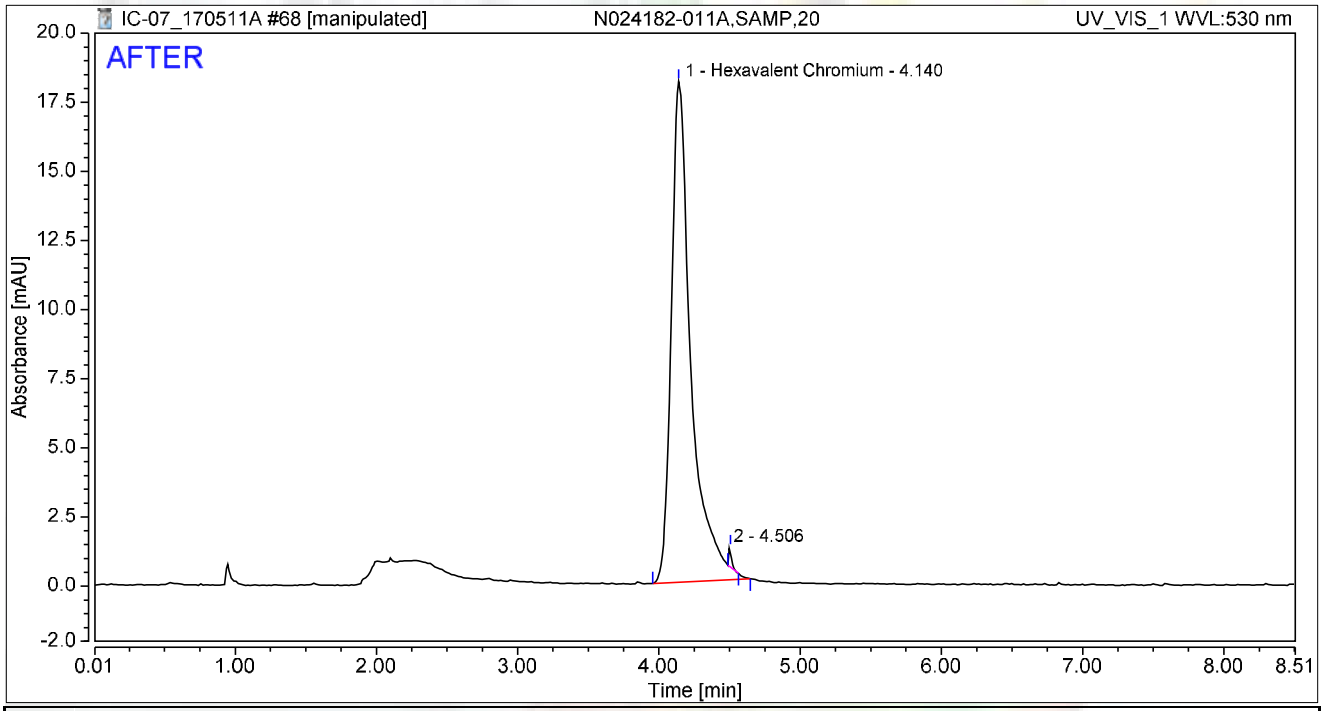
Chromatogram and Results

Injection Details

Injection Name:	**N024182-011A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.933	18.122	99.48	96.19	12.0276
2		4.506	0.015	0.718	0.52	3.81	n.a.
Total:			**2.949**	**18.840**	**100.00**	**100.00**	

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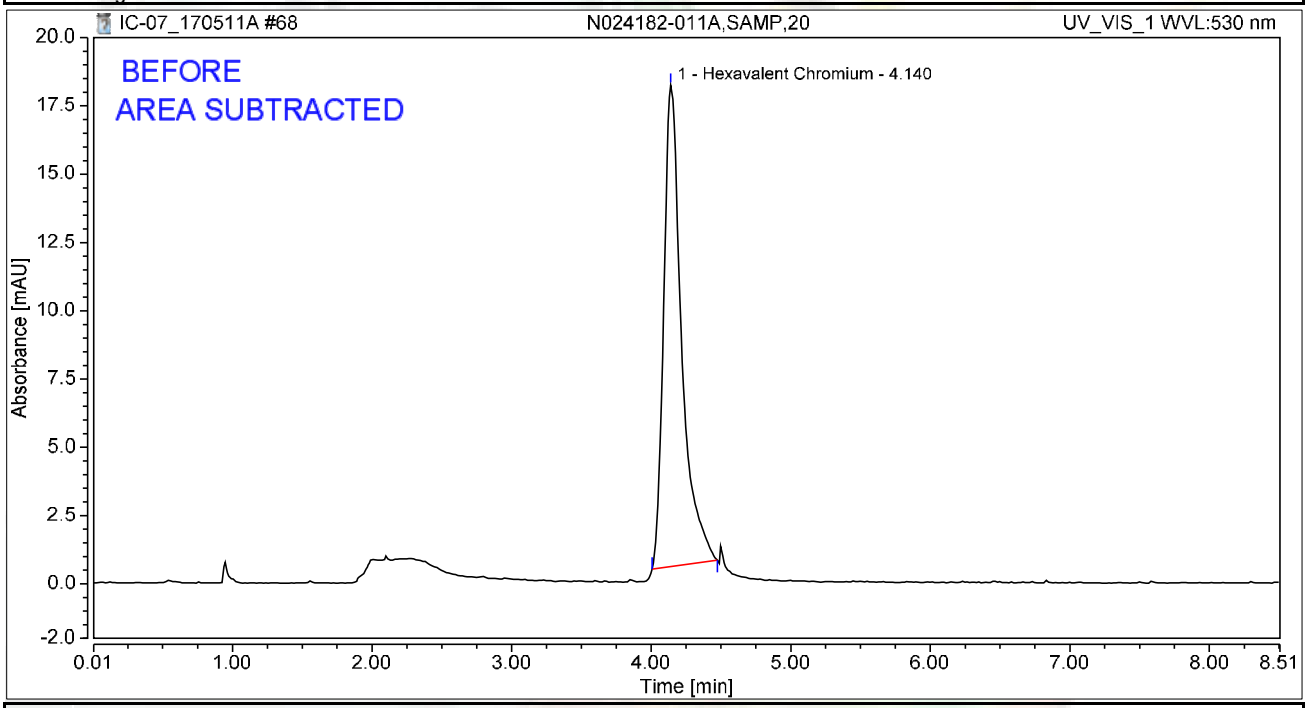
Reviewed by: 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-011A,SAMP,20**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.631	17.629	100.00	100.00	10.7876
Total:			**2.631**	**17.629**	**100.00**	**100.00**	

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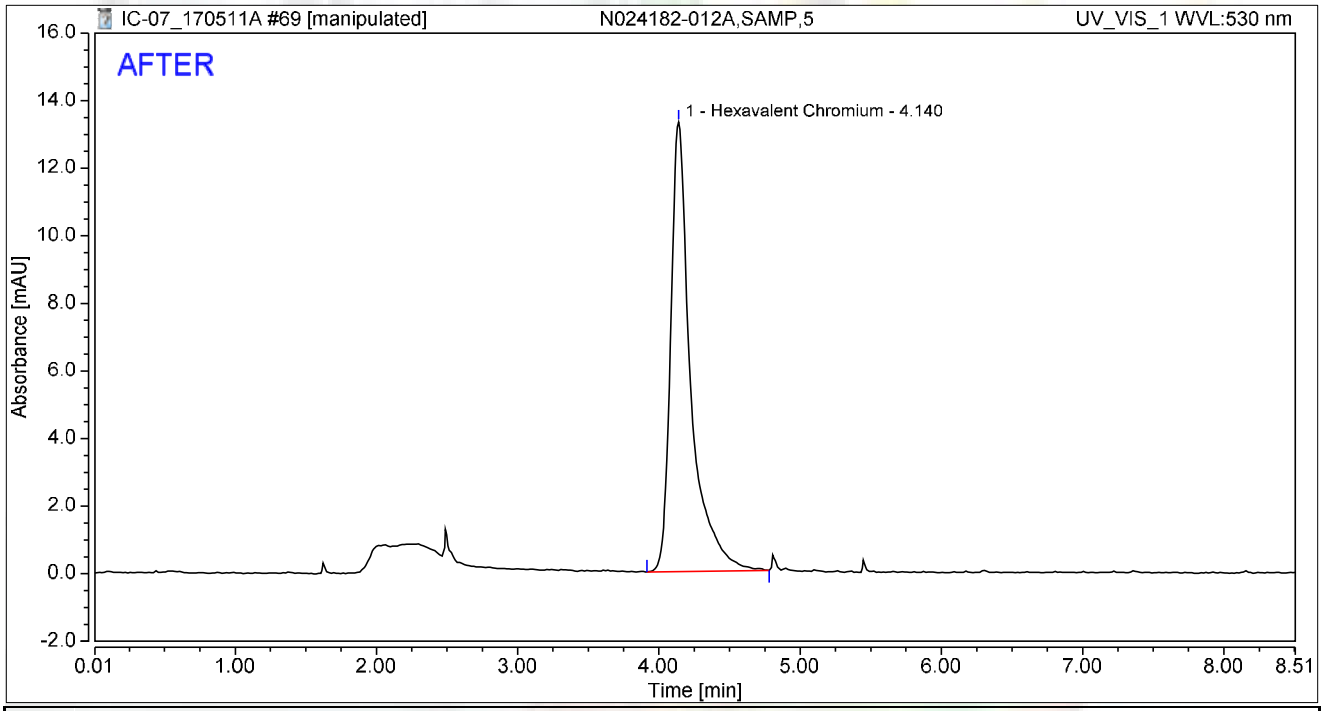
Chromatogram and Results

Injection Details

Injection Name:	**N024182-012A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.190	13.296	100.00	100.00	8.9786
Total:			**2.190**	**13.296**	**100.00**	**100.00**	

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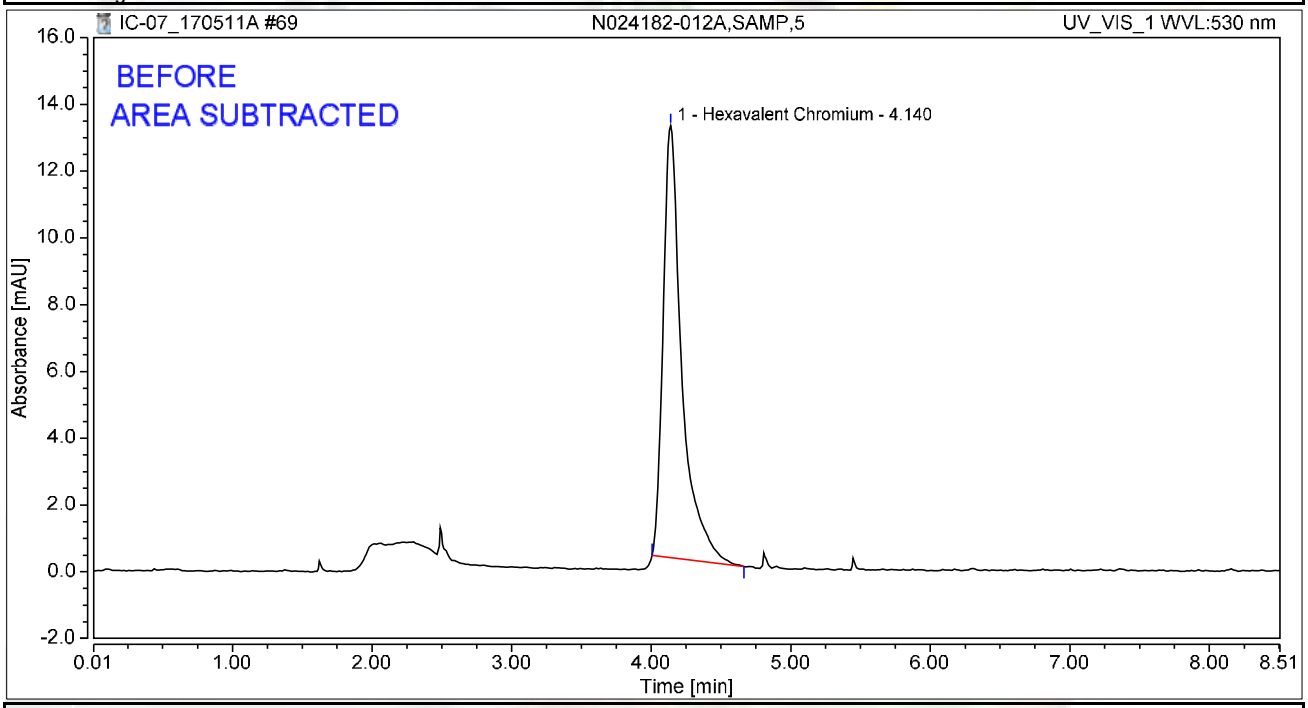
Chromatogram and Results

Injection Details

Injection Name:	**N024182-012A,SAMP,5**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.014	12.942	100.00	100.00	8.2566
Total:			**2.014**	**12.942**	**100.00**	**100.00**	

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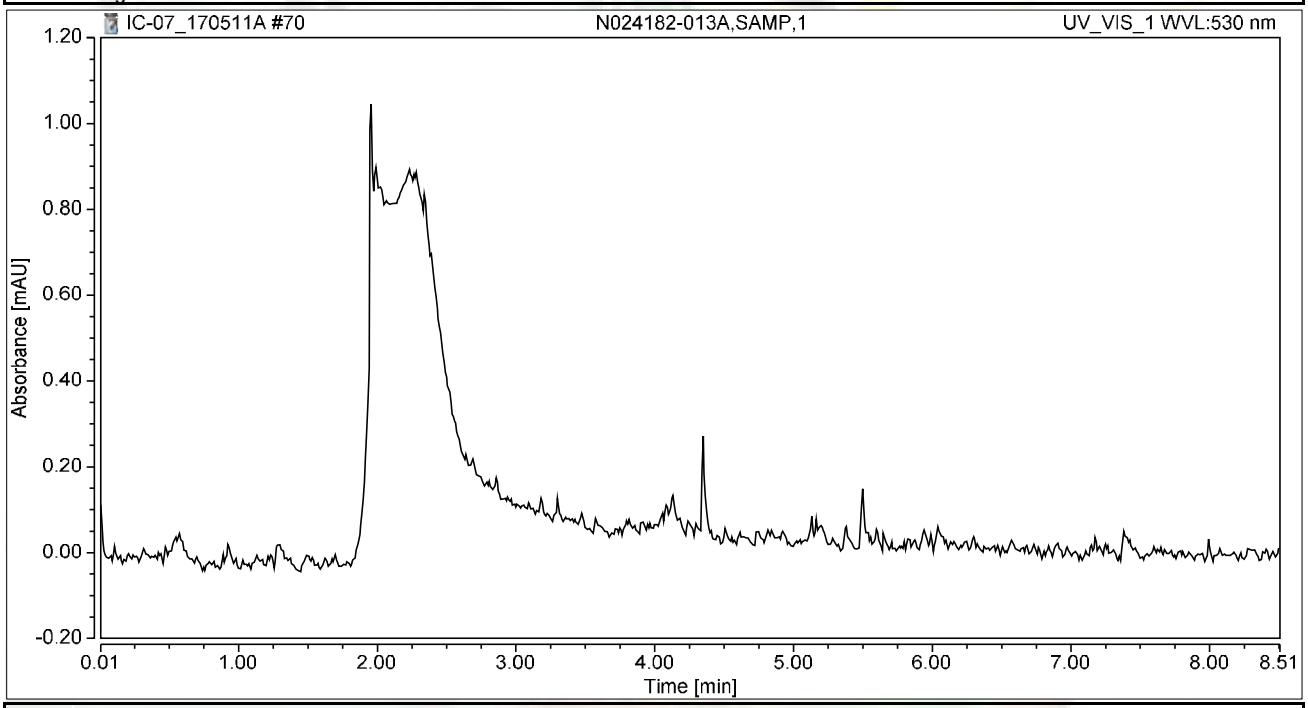
Chromatogram and Results

Injection Details

Injection Name:	**N024182-013A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

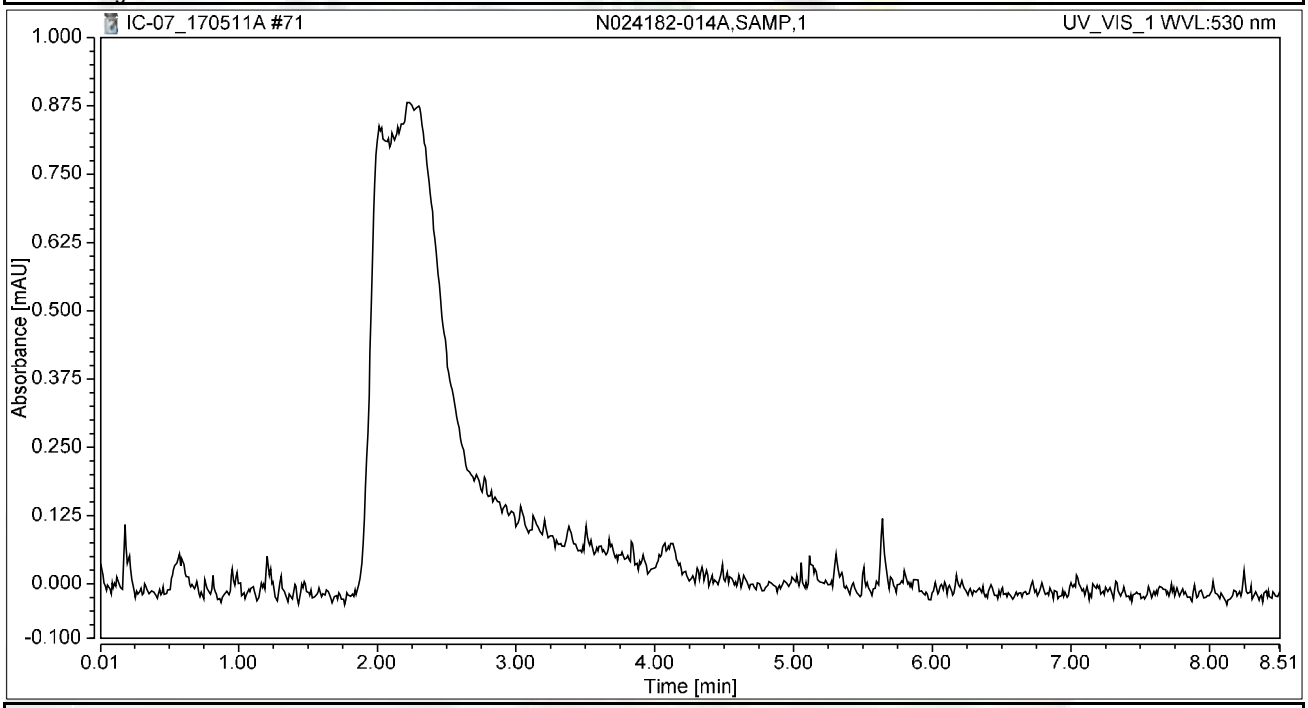
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024182-014A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

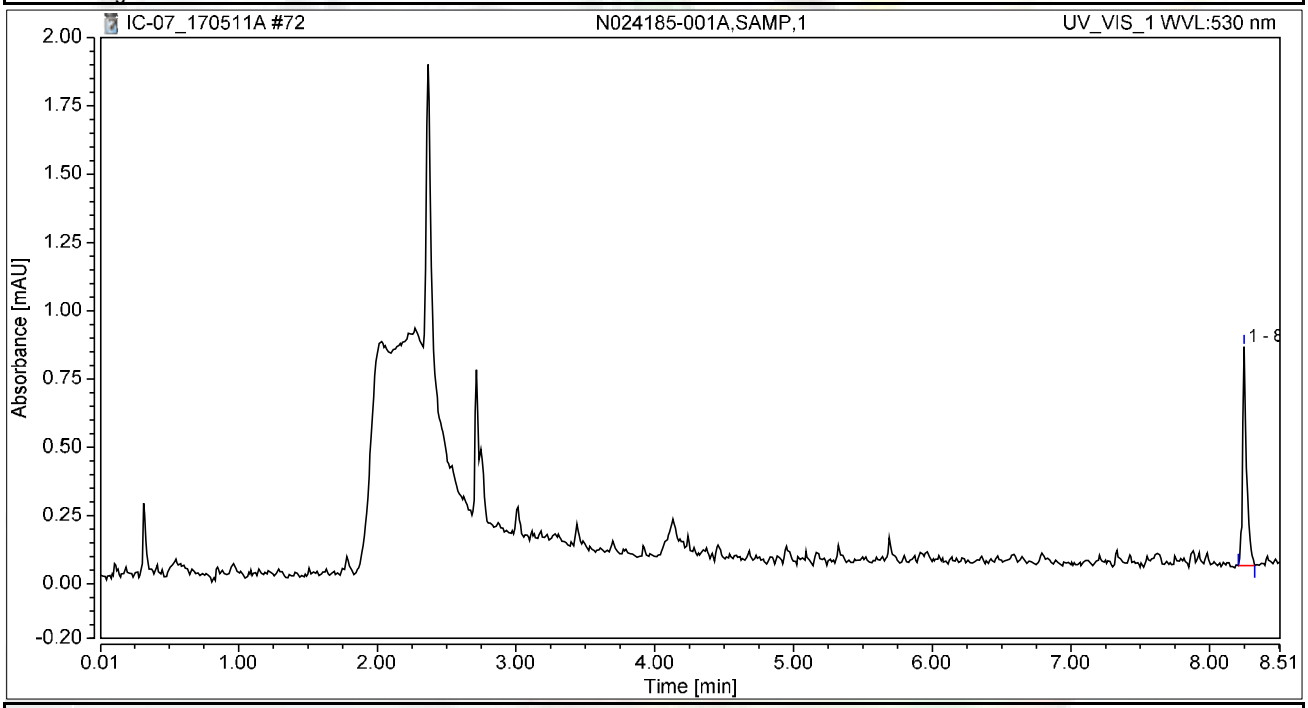
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024185-001A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

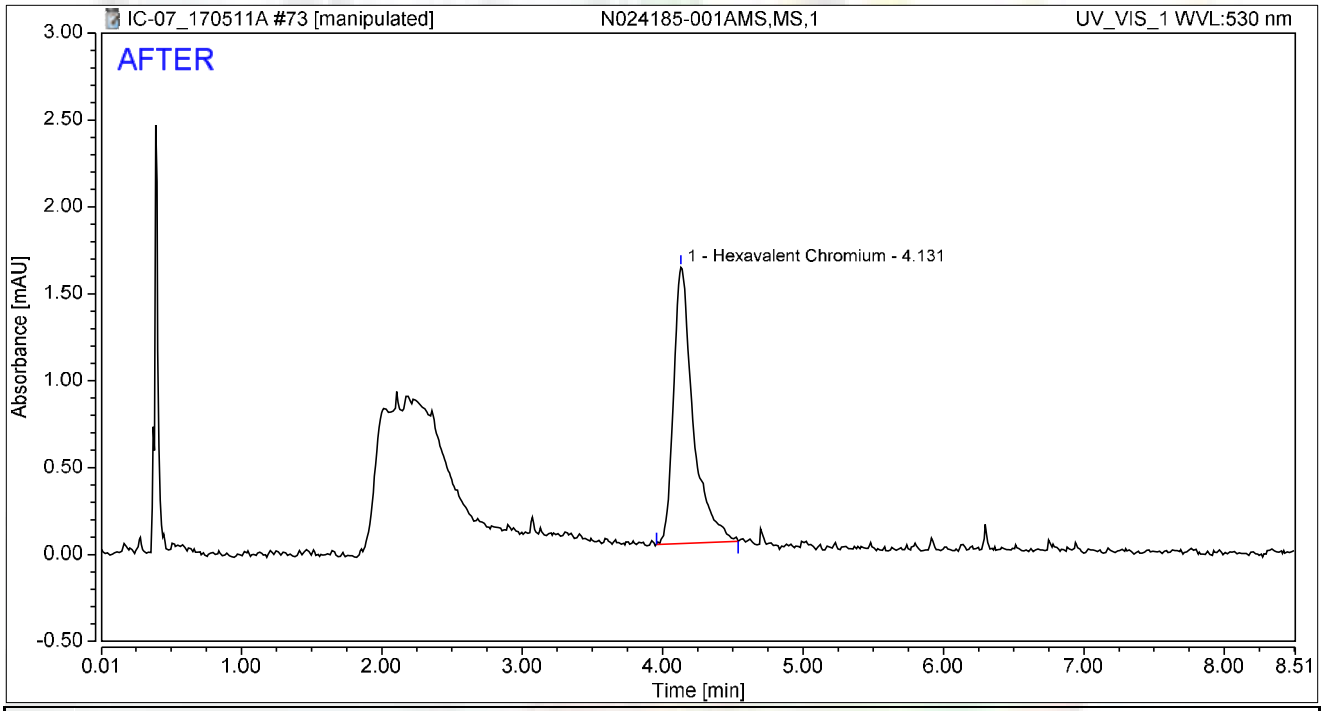
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		8.248	0.026	0.802	100.00	100.00	n.a.
Total:			**0.026**	**0.802**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024185-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.259	1.591	100.00	100.00	1.0619
Total:			**0.259**	**1.591**	**100.00**	**100.00**	

rba 5/16/2017

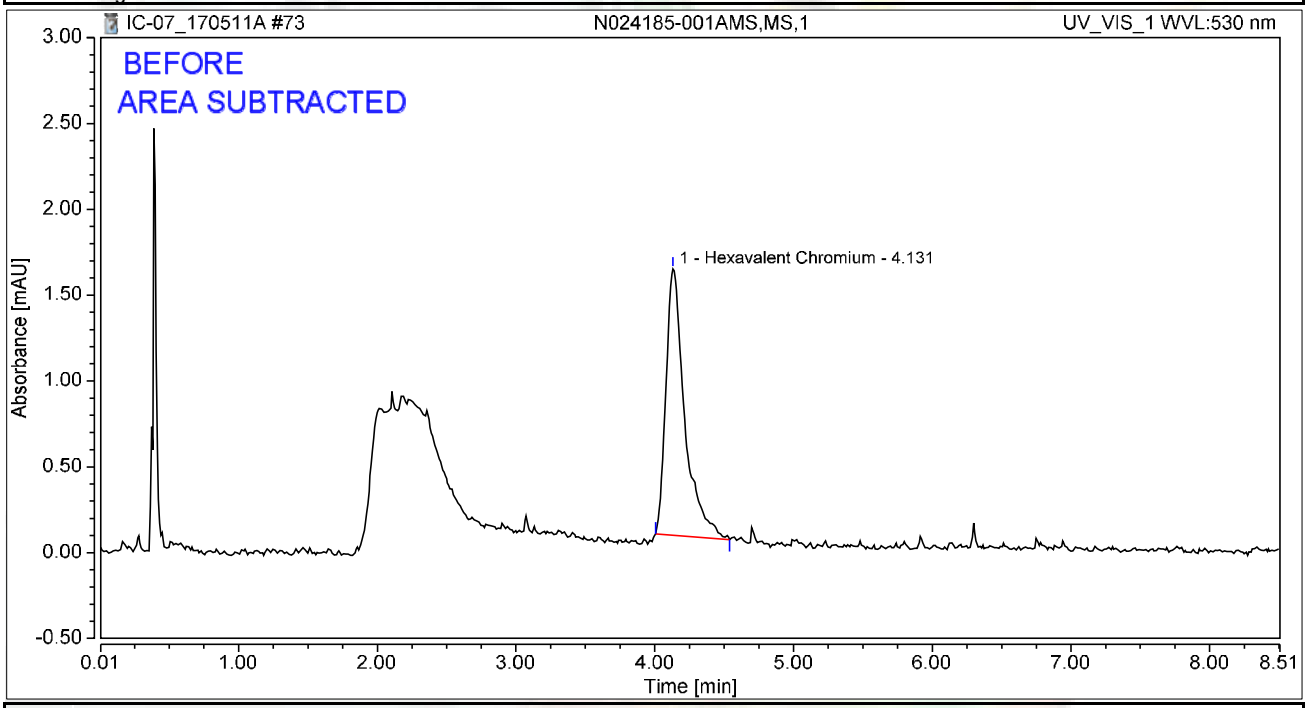
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024185-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 18:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.244	1.552	100.00	100.00	1.0010
Total:			**0.244**	**1.552**	**100.00**	**100.00**	

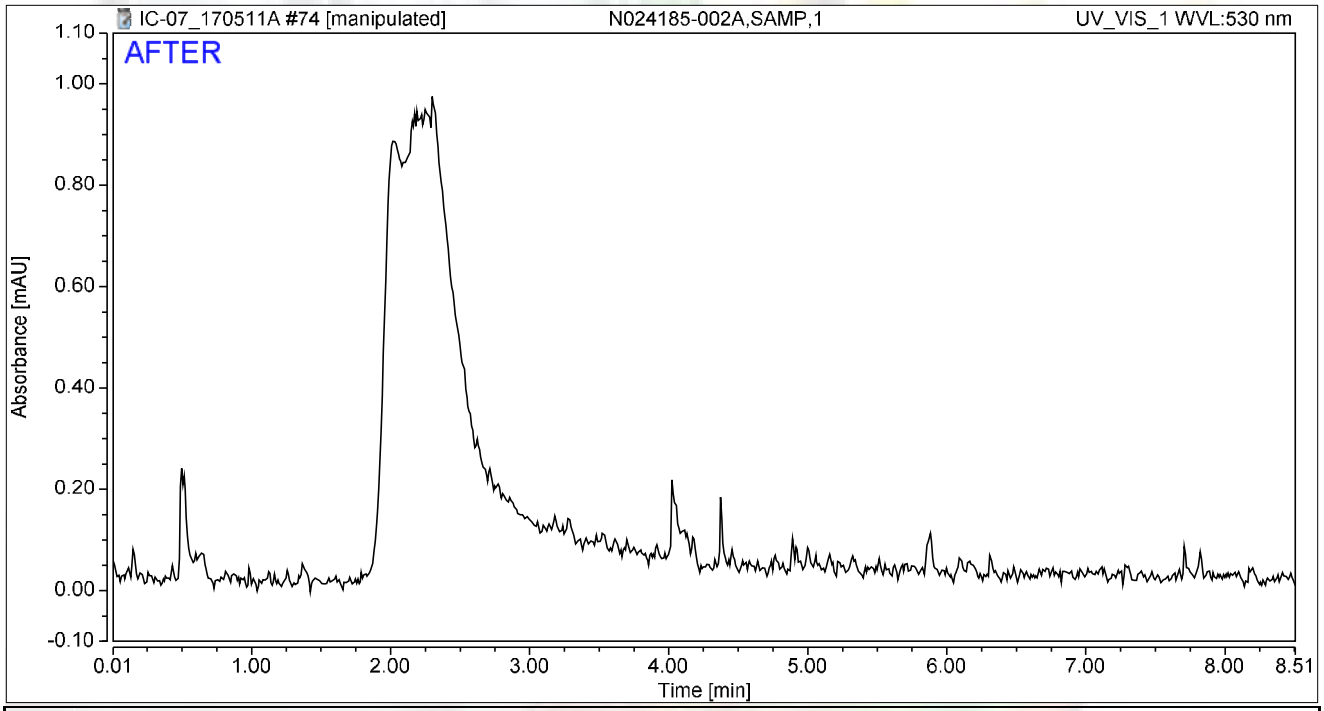
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024185-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

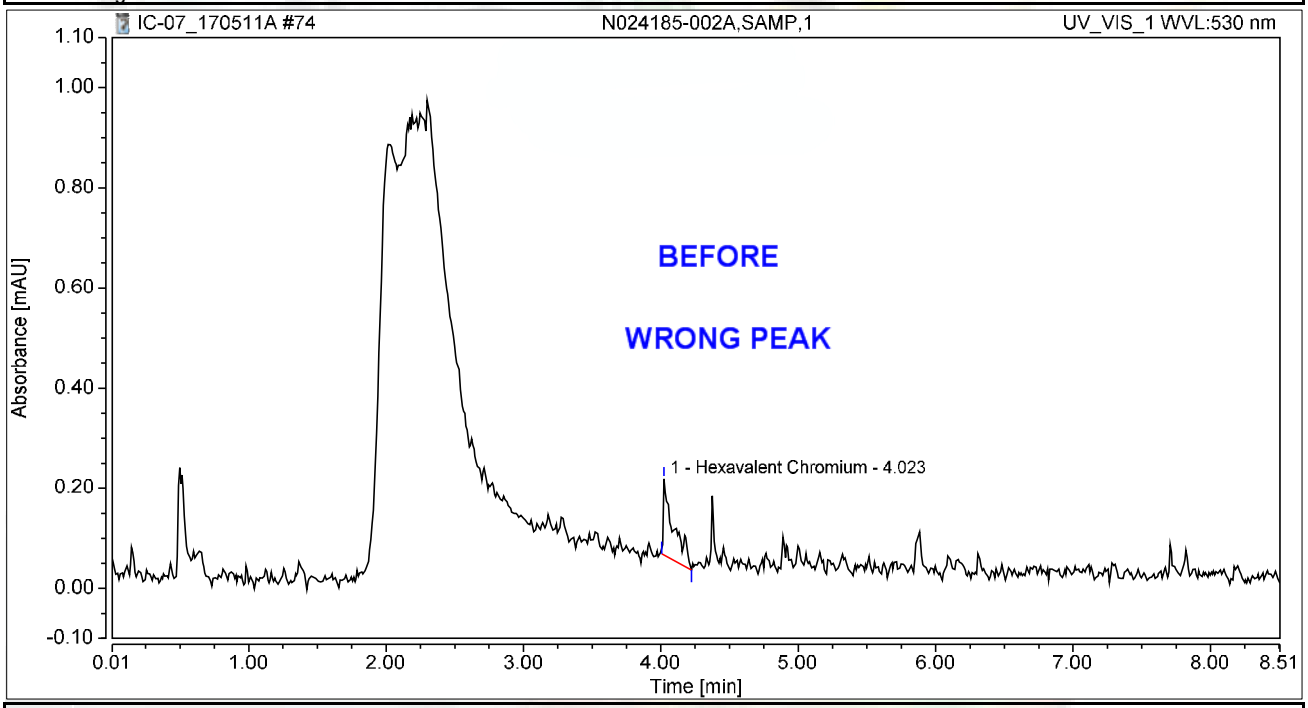
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024185-002A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.023	0.013	0.152	100.00	100.00	0.0532
Total:			**0.013**	**0.152**	**100.00**	**100.00**	

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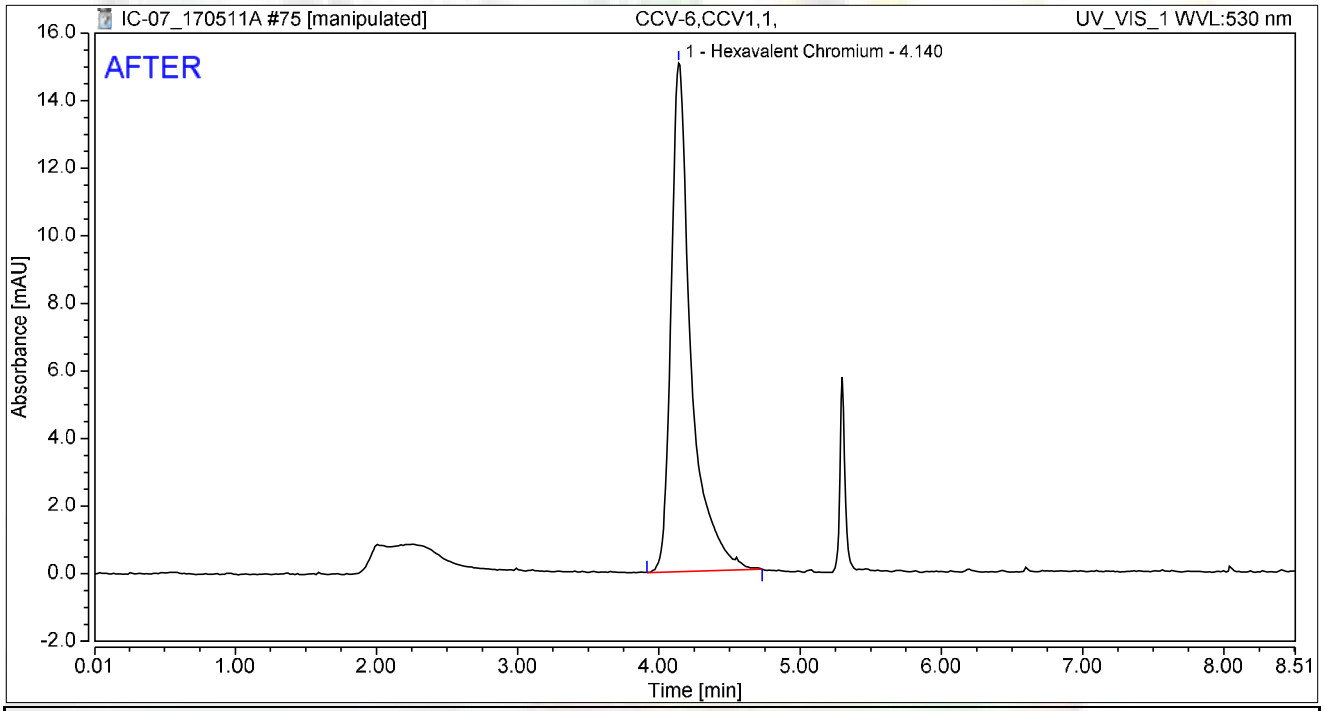
Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.475	15.055	100.00	100.00	10.1471
Total:			**2.475**	**15.055**	**100.00**	**100.00**	

rba 5/16/2017

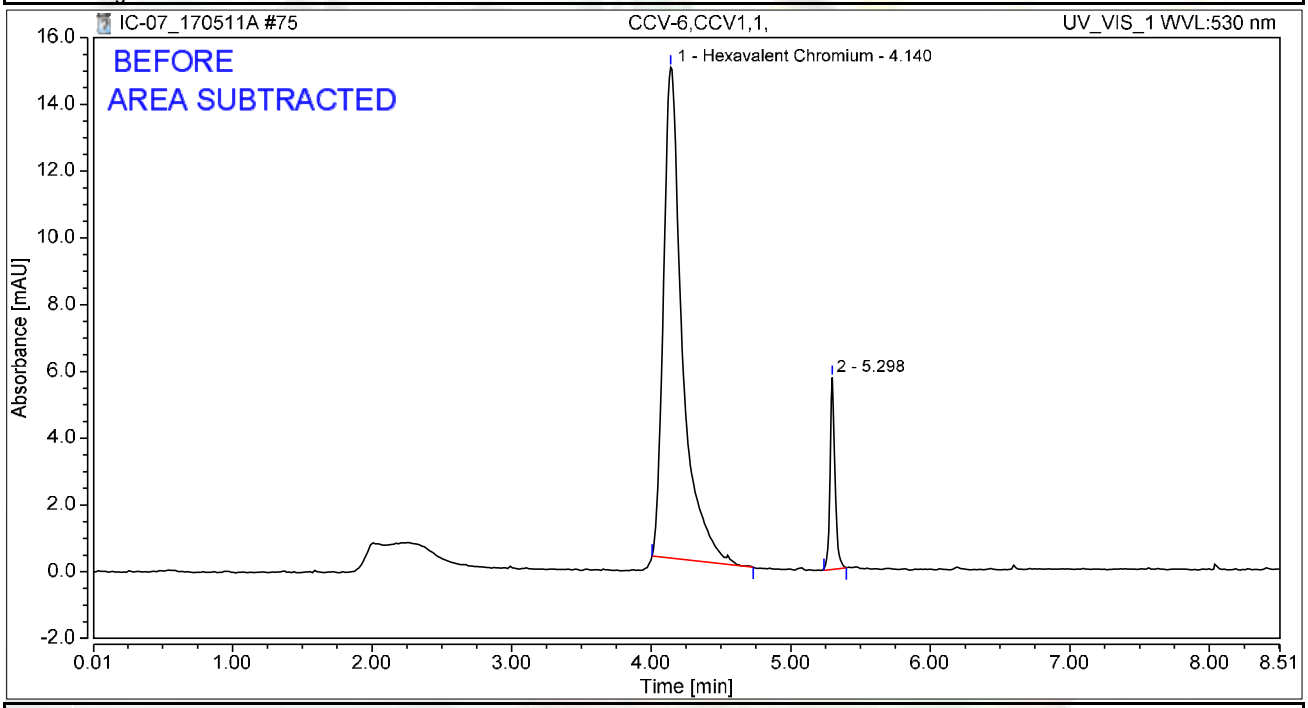
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-6,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	2.312	14.710	90.58	71.90	9.4795
2		5.298	0.240	5.749	9.42	28.10	n.a.
Total:			**2.552**	**20.459**	**100.00**	**100.00**	

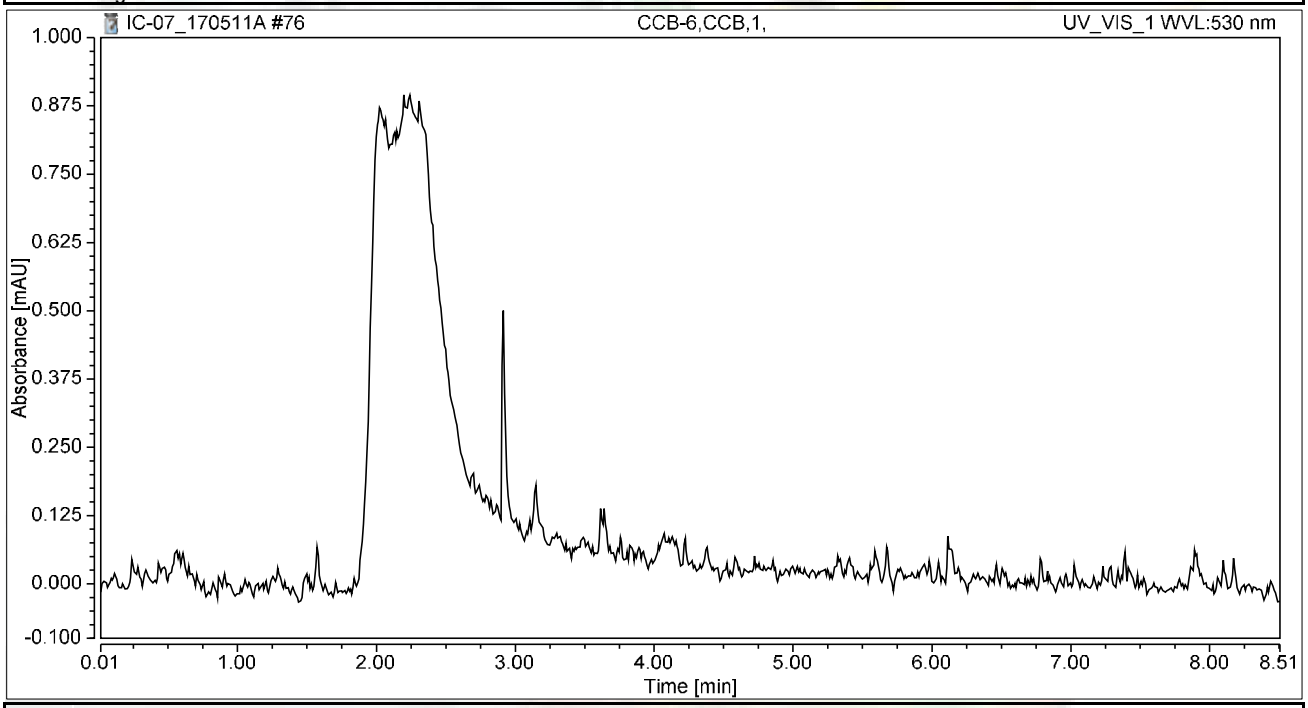
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-6,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

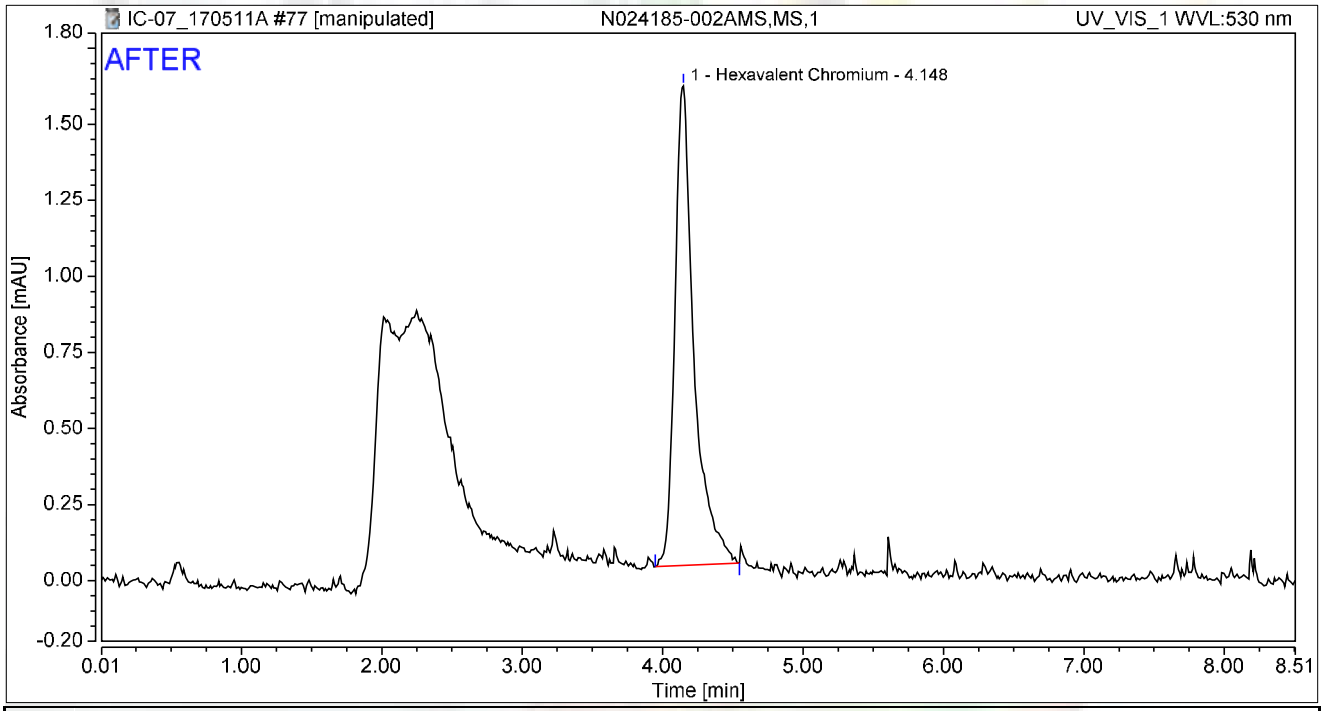
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024185-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.249	1.577	100.00	100.00	1.0202
Total:			**0.249**	**1.577**	**100.00**	**100.00**	

rba 5/16/2017

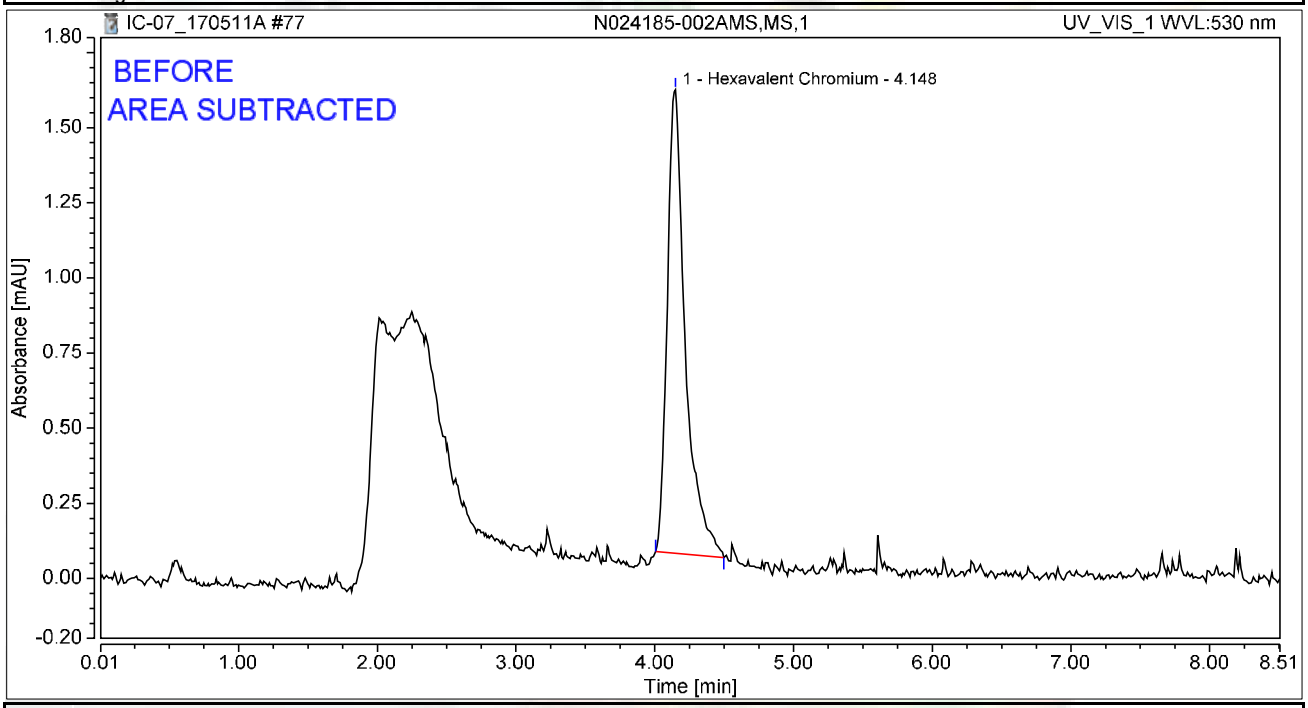
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024185-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.234	1.543	100.00	100.00	0.9585
Total:			**0.234**	**1.543**	**100.00**	**100.00**	

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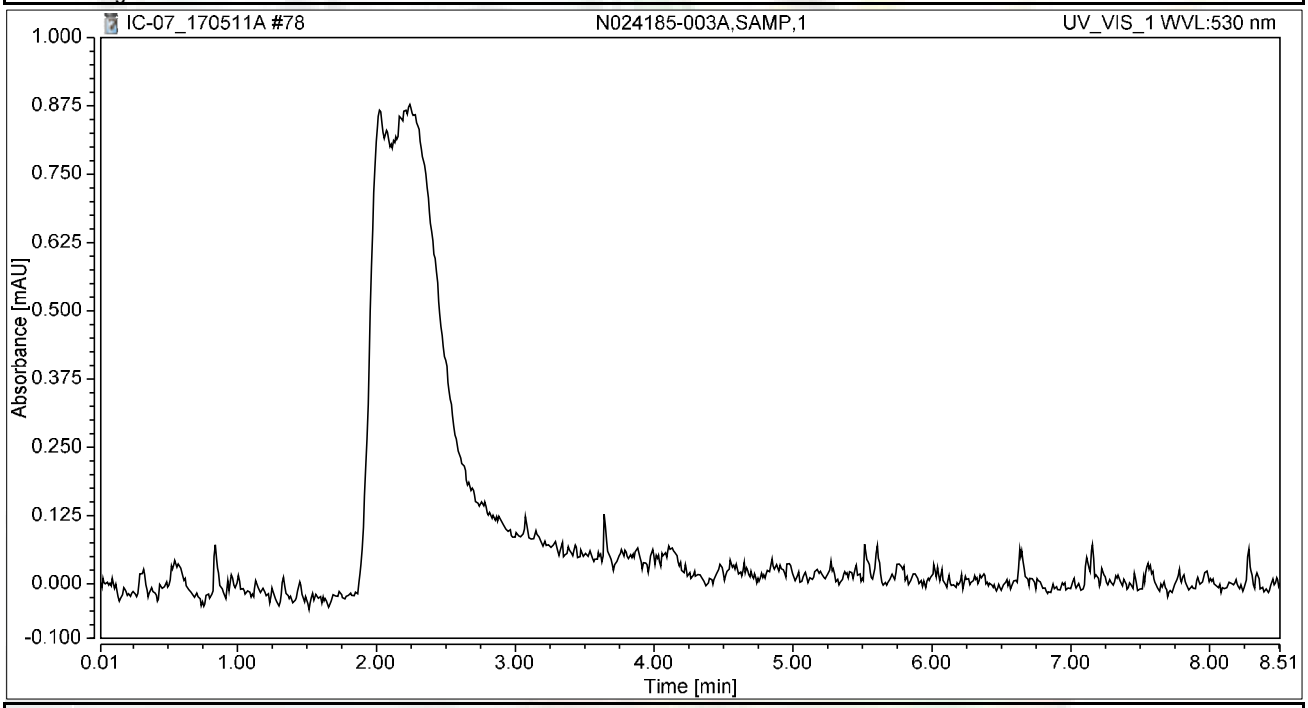
Chromatogram and Results

Injection Details

Injection Name:	**N024185-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

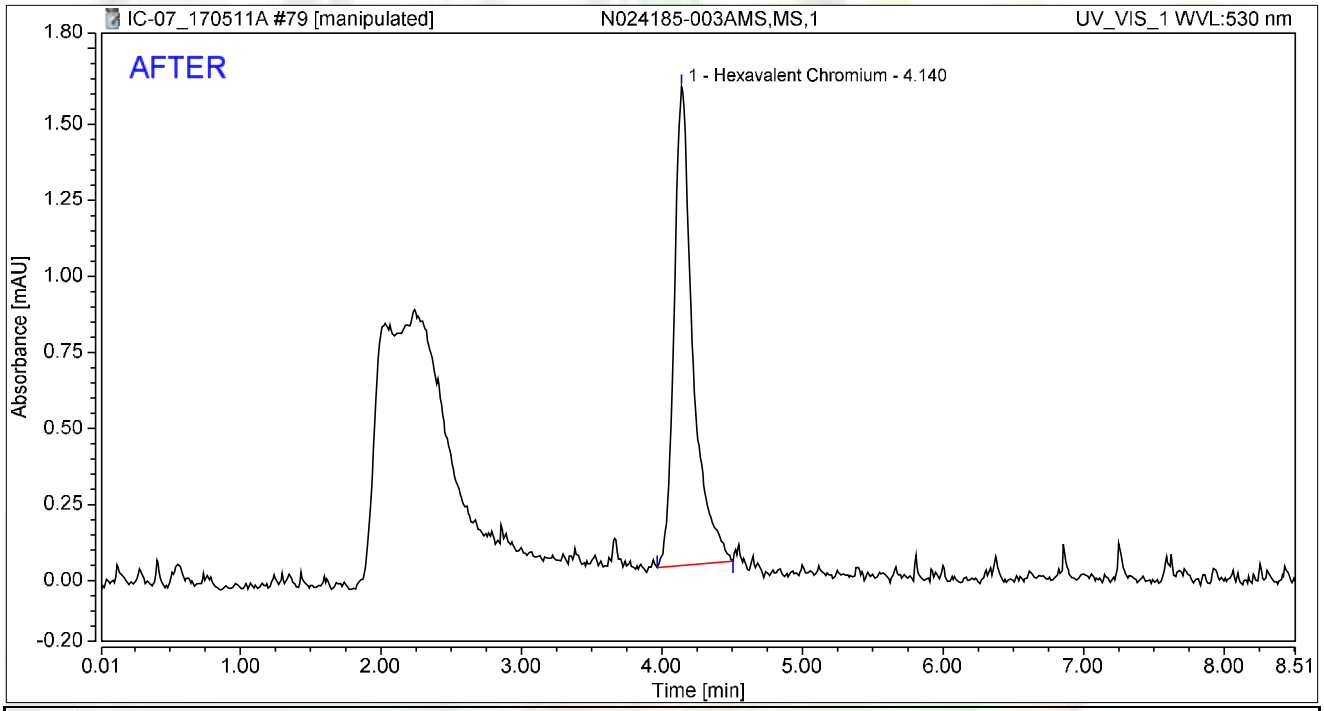
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024185-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.243	1.575	100.00	100.00	0.9975
Total:			**0.243**	**1.575**	**100.00**	**100.00**	

rba 5/16/2017

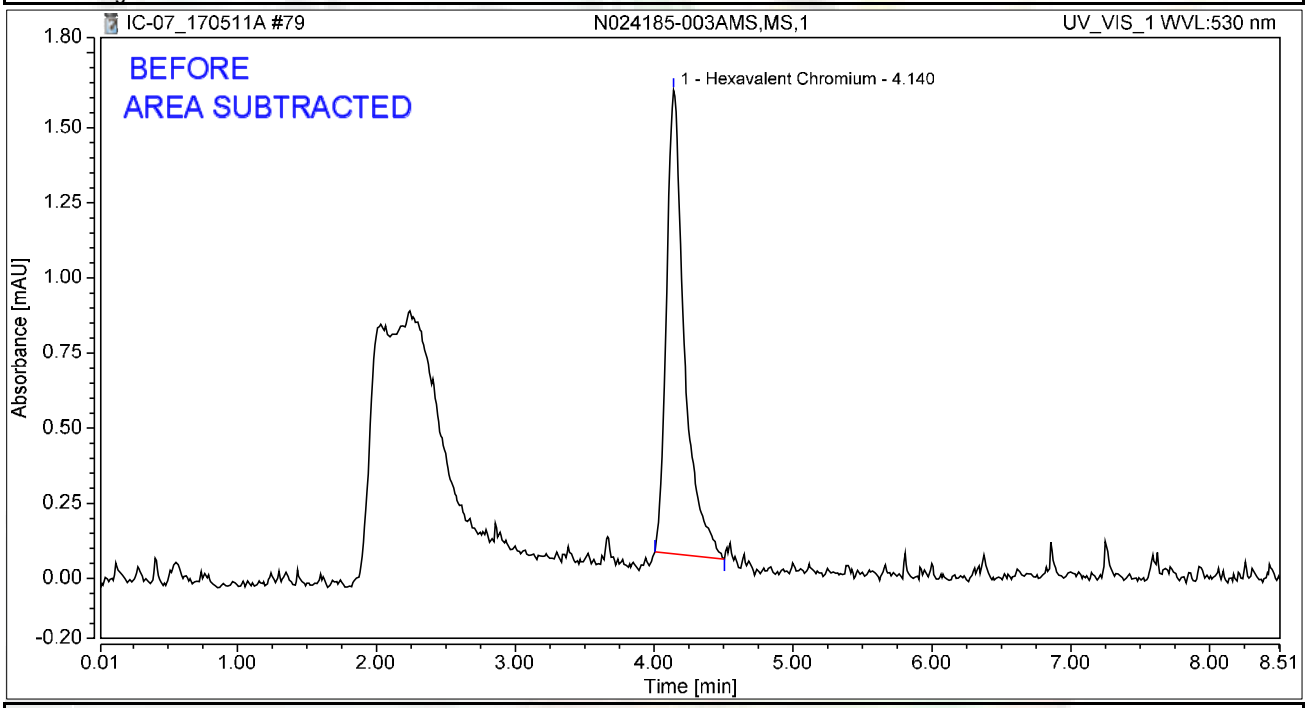
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024185-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 19:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	0.232	1.543	100.00	100.00	0.9497
Total:			**0.232**	**1.543**	**100.00**	**100.00**	

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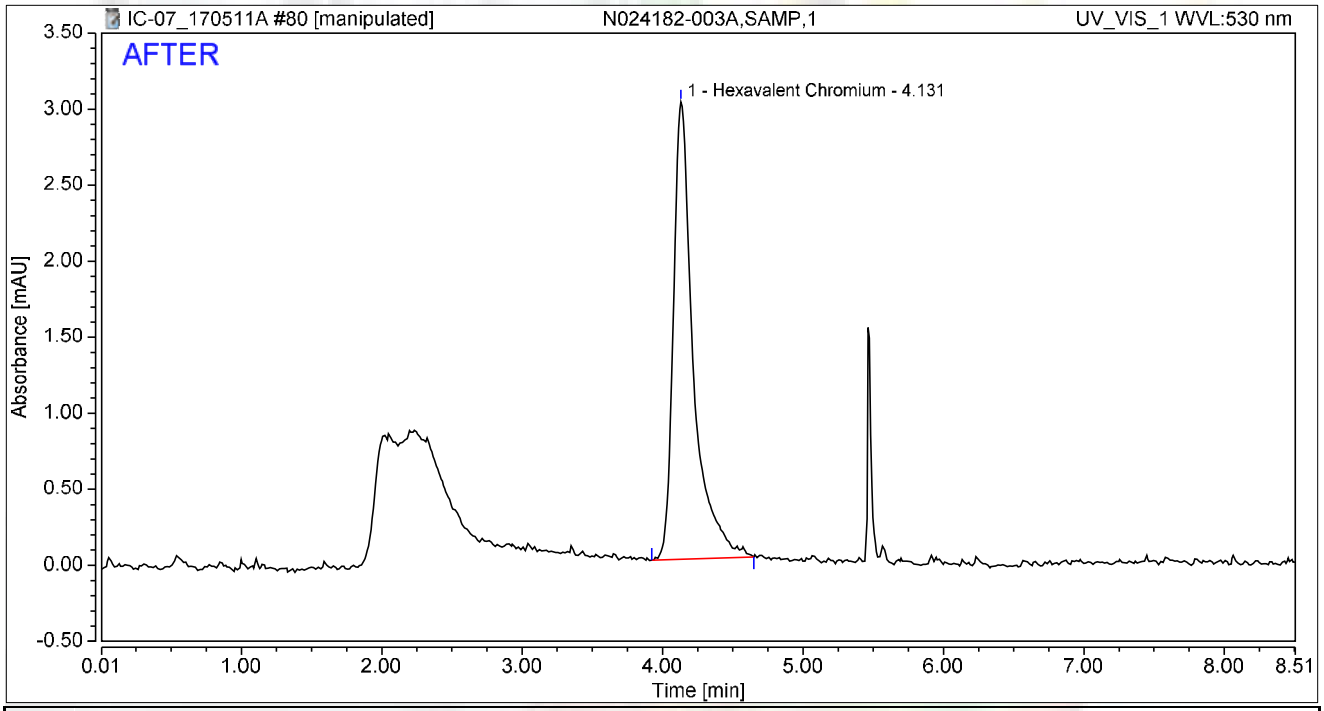
Chromatogram and Results

Injection Details

Injection Name:	**N024182-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.496	3.007	100.00	100.00	2.0335
Total:			**0.496**	**3.007**	**100.00**	**100.00**	

rba 5/16/2017

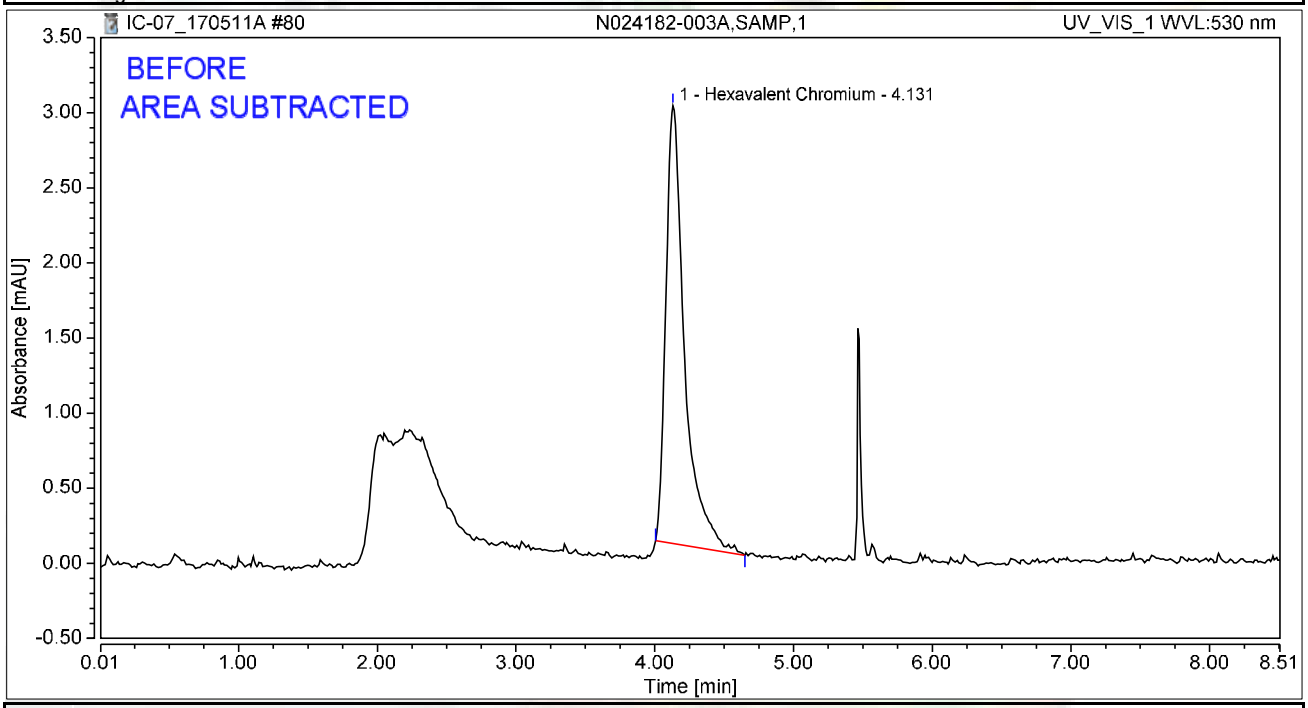
Reviewed by: Nancy 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024182-003A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 20:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.457	2.915	100.00	100.00	1.8740
Total:			**0.457**	**2.915**	**100.00**	**100.00**	

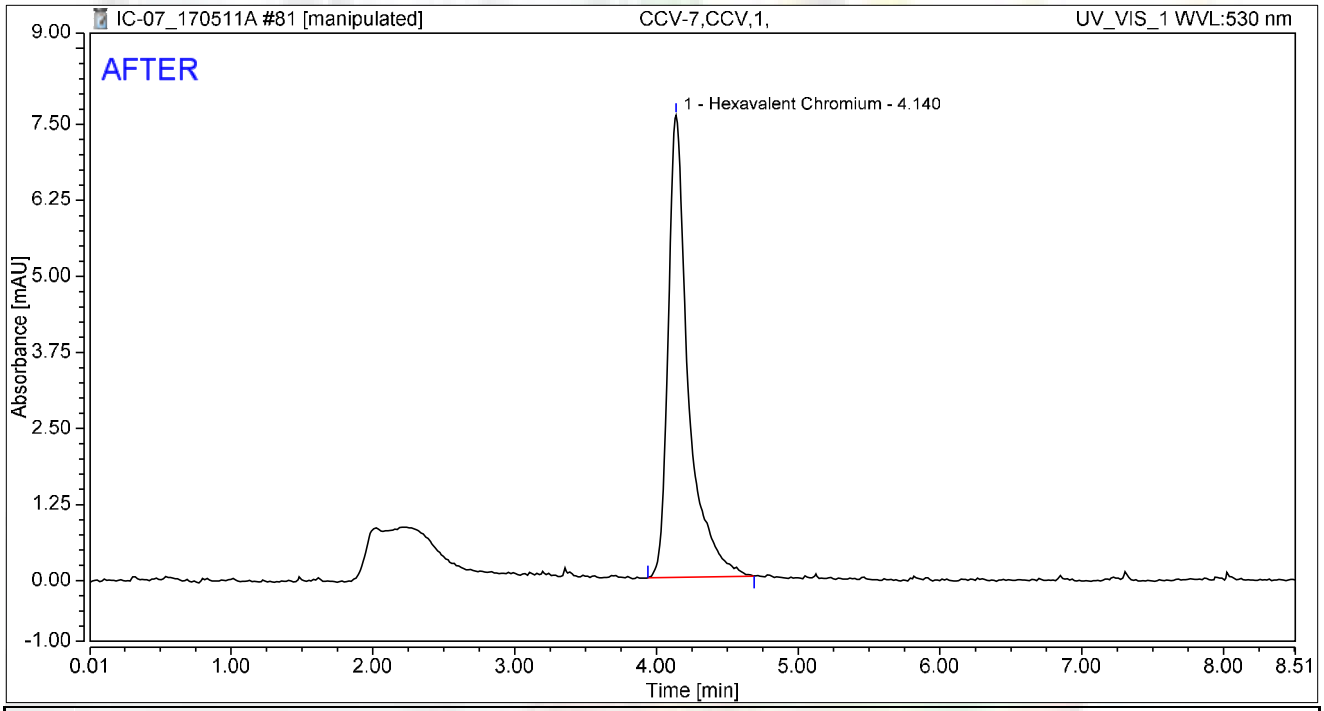
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.250	7.595	100.00	100.00	5.1251
Total:			**1.250**	**7.595**	**100.00**	**100.00**	

rba 5/16/2017

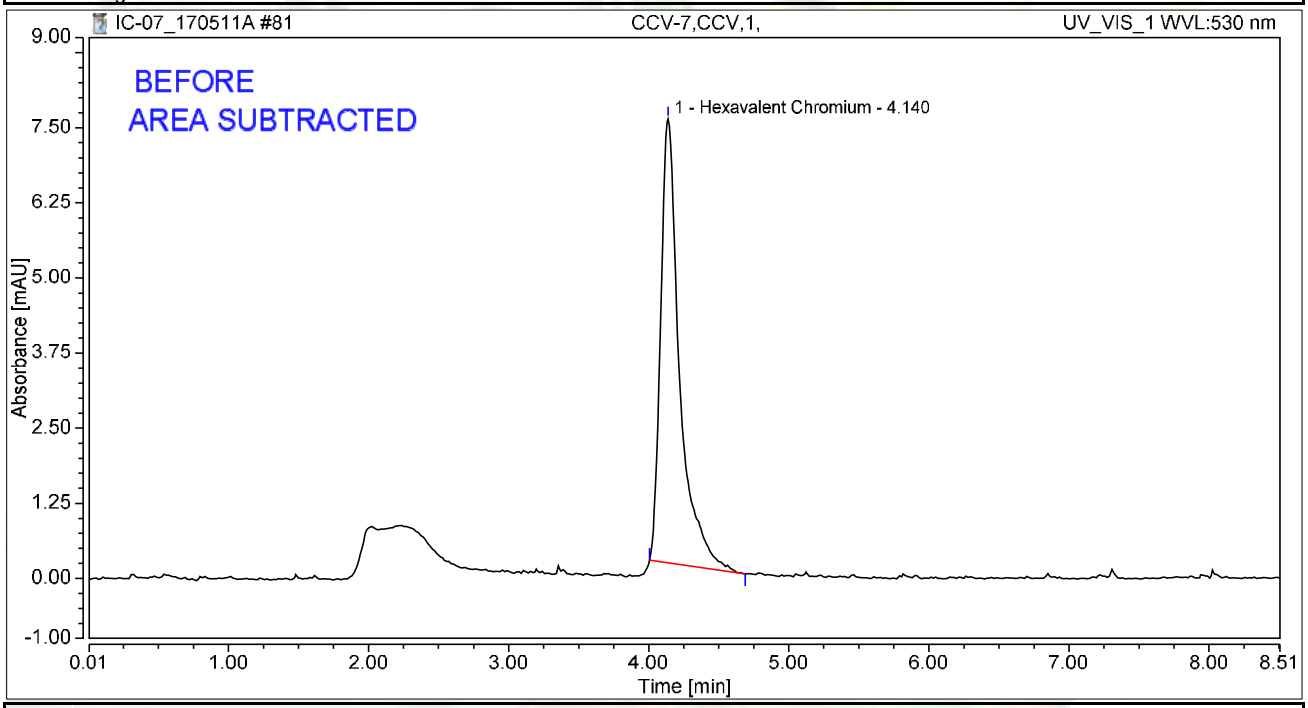
Reviewed by: 5/24/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-7,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 20:12**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.140	1.157	7.388	100.00	100.00	4.7421
Total:			**1.157**	**7.388**	**100.00**	**100.00**	

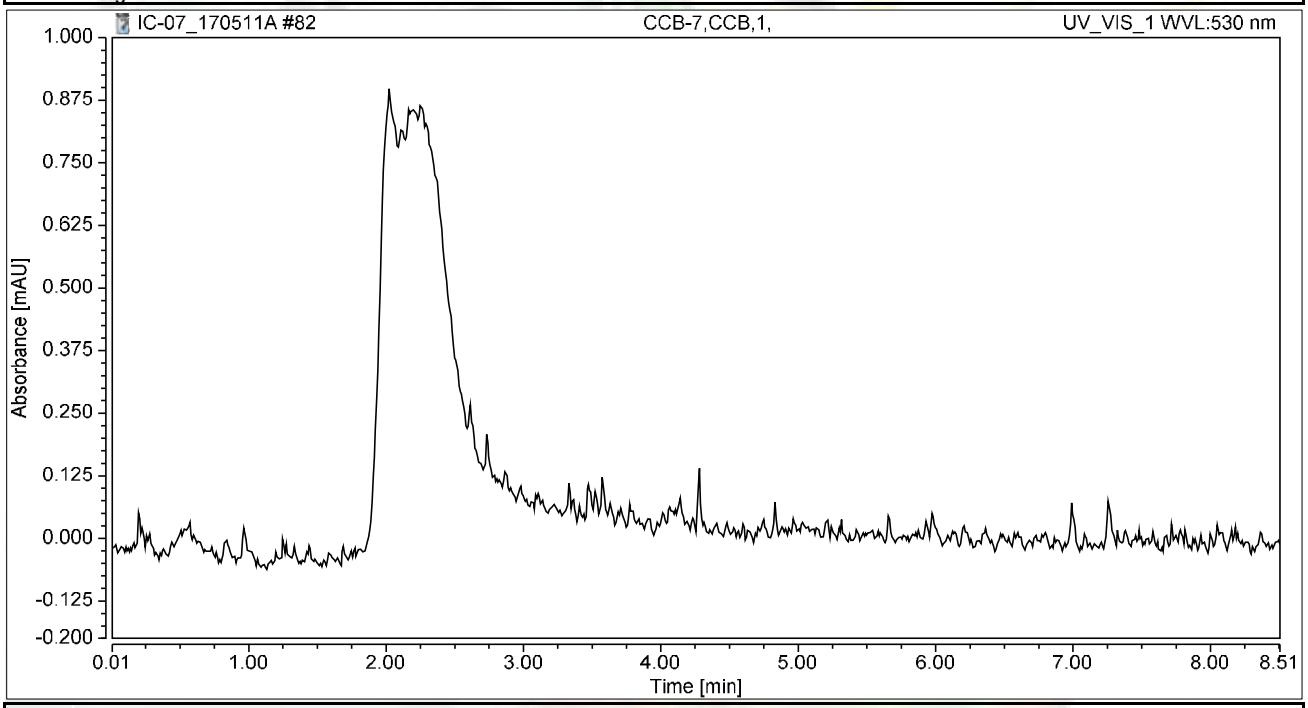
rba 5/16/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-7,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**11/May/17 20:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62184
ASSET #: N024185

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/13/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/24/2017 Date:

2nd Level Reviewer 5/24/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N024185-001B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 0.07274 * 1 * (25/25)

Chromium , ug/L = 0.07274

Reporting results in two significant figures,

Chromium , ug/L = 0.07

Since PQL of Chromium , in ug/L = 1.0

Chromium , ug/L = ND

% RSD SUMMARY

PERCENT RSD SUMMARY: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.093	7.14	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.5	6.26	15	PASS
Std3-5/50 ppb	ICAL	1	5.025	0.77	15	PASS
Std4-10/100 ppb	ICAL	1	10.2	2.63	15	PASS
Std5-20/200 ppb	ICAL	1	20.62	2.15	15	PASS
Std6-40/400 ppb	ICAL	1	40.4	1.34	15	PASS
Std7-100/1000 ppb	ICAL	1	101.38	1.6	15	PASS
Std8-200/2000 ppb	ICAL	1	199.16	0.42	15	PASS
ICV	ICV	1	10.57	2.57	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL
LLICV	CCV1	1	0.99	3.19	20	PASS
ICSA1	ICSA	1	0.041	52.17	15	<PQL
ICSAB1	ICSAB	1	19.0087	0.78	15	PASS
LLICV	CCV1	1	1.034	0.99	20	PASS
CCV1	CCV	1	20.15	0.98	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.33	1.3	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.98	2.79	20	PASS
ICSA2	ICSA	1	0.03	13.19	15	PASS
ICSAB2	ICSAB	1	18.63	1.93	15	PASS
CCV3	CCV	1	19.68	0.95	15	PASS
CCB3	CCB	1	<0.000	N/A	15	<PQL
CCV4	CCV	1	19.52	1.0092	15	PASS
CCB4	CCB	1	<0.000	N/A	15	<PQL
MB-62184	MBLK	1	0.0098	35.76	15	<PQL
LCS-62184	LCS	1	9.071	2.44	15	PASS
N024160-013B	SAMP	1	2.099	0.83	15	PASS
N024160-013B	SAMP	5	0.45	4.46	15	PASS
CCV5	CCV	1	19.98	0.77	15	PASS
CCB5	CCB	1	<0.000	N/A	15	<PQL
LLCCV2	CCV2	1	0.99	4.92	20	PASS
ICSA3	ICSA	1	0.039	47.019	15	<PQL
ICSAB3	ICSAB	1	18.74	1.17	15	PASS
N024160-013B-PS	PS	1	10.61	1.27	15	PASS
N024160-013B-MS	MS	1	10.83	0.97	15	PASS
N024160-013B-MSD	MSD	1	10.67	1.42	15	PASS
N024160-014B	SAMP	1	3.38	4.31	15	PASS
N024160-015B	SAMP	1	357.48	2.42	15	PASS
N024160-016B	SAMP	1	356.7	0.46	15	PASS

PERCENT RSD SUMMARY: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
N024184-001B	SAMP	1	<0.000	N/A	15	<PQL
N024184-002B	SAMP	1	0.063	19.63	15	<PQL
N024184-003B	SAMP	1	0.0024	453.38	15	<PQL
N024184-004B	SAMP	1	0.097	21.68	15	<PQL
CCV6	CCV	1	19.72	1.44	15	PASS
CCB6	CCB	1	<0.000	N/A	15	<PQL
N024184-005B	SAMP	1	0.0092	143.12	15	<PQL
N024184-006B	SAMP	1	0.021	31.39	15	<PQL
N024184-007B	SAMP	1	0.019	55.45	15	<PQL
N024184-008B	SAMP	1	<0.000	N/A	15	<PQL
N024184-009B	SAMP	1	<0.000	N/A	15	<PQL
N024184-010B	SAMP	1	0.0073	218.89	15	<PQL
N024184-011B	SAMP	1	0.068	8.15	15	PASS
N024184-012B	SAMP	1	0.0063	190.67	15	<PQL
N024184-013B	SAMP	1	0.0087	47.63	15	<PQL
N024184-014B	SAMP	1	<0.000	N/A	15	<PQL
CCV7	CCV	1	19.65	0.9	15	PASS
CCB7	CCB	1	<0.000	N/A	15	<PQL
N024185-001B	SAMP	1	0.073	22.37	15	<PQL
CCV8	CCV	1	19.76	1.89	15	PASS
CCB8	CCB	1	<0.000	N/A	15	<PQL
LLCCV3	CCV2	1	0.94	4.18	20	PASS
ICSA4	ICSA	1	0.044	39.72	15	<PQL
ICSAB4	ICSAB	1	18.77	1.7	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170513A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0513001.D	RINSE	RINSE	1	05/13/17 8:03 AM
A0513002.D	Cal Blank	IBLK	1	05/13/17 8:09 AM
A0513003.D	Std1-0.1/1 ppb	ICAL	1	05/13/17 8:15 AM
A0513004.D	Std2-0.5/5 ppb	ICAL	1	05/13/17 8:20 AM
A0513005.D	Std3-5/50 ppb	ICAL	1	05/13/17 8:26 AM
A0513006.D	Std4-10/100 ppb	ICAL	1	05/13/17 8:31 AM
A0513007.D	Std5-20/200 ppb	ICAL	1	05/13/17 8:37 AM
A0513008.D	Std6-40/400 ppb	ICAL	1	05/13/17 8:42 AM
A0513009.D	Std7-100/1000 ppb	ICAL	1	05/13/17 8:48 AM
A0513010.D	Std8-200/2000 ppb	ICAL	1	05/13/17 8:54 AM
A0513011.D	ICV	ICV	1	05/13/17 9:00 AM
A0513012.D	ICB	ICB	1	05/13/17 9:05 AM
A0513013.D	LLICV	CCV1	1	05/13/17 9:10 AM
A0513014.D	ICSA1	ICSA	1	05/13/17 9:16 AM
A0513015.D	ICSAB1	ICSAB	1	05/13/17 9:21 AM
A0513016.D	LLICV	CCV1	1	05/13/17 9:27 AM
A0513017.D	MB-62179	MBLK	1	05/13/17 9:33 AM
A0513018.D	LCS-62179	LCS	1	05/13/17 9:39 AM
A0513019.D	N024096-001A	SAMP	1	05/13/17 9:45 AM
A0513020.D	N024096-001A	SAMP	5	05/13/17 9:50 AM
A0513021.D	N024096-001A-PS	PS	1	05/13/17 9:56 AM
A0513022.D	N024096-001A-MS	MS	1	05/13/17 10:02 AM
A0513023.D	N024096-001A-MSD	MSD	1	05/13/17 10:07 AM
A0513024.D	N024096-002A	SAMP	1	05/13/17 10:13 AM
A0513025.D	N024164-001A	SAMP	1	05/13/17 10:18 AM
A0513026.D	N024164-002A	SAMP	1	05/13/17 10:24 AM
A0513027.D	CCV1	CCV	1	05/13/17 10:30 AM
A0513028.D	CCB1	CCB	1	05/13/17 10:37 AM
A0513029.D	N024132-010A	SAMP	1	05/13/17 10:43 AM
A0513030.D	N024129-001A	SAMP	25	05/13/17 10:48 AM
A0513031.D	N024129-002A	SAMP	250	05/13/17 10:54 AM
A0513032.D	N024129-003A	SAMP	10	05/13/17 10:59 AM
A0513033.D	N024130-003A	SAMP	25	05/13/17 11:05 AM
A0513034.D	CCV2	CCV	1	05/13/17 11:11 AM
A0513035.D	CCB2	CCB	1	05/13/17 11:16 AM
A0513036.D	LLCCV1	CCV2	1	05/13/17 11:22 AM
A0513037.D	ICSA2	ICSA	1	05/13/17 11:27 AM
A0513038.D	ICSAB2	ICSAB	1	05/13/17 11:33 AM
A0513039.D	MB-62183	MBLK	1	05/13/17 11:54 AM
A0513040.D	LCS-62183	LCS	1	05/13/17 11:59 AM
A0513041.D	N024136-001B	SAMP	1	05/13/17 12:05 PM
A0513042.D	N024136-001B	SAMP	5	05/13/17 12:11 PM

INJECTION LOG: 170513A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0513043.D	N024136-001B-PS	PS	1	05/13/17 12:16 PM
A0513044.D	N024136-001B-MS	MS	1	05/13/17 12:22 PM
A0513045.D	N024136-001B-MSD	MSD	1	05/13/17 12:27 PM
A0513046.D	N024136-002B	SAMP	1	05/13/17 12:33 PM
A0513047.D	N024136-003B	SAMP	1	05/13/17 12:38 PM
A0513048.D	N024136-004B	SAMP	1	05/13/17 12:44 PM
A0513049.D	CCV3	CCV	1	05/13/17 12:49 PM
A0513050.D	CCB3	CCB	1	05/13/17 12:55 PM
A0513051.D	N024136-005B	SAMP	1	05/13/17 1:01 PM
A0513052.D	N024136-006B	SAMP	1	05/13/17 1:06 PM
A0513053.D	N024136-007B	SAMP	1	05/13/17 1:12 PM
A0513054.D	N024136-008B	SAMP	1	05/13/17 1:17 PM
A0513055.D	N024160-001B	SAMP	1	05/13/17 1:23 PM
A0513056.D	N024160-002B	SAMP	1	05/13/17 1:28 PM
A0513057.D	N024160-003B	SAMP	1	05/13/17 1:34 PM
A0513058.D	N024160-004B	SAMP	1	05/13/17 1:39 PM
A0513059.D	N024160-005B	SAMP	1	05/13/17 1:45 PM
A0513060.D	N024160-006B	SAMP	1	05/13/17 1:50 PM
A0513061.D	CCV4	CCV	1	05/13/17 1:56 PM
A0513062.D	CCB4	CCB	1	05/13/17 2:02 PM
A0513063.D	N024160-007B	SAMP	1	05/13/17 2:07 PM
A0513064.D	N024160-008B	SAMP	1	05/13/17 2:13 PM
A0513065.D	N024160-009B	SAMP	1	05/13/17 2:18 PM
A0513066.D	N024160-010B	SAMP	1	05/13/17 2:24 PM
A0513067.D	N024160-011B	SAMP	1	05/13/17 2:29 PM
A0513068.D	N024160-012B	SAMP	1	05/13/17 2:35 PM
A0513069.D	MB-62184	MBLK	1	05/13/17 2:41 PM
A0513070.D	LCS-62184	LCS	1	05/13/17 2:46 PM
A0513071.D	N024160-013B	SAMP	1	05/13/17 2:52 PM
A0513072.D	N024160-013B	SAMP	5	05/13/17 2:57 PM
A0513073.D	CCV5	CCV	1	05/13/17 3:03 PM
A0513074.D	CCB5	CCB	1	05/13/17 3:09 PM
A0513075.D	LLCCV2	CCV2	1	05/13/17 3:14 PM
A0513076.D	ICSA3	ICSA	1	05/13/17 3:20 PM
A0513077.D	ICSAB3	ICSAB	1	05/13/17 3:25 PM
A0513078.D	N024160-013B-PS	PS	1	05/13/17 3:31 PM
A0513079.D	N024160-013B-MS	MS	1	05/13/17 3:36 PM
A0513080.D	N024160-013B-MSD	MSD	1	05/13/17 3:42 PM
A0513081.D	N024160-014B	SAMP	1	05/13/17 3:47 PM
A0513082.D	N024160-015B	SAMP	1	05/13/17 3:53 PM
A0513083.D	N024160-016B	SAMP	1	05/13/17 3:59 PM
A0513084.D	N024184-001B	SAMP	1	05/13/17 4:04 PM

INJECTION LOG: 170513A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0513085.D	N024184-002B	SAMP	1	05/13/17 4:10 PM
A0513086.D	N024184-003B	SAMP	1	05/13/17 4:15 PM
A0513087.D	N024184-004B	SAMP	1	05/13/17 4:21 PM
A0513088.D	CCV6	CCV	1	05/13/17 4:27 PM
A0513089.D	CCB6	CCB	1	05/13/17 4:32 PM
A0513090.D	N024184-005B	SAMP	1	05/13/17 4:38 PM
A0513091.D	N024184-006B	SAMP	1	05/13/17 4:43 PM
A0513092.D	N024184-007B	SAMP	1	05/13/17 4:49 PM
A0513093.D	N024184-008B	SAMP	1	05/13/17 4:54 PM
A0513094.D	N024184-009B	SAMP	1	05/13/17 5:00 PM
A0513095.D	N024184-010B	SAMP	1	05/13/17 5:06 PM
A0513096.D	N024184-011B	SAMP	1	05/13/17 5:11 PM
A0513097.D	N024184-012B	SAMP	1	05/13/17 5:17 PM
A0513098.D	N024184-013B	SAMP	1	05/13/17 5:22 PM
A0513099.D	N024184-014B	SAMP	1	05/13/17 5:28 PM
A0513100.D	CCV7	CCV	1	05/13/17 5:34 PM
A0513101.D	CCB7	CCB	1	05/13/17 5:39 PM
A0513102.D	N024185-001B	SAMP	1	05/13/17 5:44 PM
A0513103.D	CCV8	CCV	1	05/13/17 5:50 PM
A0513104.D	CCB8	CCB	1	05/13/17 5:56 PM
A0513105.D	LLCCV3	CCV2	1	05/13/17 6:01 PM
A0513106.D	ICSA4	ICSA	1	05/13/17 6:07 PM
A0513107.D	ICSAB4	ICSAB	1	05/13/17 6:12 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2017 7:33:32 A**
Prep End Date: **5/11/2017 12:00:00**
Prep Batch **62184** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/22/2017
Initials/ Date: 5/22/2017
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-33**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62184	Aqueous		25	☐	0	0	25	1.000		
MB-62184	Aqueous		25	☐	0	0	25	1.000		
N024160-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-013B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-013B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-015B	Groundwater	<2	25	☐	0	0	25	1.000		
N024160-016B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-006B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/11/2017 7:33:32 A**
Prep End Date: **5/11/2017 12:00:00**
Prep Batch **62184** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/22/2017
Initials/ Date: 5/22/2017
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-33**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024184-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N024184-014B	Groundwater	<2	25	☐	0	0	25	1.000		
N024185-001B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 13 May 2017 07:50:37 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element		Actual	Required	Flag
9	Be	83816.60	0.00	
24	Mg	321711.00	0.00	
25	Mg	42009.00	0.00	
26	Mg	48646.10	0.00	
59	Co	410417.00	0.00	
115	In	735176.00	0.00	
206	Pb	191464.00	0.00	
207	Pb	168277.00	0.00	
208	Pb	411338.00	0.00	

RSD (%)

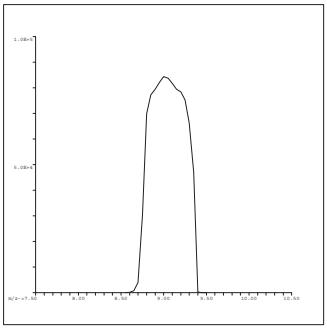
Element		Actual	Required	Flag
9	Be	1.38	5.00	
24	Mg	1.69	5.00	
25	Mg	4.03	5.00	
26	Mg	1.84	5.00	
59	Co	1.97	5.00	
115	In	1.44	5.00	
206	Pb	1.99	5.00	
207	Pb	1.98	5.00	
208	Pb	2.08	5.00	

Ion Ratio

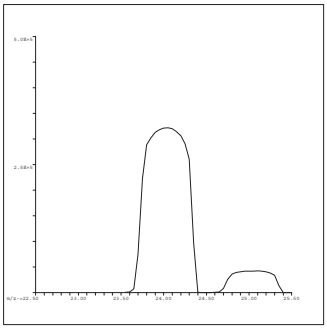
Element		Actual	Required	Flag
9	Be			
24	Mg			
25	Mg			
26	Mg			
59	Co			
115	In			
206	Pb			
207	Pb			
208	Pb			

Maximum Bkg. Count(CPS)

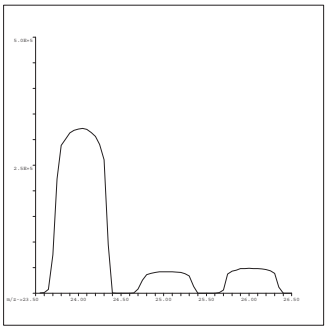
Element	Actual	Required	Flag



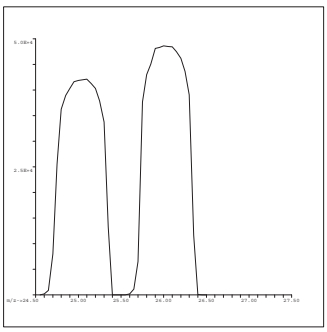
9 Be
Mass Calib.
Actual: 9.05
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



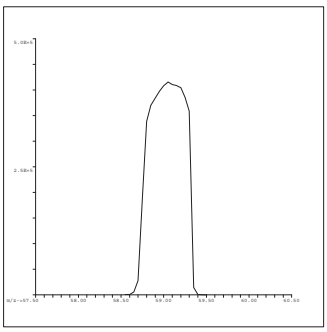
24 Mg
Mass Calib.
Actual: 24.05
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



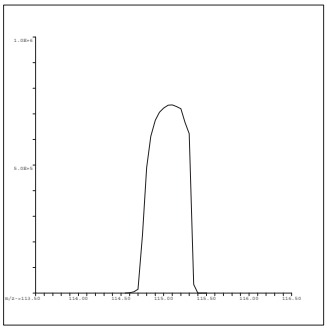
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



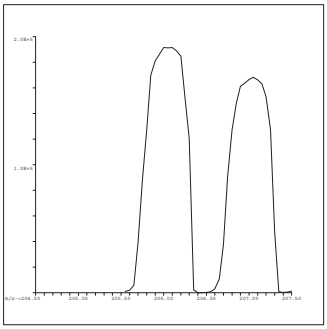
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



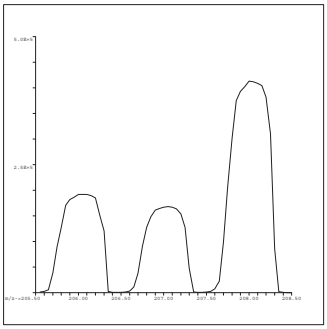
59 Co
Mass Calib.
Actual: 59.10
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



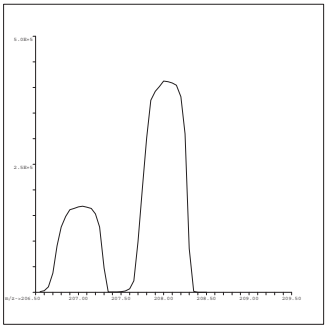
115 In
Mass Calib.
Actual: 115.10
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.55
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.05
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.05
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.05
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170513A

Instrument ID: ICPMS-02

Analyte	Data File	A0513002.D	A0513004.D	A0513005.D	A0513006.D	A0513007.D	A0513008.D	A0513009.D	A0513010.D	
	Acq. Date-Time	05/13/2017 08:09 AM	05/13/2017 08:20 AM	05/13/2017 08:26 AM	05/13/2017 08:31 AM	05/13/2017 08:37 AM	05/13/2017 08:42 AM	05/13/2017 08:48 AM	05/13/2017 08:54 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	47850.9	47014	47127.6	46927	46041.1	46227.3	45127.6	45620	
52 Cr [2]	CPS	188.8	2369.1	22384.4	45062.6	89133.3	175242.7	428995	851840.8	1.0000

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ICV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644963**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.570	1.0	10.00	0	106	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ZZZZZZ**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644965**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.986	1.0	1.000	0	98.6	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644979**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.146	1.0	20.00	0	101	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644986**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.329	1.0	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ZZZZZZ**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2644988**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.977	1.0	1.000	0	97.7	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCV3	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCV	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645001

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.683	1.0	20.00	0	98.4	90	110				

Sample ID	CCV4	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCV	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645013

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.522	1.0	20.00	0	97.6	90	110				

Sample ID	CCV5	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCV	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645025

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.982	1.0	20.00	0	99.9	90	110				

Sample ID	LLCCV2	SampType:	CCV2	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ZZZZZZ	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645027

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.995	1.0	1.000	0	99.5	70	130				

Sample ID	CCV6	SampType:	CCV	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCV	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645040

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.724	1.0	20.00	0	98.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV7**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645052**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.653	1.0	20.00	0	98.3	90	110				

Sample ID **CCV8**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **CCV**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645055**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.759	1.0	20.00	0	98.8	90	110				

Sample ID **LLCCV3**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ZZZZZZ**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645057**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.936	1.0	1.000	0	93.6	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**ICB**	SampType:	**ICB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**115234**
Client ID:	**ICB**	Batch ID:	**R115234**	TestNo:	**EPA 6020**			Analysis Date:	**5/13/2017**	SeqNo:	**2644964**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	**CCB1**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**115234**
Client ID:	**CCB**	Batch ID:	**R115234**	TestNo:	**EPA 6020**			Analysis Date:	**5/13/2017**	SeqNo:	**2644980**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	**CCB2**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**115234**
Client ID:	**CCB**	Batch ID:	**R115234**	TestNo:	**EPA 6020**			Analysis Date:	**5/13/2017**	SeqNo:	**2644987**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	**CCB3**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**115234**
Client ID:	**CCB**	Batch ID:	**R115234**	TestNo:	**EPA 6020**			Analysis Date:	**5/13/2017**	SeqNo:	**2645002**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	**CCB4**	SampType:	**CCB**	TestCode:	**6020DIS_CrP**	Units:	**µg/L**	Prep Date:		RunNo:	**115234**
Client ID:	**CCB**	Batch ID:	**R115234**	TestNo:	**EPA 6020**			Analysis Date:	**5/13/2017**	SeqNo:	**2645014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	CCB5	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645026

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB6	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645041

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB7	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645053

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB8	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	CCB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645056

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSA	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644966

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.041	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSAB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644967

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.009	1.0	20.00	0	95.0	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSA	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644989

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.030	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSAB	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2644990

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.627	1.0	20.00	0	93.1	80	120				

Sample ID	ICSA3	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115234
Client ID:	ICSA	Batch ID:	R115234	TestNo:	EPA 6020			Analysis Date:	5/13/2017	SeqNo:	2645028

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.039	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSAB3**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ICSAB**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645029**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.739	1.0	20.00	0	93.7	80	120				

Sample ID **ICSA4**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ICSA**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645058**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.044	1.0									

Sample ID **ICSAB4**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID: **ICSAB**	Batch ID: **R115234**	TestNo: **EPA 6020**		Analysis Date: **5/13/2017**	SeqNo: **2645059**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	18.771	1.0	20.00	0	93.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	47850.9	47850.9	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	47820.8	47850.9	99.94	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	47014	47850.9	98.25	PASS	70-125
Std3-5/50 ppb	ICAL	1	47127.6	47850.9	98.49	PASS	70-125
Std4-10/100 ppb	ICAL	1	46927	47850.9	98.069	PASS	70-125
Std5-20/200 ppb	ICAL	1	46041.1	47850.9	96.22	PASS	70-125
Std6-40/400 ppb	ICAL	1	46227.3	47850.9	96.61	PASS	70-125
Std7-100/1000 ppb	ICAL	1	45127.6	47850.9	94.31	PASS	70-125
Std8-200/2000 ppb	ICAL	1	45620	47850.9	95.34	PASS	70-125
ICV	ICV	1	51731.2	47850.9	108.11	PASS	70-125
ICB	ICB	1	49489.9	47850.9	103.43	PASS	70-125
LLICV	CCV1	1	48882.7	47850.9	102.16	PASS	70-125
ICSA1	ICSA	1	52717.8	47850.9	110.17	PASS	70-125
ICSAB1	ICSAB	1	58688.8	47850.9	122.65	PASS	70-125
LLICV	CCV1	1	49488.7	47850.9	103.42	PASS	70-125
CCV1	CCV	1	43825.3	47850.9	91.59	PASS	70-125
CCB1	CCB	1	43703.7	47850.9	91.33	PASS	70-125
CCV2	CCV	1	43282.7	47850.9	90.45	PASS	70-125
CCB2	CCB	1	42683.3	47850.9	89.2	PASS	70-125
LLCCV1	CCV2	1	46234	47850.9	96.62	PASS	70-125
ICSA2	ICSA	1	49971.4	47850.9	104.43	PASS	70-125
ICSAB2	ICSAB	1	57793.4	47850.9	120.78	PASS	70-125
CCV3	CCV	1	51720	47850.9	108.09	PASS	70-125
CCB3	CCB	1	45810.7	47850.9	95.74	PASS	70-125
CCV4	CCV	1	48542.7	47850.9	101.45	PASS	70-125
CCB4	CCB	1	45038.6	47850.9	94.12	PASS	70-125
MB-62184	MBLK	1	47793.9	47850.9	99.88	PASS	70-125
LCS-62184	LCS	1	49910	47850.9	104.3	PASS	70-125
N024160-013B	SAMP	1	49165.6	47850.9	102.75	PASS	70-125
N024160-013B	SAMP	5	44699.7	47850.9	93.41	PASS	70-125
CCV5	CCV	1	42999.8	47850.9	89.86	PASS	70-125
CCB5	CCB	1	40809.7	47850.9	85.29	PASS	70-125
LLCCV2	CCV2	1	41701.9	47850.9	87.15	PASS	70-125
ICSA3	ICSA	1	42284.5	47850.9	88.37	PASS	70-125
ICSAB3	ICSAB	1	51881.6	47850.9	108.42	PASS	70-125
N024160-013B-PS	PS	1	49534.4	47850.9	103.52	PASS	70-125
N024160-013B-MS	MS	1	46333.1	47850.9	96.83	PASS	70-125
N024160-013B-MSD	MSD	1	47476.2	47850.9	99.22	PASS	70-125
N024160-014B	SAMP	1	45777.2	47850.9	95.67	PASS	70-125
N024160-015B	SAMP	1	46084.7	47850.9	96.31	PASS	70-125
N024160-016B	SAMP	1	50107.6	47850.9	104.72	PASS	70-125

INTERNAL STANDARD: 170513A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N024184-001B	SAMP	1	49152.2	47850.9	102.72	PASS	70-125
N024184-002B	SAMP	1	48936.1	47850.9	102.27	PASS	70-125
N024184-003B	SAMP	1	49234.6	47850.9	102.89	PASS	70-125
N024184-004B	SAMP	1	48580.5	47850.9	101.52	PASS	70-125
CCV6	CCV	1	46428.8	47850.9	97.028	PASS	70-125
CCB6	CCB	1	43548.9	47850.9	91.01	PASS	70-125
N024184-005B	SAMP	1	45038.5	47850.9	94.12	PASS	70-125
N024184-006B	SAMP	1	45949.8	47850.9	96.027	PASS	70-125
N024184-007B	SAMP	1	44946	47850.9	93.93	PASS	70-125
N024184-008B	SAMP	1	44960.4	47850.9	93.96	PASS	70-125
N024184-009B	SAMP	1	46659.5	47850.9	97.51	PASS	70-125
N024184-010B	SAMP	1	47193.2	47850.9	98.63	PASS	70-125
N024184-011B	SAMP	1	47568.7	47850.9	99.41	PASS	70-125
N024184-012B	SAMP	1	48586.1	47850.9	101.54	PASS	70-125
N024184-013B	SAMP	1	48266.4	47850.9	100.87	PASS	70-125
N024184-014B	SAMP	1	46248.5	47850.9	96.65	PASS	70-125
CCV7	CCV	1	45225.8	47850.9	94.51	PASS	70-125
CCB7	CCB	1	41599.4	47850.9	86.94	PASS	70-125
N024185-001B	SAMP	1	46408	47850.9	96.98	PASS	70-125
CCV8	CCV	1	45055.1	47850.9	94.16	PASS	70-125
CCB8	CCB	1	42364.8	47850.9	88.54	PASS	70-125
LLCCV3	CCV2	1	41883.6	47850.9	87.53	PASS	70-125
ICSA4	ICSA	1	42744.6	47850.9	89.33	PASS	70-125
ICSAB4	ICSAB	1	51221.8	47850.9	107.05	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024185
Test Method: EPA 6020
Analysis Date: 5/13/2017

Matrix: Groundwater
Batch No.: 62184

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024160-013B DT 5X	Chromium	ug/L	2.274448	NA	2.098738	8.37%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024185
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	**N024160-013B-PS**	SampType: **PS**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115234**
Client ID:	**ZZZZZZ**	Batch ID: **62184**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/13/2017**	SeqNo: **2645030**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.610	1.0	10.00	2.099	85.1	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

May 25, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024191

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 11, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ritucano for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024191

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

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ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *25-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024191
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024191-001A	AB3-Q217	Groundwater	5/11/2017 9:45:00 AM	5/11/2017	5/25/2017
N024191-002A	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-002B	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-002C	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-002D	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-002E	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-003A	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-003B	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-003C	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-003D	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-003E	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-004A	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-004B	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-004C	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-004D	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-004E	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-005A	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-005B	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-005C	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-005D	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-005E	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-006A	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-006B	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-006C	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-006D	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-006E	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-007A	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017
N024191-007B	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017
N024191-007C	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024191
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024191-007D	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017
N024191-007E	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017
N024191-008A	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-008B	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-008C	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-008D	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-008E	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-009A	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-009B	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-009C	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-009D	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-009E	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-010A	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-010B	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-010C	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-010D	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-010E	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-011A	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-011B	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-011C	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-011D	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-011E	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-012A	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-012B	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-012C	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-012D	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-012E	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-013A	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017
N024191-013B	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017
N024191-013C	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024191
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024191-013D	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017
N024191-013E	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017
N024191-014A	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017
N024191-014B	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017
N024191-014C	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017
N024191-014D	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017
N024191-014E	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-006

Client Sample ID: C-NR4-S-Q217
Collection Date: 5/11/2017 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-014

Client Sample ID: C-NR4-D-Q217
Collection Date: 5/11/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N024191-007DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115190**
Client ID: **ZZZZZZ**	Batch ID: **R115190**	TestNo: **EPA 120.1**		Analysis Date: **5/12/2017**	SeqNo: **2642005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1310.000	0.10						1307	0.229	10	

Sample ID **N024198-001BDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115190**
Client ID: **ZZZZZZ**	Batch ID: **R115190**	TestNo: **EPA 120.1**		Analysis Date: **5/12/2017**	SeqNo: **2642018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1115.000	0.10						1118	0.269	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-002

Client Sample ID: C-CON-D-Q217
Collection Date: 5/11/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-003

Client Sample ID: C-CON-S-Q217
Collection Date: 5/11/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	15	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-006

Client Sample ID: C-NR4-S-Q217
Collection Date: 5/11/2017 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-013

Client Sample ID: MW-922-Q217
Collection Date: 5/11/2017 12:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-014

Client Sample ID: C-NR4-D-Q217
Collection Date: 5/11/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024191-007DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **115189**
Client ID: **ZZZZZZ**	Batch ID: **R115189**	TestNo: **SM4500-H+B**		Analysis Date: **5/12/2017**	SeqNo: **2641948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.570	0.10						7.540	0.397	10	H
Temp. at time of pH Analysis	15.500	0.10						15.70	1.28	10	H

Sample ID **N024199-001BDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **115189**
Client ID: **ZZZZZZ**	Batch ID: **R115189**	TestNo: **SM4500-H+B**		Analysis Date: **5/12/2017**	SeqNo: **2641959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.030	0.10						8.040	0.124	10	H
Temp. at time of pH Analysis	16.500	0.10						16.90	2.40	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-002

Client Sample ID: C-CON-D-Q217
Collection Date: 5/11/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B** QC Batch: **62255**				PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B** QC Batch: **62255**				PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	320	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170515B** QC Batch: **62255**					PrepDate **5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	68	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**			PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**			PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170515C**	QC Batch: **62256**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170515C**	QC Batch: **62256**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515C**	QC Batch: **62256**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	**LCS-62255**	SampType:	**LCS**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/15/2017**	RunNo:	**115250**
Client ID:	**LCSW**	Batch ID:	**62255**	TestNo:	**SM2540D**			Analysis Date:	**5/15/2017**	SeqNo:	**2645610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	936.000	10	1000	0	93.6	80	120				

Sample ID	**MB-62255**	SampType:	**MBLK**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/15/2017**	RunNo:	**115250**
Client ID:	**PBW**	Batch ID:	**62255**	TestNo:	**SM2540D**			Analysis Date:	**5/15/2017**	SeqNo:	**2645611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	**N024191-002DDUP**	SampType:	**DUP**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/15/2017**	RunNo:	**115250**
Client ID:	**ZZZZZZ**	Batch ID:	**62255**	TestNo:	**SM2540D**			Analysis Date:	**5/15/2017**	SeqNo:	**2645613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-62256	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/15/2017	RunNo:	115251
Client ID:	LCSW	Batch ID:	62256	TestNo:	SM2540D			Analysis Date:	5/15/2017	SeqNo:	2645623

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	947.000	10	1000	0	94.7	80	120				

Sample ID	MB-62256	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/15/2017	RunNo:	115251
Client ID:	PBW	Batch ID:	62256	TestNo:	SM2540D			Analysis Date:	5/15/2017	SeqNo:	2645624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N024191-012DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/15/2017	RunNo:	115251
Client ID:	ZZZZZZ	Batch ID:	62256	TestNo:	SM2540D			Analysis Date:	5/15/2017	SeqNo:	2645626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB3-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A**	QC Batch: **R115274**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-002

Client Sample ID: C-CON-D-Q217
Collection Date: 5/11/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 10:55 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 12:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 11:14 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 12:20 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 12:39 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 12:58 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 01:17 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-009

Client Sample ID: C-NR1-D-Q217
Collection Date: 5/11/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 01:55 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 02:14 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 02:33 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 02:52 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 03:11 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-014

Client Sample ID: C-NR4-D-Q217
Collection Date: 5/11/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 03:48 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115274**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **PBW**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115274**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **LCSW**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.054	0.20	5.000	0	101	90	110				

Sample ID **N024191-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.003	0.20	1.000	0	100	90	110				

Sample ID **N024191-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110	1.003	5.48	20	

Sample ID **N024191-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024191-004AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646574

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.076	0.20	1.000	0	108	90	110				

Sample ID	N024191-004ADUP	SampType:	DUP	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646575

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID	N024191-003AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646579

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0	106	90	110				

Sample ID	N024191-005AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646581

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID	N024191-006AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646583

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024191-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646585

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.054	0.20	1.000	0	105	90	110				

Sample ID	N024191-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	110	90	110				

Sample ID	N024191-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646591

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID	N024191-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID	N024191-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646595

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024191-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646597

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID	N024191-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID	N024191-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62222	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115354
Client ID:	PBW	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62222	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115354
Client ID:	LCSW	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.047	1.0	10.00	0	100	85	115				

Sample ID	N024191-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115354
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650173

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.629	1.0	10.00	0.05747	95.7	75	125				

Sample ID	N024191-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115354
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650174

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.628	1.0	10.00	0.05747	95.7	75	125	9.629	0.0118	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:	B	Analyte detected in the associated Method Blank	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
	S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
	DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115409	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	PBW	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115409	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	LCSW	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	85	115				

Sample ID	N024191-002EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	ZZZZZZ	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653116

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.444	0.050						0.4587	3.35	20	

Sample ID	N024191-002EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	ZZZZZZ	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653117

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.905	0.050	0.5000	0.4587	89.3	75	125				

Sample ID	N024191-002EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	ZZZZZZ	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653118

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.928	0.050	0.5000	0.4587	93.8	75	125	0.9052	2.47	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-002

Client Sample ID: C-CON-D-Q217
Collection Date: 5/11/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:09 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 07:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-003

Client Sample ID: C-CON-S-Q217
Collection Date: 5/11/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	44	1.8	20		ug/L	1	5/18/2017 11:14 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 07:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:19 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	5/18/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:23 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	82	1.8	20		ug/L	1	5/18/2017 08:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:28 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 08:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	51	1.8	20		ug/L	1	5/18/2017 11:33 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	6900	1.8	20		ug/L	1	5/18/2017 08:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:38 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	2600	1.8	20		ug/L	1	5/18/2017 08:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:53 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	23	1.8	20		ug/L	1	5/18/2017 08:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:58 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 08:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 12:03 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	24	1.8	20		ug/L	1	5/18/2017 08:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 12:08 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 08:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-013

Client Sample ID: MW-922-Q217
Collection Date: 5/11/2017 12:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 12:12 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	5/18/2017 08:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-014

Client Sample ID: C-NR4-D-Q217
Collection Date: 5/11/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 12:17 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 09:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-62243**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/15/2017**	RunNo: **115323**
Client ID: **PBW**	Batch ID: **62243**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2648843**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.434	20									

Sample ID **LCS-62243**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/15/2017**	RunNo: **115323**
Client ID: **LCSW**	Batch ID: **62243**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2648844**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.760	20	100.0	0	108	85	115				

Sample ID **N024182-004B-MS**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/15/2017**	RunNo: **115323**
Client ID: **ZZZZZZ**	Batch ID: **62243**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2648848**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.821	20	100.0	11.39	91.4	75	125				

Sample ID **N024182-004B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **5/15/2017**	RunNo: **115323**
Client ID: **ZZZZZZ**	Batch ID: **62243**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2648849**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.728	20	100.0	11.39	91.3	75	125	102.8	0.0909	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-62242	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	PBW	Batch ID:	62242	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648708

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-62242	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	LCSW	Batch ID:	62242	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.906	20	100.0	0	103	85	115				

Sample ID	N024191-002C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	ZZZZZZ	Batch ID:	62242	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.867	20	100.0	18.63	101	75	125				

Sample ID	N024191-002C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	ZZZZZZ	Batch ID:	62242	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.619	20	100.0	18.63	100	75	125	119.9	1.05	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**				PrepDate	**5/13/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	5/18/2017 04:38 PM
Barium	120	0.35	5.0		µg/L	5	5/18/2017 04:44 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 04:38 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/18/2017 04:38 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/24/2017 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-003

Client Sample ID: C-CON-S-Q217
Collection Date: 5/11/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 05:17 PM
Barium	110	0.070	1.0		µg/L	1	5/18/2017 05:17 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 05:17 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/18/2017 05:17 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/18/2017 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/18/2017 05:23 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 05:23 PM
Manganese	1.6	0.056	0.50		µg/L	1	5/18/2017 05:23 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/18/2017 05:23 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/18/2017 05:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 05:28 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 05:28 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 05:28 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/18/2017 05:28 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/18/2017 05:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**				PrepDate	**5/13/2017**	Analyst: **CEI**
Arsenic	2.0	0.025	0.10		µg/L	1	5/18/2017 05:34 PM
Barium	110	0.070	1.0		µg/L	1	5/18/2017 05:34 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 05:34 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/18/2017 05:34 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/24/2017 03:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 05:39 PM
Barium	140	0.070	1.0		µg/L	1	5/18/2017 05:39 PM
Manganese	120	0.056	0.50		µg/L	1	5/18/2017 05:39 PM
Molybdenum	6.5	0.039	0.50		µg/L	1	5/18/2017 05:39 PM
Selenium	0.92	0.028	0.50		µg/L	1	5/18/2017 05:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 05:45 PM
Barium	140	0.070	1.0		µg/L	1	5/18/2017 05:45 PM
Manganese	120	0.056	0.50		µg/L	1	5/18/2017 05:45 PM
Molybdenum	6.6	0.039	0.50		µg/L	1	5/18/2017 05:45 PM
Selenium	0.83	0.028	0.50		µg/L	1	5/18/2017 05:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**				PrepDate	**5/13/2017**	Analyst: **CEI**
Arsenic	2.2	0.025	0.10		µg/L	1	5/18/2017 05:51 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 05:51 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 05:51 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/18/2017 05:51 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/18/2017 05:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.0	0.025	0.10		µg/L	1	5/18/2017 06:07 PM
Barium	110	0.070	1.0		µg/L	1	5/18/2017 06:07 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:07 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/18/2017 06:07 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/18/2017 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 06:13 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 06:13 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:13 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	5/18/2017 06:13 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/24/2017 03:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 06:18 PM
Barium	110	0.070	1.0		µg/L	1	5/18/2017 06:18 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:18 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/18/2017 06:18 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/18/2017 06:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

ASSET Laboratories

ANALYTICAL RESULTS

Print Date: *25-May-17*

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**				PrepDate	**5/13/2017**	Analyst: **CEI**
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 06:24 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 06:24 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:24 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/18/2017 06:24 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/18/2017 06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A				**EPA 6020**		
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**				PrepDate	**5/13/2017**	Analyst: **CEI**
Arsenic	2.3	0.025	0.10		µg/L	1	5/18/2017 06:30 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 06:30 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:30 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/18/2017 06:30 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/24/2017 03:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62222**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/13/2017**	RunNo: **115356**
Client ID: **PBW**	Batch ID: **62222**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2650259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62222**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/13/2017**	RunNo: **115356**
Client ID: **LCSW**	Batch ID: **62222**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2650260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.689	0.10	10.00	0	96.9	85	115				
Barium	104.898	1.0	100.0	0	105	85	115				
Manganese	100.124	0.50	100.0	0	100	85	115				
Molybdenum	9.406	0.50	10.00	0	94.1	85	115				
Selenium	9.717	0.50	10.00	0	97.2	85	115				

Sample ID **N024191-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/13/2017**	RunNo: **115356**
Client ID: **ZZZZZZ**	Batch ID: **62222**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2650266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.096	0.10	10.00	2.242	98.5	75	125				
Manganese	94.979	0.50	100.0	0	95.0	75	125				
Molybdenum	16.768	0.50	10.00	5.356	114	75	125				

Sample ID **N024191-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/13/2017**	RunNo: **115356**
Client ID: **ZZZZZZ**	Batch ID: **62222**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2650267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024191-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650267

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.277	0.10	10.00	2.242	100	75	125	12.10	1.48	20	
Manganese	93.183	0.50	100.0	0	93.2	75	125	94.98	1.91	20	
Molybdenum	16.687	0.50	10.00	5.356	113	75	125	16.77	0.483	20	

Sample ID	N024191-002B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650293

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	233.859	5.0	100.0	124.8	109	75	125				

Sample ID	N024191-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650294

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	234.365	5.0	100.0	124.8	110	75	125	233.9	0.216	20	

Sample ID	N024191-002B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2654371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.951	0.50	10.00	1.487	94.6	75	125				

Sample ID	N024191-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2654372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.967	0.50	10.00	1.487	94.8	75	125	10.95	0.139	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement	QA/QC	Sample Receipt Condition	Y N
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	Excel EDD	RTNE	1 Chilled	
Address: Roseville, CA 95661	Email: [illegible]	Address:	Geotracker	RWQCB ✓	2 Headspace	
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com	Labspec	CalTrans	3 Container Intact	
Submitted By: Jason Mahn		PO #	Others ✓	LEVEL III	4 Seal Present	
Title: Project Manager	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax	Specify: RWQCB	LEVEL IV	5. IR number	
Signature: [signature] Date: 5/11/17	Sampled By: Jason Mahn		Global ID	Regulatory	6 Method of Cooling: Ice	
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.			Specify State	Sample Temp: 2.1°C / 3.0°C / 3.2°C	
Project Name: PG&E Topock - RMP	Signature: [signature] Date: 5/11/17				Courier	
Project Number: RC000753 0801					Tracking No	

Matrix: Ground x | Sediment; Potable | Soil; NPDES | Other Solid; Surface | Liquid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH	Dissolved metals (SW6010B/SW6020A(dis) FF, HNO3 Cr	Dissolved metals (SW6010B/SW6020A(dis) FF, HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020A(dis) FF, HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B), HNO3 Fe	Anions (E300.0): Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500H+B)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						1 liter poly	1 liter poly	500 ml	500 ml	500 ml	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	250 mL poly					
1	N024191 - 01	AB3-Q217		0945			X		X		X	X		X	X			X	X		1	P	BNS	
2	- 02	C-CON-D-Q217		0955		X		X		X	X		X	X			X	X			7	P	BNS	
3	- 03	C-CON-S-Q217		1015		X		X		X	X		X	X			X	X			7	P	BNS	
4	- 04	RRB-Q217		0930		X		X		X	X		X	X			X	X			7	P	BNS	
5	- 05	R-28-Q217		0905		X		X		X	X		X	X			X	X			7	P	BNS	
6	- 06	C-NR4-S-Q217		1245		X		X		X	X		X	X			X	X			7	P	BNS	
7	- 07	C-MAR-D-Q217		0820		X		X		X	X		X	X			X	X			7	P	BNS	
8	- 08	C-MAR-S-Q217		0840		X		X		X	X		X	X			X	X			7	P	BNS	
9	- 09	C-NR1-D-Q217		1040		X		X		X	X		X	X			X	X			7	P	BNS	
10	- 10	C-NR1-S-Q217		1100		X		X		X	X		X	X			X	X			7	P	BNS	
11	- 11	C-NR3-D-Q217		1135		X		X		X	X		X	X			X	X			7	P	BNS	
12	- 12	C-NR3-S-Q217		1150		X		X		X	X		X	X			X	X			7	P	BNS	
13	- 13	MW-922-Q217		1200		X		X		X	X		X	X			X	X			7	P	BNS	
14	- 14	C-NR4-D-Q217		1230		X		X		X	X		X	X			X	X			7	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[signature]	5/11/17	[signature]	5/11/17 1405
Phu Galang	5/11/17 1611	Phu Galang	5/11/17 1611
[signature]		[signature]	

Turn Around Time (TAT)

	A	= 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days. Surcharges will apply for rush analysis:
Less than 24 Hrs = 200% Next Day= 100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Testing are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/11/2017	Workorder:	N024191
Rep sample Temp (Deg C):	2.1/3.6/3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 5/19/2017

Reviewed By: MBC 5/19/2017

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-001A	AB3-Q217	5/11/2017 9:45:00 AM	5/25/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-002A	C-CON-D-Q217	5/11/2017 9:55:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-002B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-002C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-002D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-002E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-003A	C-CON-S-Q217	5/11/2017 10:15:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-003B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-003C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-003D	C-CON-S-Q217	5/11/2017 10:15:00 AM	5/25/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-003E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-004A	RRB-Q217	5/11/2017 9:30:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-004B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-004C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-004D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-004E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-005A	R-28-Q217	5/11/2017 9:05:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-005B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-005B	R-28-Q217	5/11/2017 9:05:00 AM	5/25/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-005C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-005D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-005E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-006A	C-NR4-S-Q217	5/11/2017 12:45:00 PM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-006B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-006C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-006D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-006E	C-NR4-S-Q217	5/11/2017 12:45:00 PM	5/25/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-007A	C-MAR-D-Q217	5/11/2017 8:20:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-007B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-007C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-007D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-007E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-008A	C-MAR-S-Q217	5/11/2017 8:40:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-008B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-008C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-008C	C-MAR-S-Q217	5/11/2017 8:40:00 AM	5/25/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-008D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-008E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-009A	C-NR1-D-Q217	5/11/2017 10:40:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-009B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-009C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-009D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-009E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-010A	~~C-NR1S-Q217~~ C-NR1-S-Q217	5/11/2017 11:00:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-010B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

Nancy 5/26/17
FOR

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-010B	C-NR1-S-Q217 C-NR1S-Q217	5/11/2017 11:00:00 AM	5/25/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-010C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-010D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-010E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-011A	C-NR3-D-Q217	5/11/2017 11:35:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-011B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-011C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-011D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-011D	C-NR3-D-Q217	5/11/2017 11:35:00 AM	5/25/2017	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N024191-011E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-012A	C-NR3-S-Q217	5/11/2017 11:50:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-012B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-012C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-012D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-012E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-013A	MW-922-Q217	5/11/2017 12:00:00 PM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-013B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-013C	MW-922-Q217	5/11/2017 12:00:00 PM	5/25/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-013D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-013E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-014A	C-NR4-D-Q217	5/11/2017 12:30:00 PM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-014B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-014C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-014D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-014E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-015A	FOLDER	5/25/2017	5/25/2017		EDD	RWQCB	☐	☐	☐	LAB

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-015A	FOLDER	5/25/2017	5/25/2017		Folder	Folder	☐	☐	☐	LAB
			5/25/2017		Folder	Folder	☐	☐	☐	LAB

nancy@assetlaboratories.com

From: Yoandra Rodriguez [yoandra@assetlaboratories.com]
Sent: Thursday, May 25, 2017 4:30 PM
To: 'Marlon B. Cartin'
Cc: Nancy
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N024191)

Hi Marlon,

FYI, sampling date for the attached WO was taken from sample labels.

Thanks,

Yoandra Rodriguez
Sample Control Officer
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 I P: 562.219.7435 I F: 562.219.7436
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 I P: 702.307.2659 Ext. 411 I F: 702.307.2691 I
www.assetlaboratories.com

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N024191_COC.pdf

ARCADIS

Project: PG&E Topock - RMP

Project No.: RC000753.0801

ASSET Laboratories Work Order: N024191

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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May 25, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024191

RE: PG&E Topock - RMP, RC000753.0801

Attention: Dan Bush

Enclosed are the results for sample(s) received on May 11, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

Nancy Ribucao for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024191

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

ASSET LABORATORIES
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CALIFORNIA | P:562.219.7435 F:562.219.7436
11110 Artesia Blvd., Ste B, Cerritos, CA 90703
ELAP Cert 2921
EPA ID CA01638
NEVADA | P:702.307.2659 F:702.307.2691
3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00922
ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *25-May-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024191
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024191-001A	AB3-Q217	Groundwater	5/11/2017 9:45:00 AM	5/11/2017	5/25/2017
N024191-002A	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-002B	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-002C	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-002D	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-002E	C-CON-D-Q217	Groundwater	5/11/2017 9:55:00 AM	5/11/2017	5/25/2017
N024191-003A	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-003B	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-003C	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-003D	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-003E	C-CON-S-Q217	Groundwater	5/11/2017 10:15:00 AM	5/11/2017	5/25/2017
N024191-004A	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-004B	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-004C	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-004D	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-004E	RRB-Q217	Groundwater	5/11/2017 9:30:00 AM	5/11/2017	5/25/2017
N024191-005A	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-005B	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-005C	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-005D	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-005E	R-28-Q217	Groundwater	5/11/2017 9:05:00 AM	5/11/2017	5/25/2017
N024191-006A	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-006B	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-006C	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-006D	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-006E	C-NR4-S-Q217	Groundwater	5/11/2017 12:45:00 PM	5/11/2017	5/25/2017
N024191-007A	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017
N024191-007B	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017
N024191-007C	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024191
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024191-007D	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017
N024191-007E	C-MAR-D-Q217	Groundwater	5/11/2017 8:20:00 AM	5/11/2017	5/25/2017
N024191-008A	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-008B	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-008C	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-008D	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-008E	C-MAR-S-Q217	Groundwater	5/11/2017 8:40:00 AM	5/11/2017	5/25/2017
N024191-009A	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-009B	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-009C	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-009D	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-009E	C-NR1-D-Q217	Groundwater	5/11/2017 10:40:00 AM	5/11/2017	5/25/2017
N024191-010A	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-010B	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-010C	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-010D	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-010E	C-NR1-S-Q217	Groundwater	5/11/2017 11:00:00 AM	5/11/2017	5/25/2017
N024191-011A	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-011B	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-011C	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-011D	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-011E	C-NR3-D-Q217	Groundwater	5/11/2017 11:35:00 AM	5/11/2017	5/25/2017
N024191-012A	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-012B	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-012C	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-012D	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-012E	C-NR3-S-Q217	Groundwater	5/11/2017 11:50:00 AM	5/11/2017	5/25/2017
N024191-013A	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017
N024191-013B	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017
N024191-013C	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - RMP, RC000753.0801
Lab Order: N024191
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024191-013D	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017
N024191-013E	MW-922-Q217	Groundwater	5/11/2017 12:00:00 PM	5/11/2017	5/25/2017
N024191-014A	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017
N024191-014B	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017
N024191-014C	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017
N024191-014D	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017
N024191-014E	C-NR4-D-Q217	Groundwater	5/11/2017 12:30:00 PM	5/11/2017	5/25/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	990	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	970	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-006

Client Sample ID: C-NR4-S-Q217
Collection Date: 5/11/2017 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	1300	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-009

Client Sample ID: C-NR1-D-Q217
Collection Date: 5/11/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	940	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	950	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-014

Client Sample ID: C-NR4-D-Q217
Collection Date: 5/11/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170512C**	QC Batch: **R115190**			PrepDate			Analyst: **LR**
Specific Conductance	960	0.10	0.10		umhos/cm	1	5/12/2017 11:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N024191-007DDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115190**
Client ID: **ZZZZZZ**	Batch ID: **R115190**	TestNo: **EPA 120.1**		Analysis Date: **5/12/2017**	SeqNo: **2642005**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1310.000	0.10						1307	0.229	10	

Sample ID **N024198-001BDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:	RunNo: **115190**
Client ID: **ZZZZZZ**	Batch ID: **R115190**	TestNo: **EPA 120.1**		Analysis Date: **5/12/2017**	SeqNo: **2642018**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	1115.000	0.10						1118	0.269	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-002

Client Sample ID: C-CON-D-Q217
Collection Date: 5/11/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-003

Client Sample ID: C-CON-S-Q217
Collection Date: 5/11/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	15	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-009

Client Sample ID: C-NR1-D-Q217
Collection Date: 5/11/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170512B**	QC Batch: **R115189**			PrepDate			Analyst: **LR**
pH	8.3	0.10	0.10	H	pH Units	1	5/12/2017 10:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	5/12/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024191-007DDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **115189**
Client ID: **ZZZZZZ**	Batch ID: **R115189**	TestNo: **SM4500-H+B**		Analysis Date: **5/12/2017**	SeqNo: **2641948**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.570	0.10						7.540	0.397	10	H
Temp. at time of pH Analysis	15.500	0.10						15.70	1.28	10	H

Sample ID **N024199-001BDUP**	SampType: **DUP**	TestCode: **150.1_4500H**	Units: **pH Units**	Prep Date:	RunNo: **115189**
Client ID: **ZZZZZZ**	Batch ID: **R115189**	TestNo: **SM4500-H+B**		Analysis Date: **5/12/2017**	SeqNo: **2641959**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	8.030	0.10						8.040	0.124	10	H
Temp. at time of pH Analysis	16.500	0.10						16.90	2.40	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**			PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:15:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-003		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**			PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	RRB-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:30:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-004		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	R-28-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:05:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-005		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 8:20:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-007		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	320	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B** QC Batch: **62255**				PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	68	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE					**SM2540D**		
RunID: **NV00922-WC_170515B**	QC Batch: **62255**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515B** QC Batch: **62255**				PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515C** QC Batch: **62256**				PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515C**	QC Batch: **62256**				PrepDate	**5/15/2017**	Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL NON-FILTERABLE RESIDUE							
			SM2540D				
RunID: **NV00922-WC_170515C**	QC Batch: **62256**			PrepDate	**5/15/2017**		Analyst: **LR**
Suspended Solids (Residue, Non-Filterable)	ND	10	10		mg/L	1	5/15/2017 10:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	**LCS-62255**	SampType:	**LCS**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/15/2017**	RunNo:	**115250**
Client ID:	**LCSW**	Batch ID:	**62255**	TestNo:	**SM2540D**			Analysis Date:	**5/15/2017**	SeqNo:	**2645610**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	936.000	10	1000	0	93.6	80	120				

Sample ID	**MB-62255**	SampType:	**MBLK**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/15/2017**	RunNo:	**115250**
Client ID:	**PBW**	Batch ID:	**62255**	TestNo:	**SM2540D**			Analysis Date:	**5/15/2017**	SeqNo:	**2645611**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	**N024191-002DDUP**	SampType:	**DUP**	TestCode:	**160.2_2540D**	Units:	**mg/L**	Prep Date:	**5/15/2017**	RunNo:	**115250**
Client ID:	**ZZZZZZ**	Batch ID:	**62255**	TestNo:	**SM2540D**			Analysis Date:	**5/15/2017**	SeqNo:	**2645613**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.2_2540D_W

Sample ID	LCS-62256	SampType:	LCS	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/15/2017	RunNo:	115251
Client ID:	LCSW	Batch ID:	62256	TestNo:	SM2540D			Analysis Date:	5/15/2017	SeqNo:	2645623

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	947.000	10	1000	0	94.7	80	120				

Sample ID	MB-62256	SampType:	MBLK	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/15/2017	RunNo:	115251
Client ID:	PBW	Batch ID:	62256	TestNo:	SM2540D			Analysis Date:	5/15/2017	SeqNo:	2645624

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10									

Sample ID	N024191-012DDUP	SampType:	DUP	TestCode:	160.2_2540D	Units:	mg/L	Prep Date:	5/15/2017	RunNo:	115251
Client ID:	ZZZZZZ	Batch ID:	62256	TestNo:	SM2540D			Analysis Date:	5/15/2017	SeqNo:	2645626

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Suspended Solids (Residue, Non-Filter	ND	10						0	0	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	AB3-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:45:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A**	QC Batch: **R115274**			PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 10:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-002

Client Sample ID: C-CON-D-Q217
Collection Date: 5/11/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 10:55 AM
DISSOLVED METALS BY ICP-MS							
			EPA 3010A		**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 04:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-003

Client Sample ID: C-CON-S-Q217
Collection Date: 5/11/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 12:01 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 11:14 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 12:20 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 12:39 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:34 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 12:58 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
		EPA 218.6					
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 01:17 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-009

Client Sample ID: C-NR1-D-Q217
Collection Date: 5/11/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 01:55 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 05:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 02:14 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:35:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-011		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 02:33 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:13 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 02:52 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	MW-922-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:00:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-013		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 03:11 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170515A** QC Batch: **R115274**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	5/15/2017 03:48 PM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A			**EPA 6020**		
RunID: **NV00922-ICP7_170518B** QC Batch: **62222**				PrepDate	**5/13/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	5/18/2017 06:30 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115274**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **PBW**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646566**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115274**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **LCSW**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646567**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.054	0.20	5.000	0	101	90	110				

Sample ID **N024191-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646569**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.003	0.20	1.000	0	100	90	110				

Sample ID **N024191-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646570**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110	1.003	5.48	20	

Sample ID **N024191-002AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646572**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.091	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **N024191-004AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646574**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.076	0.20	1.000	0	108	90	110				

Sample ID **N024191-004ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646575**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20						0	0	20	

Sample ID **N024191-003AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646579**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.058	0.20	1.000	0	106	90	110				

Sample ID **N024191-005AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646581**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.059	0.20	1.000	0	106	90	110				

Sample ID **N024191-006AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646583**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.077	0.20	1.000	0	108	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024191-007AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646585

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.054	0.20	1.000	0	105	90	110				

Sample ID	N024191-008AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646587

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.095	0.20	1.000	0	110	90	110				

Sample ID	N024191-009AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646591

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID	N024191-010AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646593

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Sample ID	N024191-011AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646595

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.072	0.20	1.000	0	107	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024191-012AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646597

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.032	0.20	1.000	0	103	90	110				

Sample ID	N024191-013AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646599

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.080	0.20	1.000	0	108	90	110				

Sample ID	N024191-014AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115274
Client ID:	ZZZZZZ	Batch ID:	R115274	TestNo:	EPA 218.6			Analysis Date:	5/15/2017	SeqNo:	2646603

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.090	0.20	1.000	0	109	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62222	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115354
Client ID:	PBW	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650166

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	LCS-62222	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115354
Client ID:	LCSW	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650167

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.047	1.0	10.00	0	100	85	115				

Sample ID	N024191-002B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115354
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650173

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.629	1.0	10.00	0.05747	95.7	75	125				

Sample ID	N024191-002B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115354
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650174

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.628	1.0	10.00	0.05747	95.7	75	125	9.629	0.0118	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-CON-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 9:55:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-003

Client Sample ID: C-CON-S-Q217
Collection Date: 5/11/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.47	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.42	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:45:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-006		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-MAR-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 8:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-008		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.14	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 10:40:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-009		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR1-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:00:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-010		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	0.44	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR3-S-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 11:50:00 AM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-012		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.45	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-013

Client Sample ID: MW-922-Q217
Collection Date: 5/11/2017 12:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.43	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	C-NR4-D-Q217
Lab Order:	N024191	**Collection Date:**	5/11/2017 12:30:00 PM
Project:	PG&E Topock - RMP, RC000753.0801	**Matrix:**	GROUNDWATER
Lab ID:	N024191-014		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION				**SM4500-NO3F**			
RunID: **NV00922-WC_170523B**	QC Batch: **R115409**			PrepDate			Analyst: **RB**
Nitrate/Nitrite as N	0.46	0.022	0.050		mg/L	1	5/23/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115409	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	PBW	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653113

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115409	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	LCSW	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653114

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	85	115				

Sample ID	N024191-002EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	ZZZZZZ	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653116

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.444	0.050						0.4587	3.35	20	

Sample ID	N024191-002EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	ZZZZZZ	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653117

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.905	0.050	0.5000	0.4587	89.3	75	125				

Sample ID	N024191-002EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115409
Client ID:	ZZZZZZ	Batch ID:	R115409	TestNo:	SM4500-NO3			Analysis Date:	5/23/2017	SeqNo:	2653118

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.928	0.050	0.5000	0.4587	93.8	75	125	0.9052	2.47	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-002

Client Sample ID: C-CON-D-Q217
Collection Date: 5/11/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:09 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 07:31 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-003

Client Sample ID: C-CON-S-Q217
Collection Date: 5/11/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	44	1.8	20		ug/L	1	5/18/2017 11:14 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 07:55 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:19 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	21	1.8	20		ug/L	1	5/18/2017 08:00 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:23 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	82	1.8	20		ug/L	1	5/18/2017 08:05 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-006

Client Sample ID: C-NR4-S-Q217
Collection Date: 5/11/2017 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:28 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 08:10 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	51	1.8	20		ug/L	1	5/18/2017 11:33 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	6900	1.8	20		ug/L	1	5/18/2017 08:28 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:38 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	2600	1.8	20		ug/L	1	5/18/2017 08:33 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-009

Client Sample ID: C-NR1-D-Q217
Collection Date: 5/11/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:53 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	23	1.8	20		ug/L	1	5/18/2017 08:38 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 11:58 AM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 08:43 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 12:03 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	24	1.8	20		ug/L	1	5/18/2017 08:48 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 12:08 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 08:53 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-013

Client Sample ID: MW-922-Q217
Collection Date: 5/11/2017 12:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 12:12 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	22	1.8	20		ug/L	1	5/18/2017 08:58 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-014

Client Sample ID: C-NR4-D-Q217
Collection Date: 5/11/2017 12:30:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518B**	QC Batch: **62243**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 12:17 PM
TOTAL METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170518A**	QC Batch: **62242**			PrepDate	**5/15/2017**		Analyst: **CEI**
Iron	ND	1.8	20		ug/L	1	5/18/2017 09:03 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-62243	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115323
Client ID:	PBW	Batch ID:	62243	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648843

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	3.434	20									

Sample ID	LCS-62243	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115323
Client ID:	LCSW	Batch ID:	62243	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648844

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.760	20	100.0	0	108	85	115				

Sample ID	N024182-004B-MS	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115323
Client ID:	ZZZZZZ	Batch ID:	62243	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648848

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.821	20	100.0	11.39	91.4	75	125				

Sample ID	N024182-004B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115323
Client ID:	ZZZZZZ	Batch ID:	62243	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648849

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.728	20	100.0	11.39	91.3	75	125	102.8	0.0909	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	MB-62242	SampType:	MBLK	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	PBW	Batch ID:	62242	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648708

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	ND	20									

Sample ID	LCS-62242	SampType:	LCS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	LCSW	Batch ID:	62242	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648750

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	102.906	20	100.0	0	103	85	115				

Sample ID	N024191-002C-MS	SampType:	MS	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	ZZZZZZ	Batch ID:	62242	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648754

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	119.867	20	100.0	18.63	101	75	125				

Sample ID	N024191-002C-MSD	SampType:	MSD	TestCode:	6010_WPGE	Units:	ug/L	Prep Date:	5/15/2017	RunNo:	115320
Client ID:	ZZZZZZ	Batch ID:	62242	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2648755

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.619	20	100.0	18.63	100	75	125	119.9	1.05	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-002

Client Sample ID: C-CON-D-Q217
Collection Date: 5/11/2017 9:55:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/18/2017 04:38 PM
Barium	120	0.35	5.0		µg/L	5	5/18/2017 04:44 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 04:38 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/18/2017 04:38 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/24/2017 03:40 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-003

Client Sample ID: C-CON-S-Q217
Collection Date: 5/11/2017 10:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 05:17 PM
Barium	110	0.070	1.0		µg/L	1	5/18/2017 05:17 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 05:17 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/18/2017 05:17 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/18/2017 05:17 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-004

Client Sample ID: RRB-Q217
Collection Date: 5/11/2017 9:30:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/18/2017 05:23 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 05:23 PM
Manganese	1.6	0.056	0.50		µg/L	1	5/18/2017 05:23 PM
Molybdenum	5.4	0.039	0.50		µg/L	1	5/18/2017 05:23 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/18/2017 05:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-005

Client Sample ID: R-28-Q217
Collection Date: 5/11/2017 9:05:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 05:28 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 05:28 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 05:28 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/18/2017 05:28 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/18/2017 05:28 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-006

Client Sample ID: C-NR4-S-Q217
Collection Date: 5/11/2017 12:45:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.0	0.025	0.10		µg/L	1	5/18/2017 05:34 PM
Barium	110	0.070	1.0		µg/L	1	5/18/2017 05:34 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 05:34 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/18/2017 05:34 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/24/2017 03:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-007

Client Sample ID: C-MAR-D-Q217
Collection Date: 5/11/2017 8:20:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_170518C** QC Batch: **62222** PrepDate **5/13/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 05:39 PM
Barium	140	0.070	1.0		µg/L	1	5/18/2017 05:39 PM
Manganese	120	0.056	0.50		µg/L	1	5/18/2017 05:39 PM
Molybdenum	6.5	0.039	0.50		µg/L	1	5/18/2017 05:39 PM
Selenium	0.92	0.028	0.50		µg/L	1	5/18/2017 05:39 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-008

Client Sample ID: C-MAR-S-Q217
Collection Date: 5/11/2017 8:40:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_170518C** QC Batch: **62222** PrepDate **5/13/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 05:45 PM
Barium	140	0.070	1.0		µg/L	1	5/18/2017 05:45 PM
Manganese	120	0.056	0.50		µg/L	1	5/18/2017 05:45 PM
Molybdenum	6.6	0.039	0.50		µg/L	1	5/18/2017 05:45 PM
Selenium	0.83	0.028	0.50		µg/L	1	5/18/2017 05:45 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-009

Client Sample ID: C-NR1-D-Q217
Collection Date: 5/11/2017 10:40:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.2	0.025	0.10		µg/L	1	5/18/2017 05:51 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 05:51 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 05:51 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/18/2017 05:51 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/18/2017 05:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-010

Client Sample ID: C-NR1-S-Q217
Collection Date: 5/11/2017 11:00:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_170518C** QC Batch: **62222** PrepDate **5/13/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.0	0.025	0.10		µg/L	1	5/18/2017 06:07 PM
Barium	110	0.070	1.0		µg/L	1	5/18/2017 06:07 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:07 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/18/2017 06:07 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/18/2017 06:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-011

Client Sample ID: C-NR3-D-Q217
Collection Date: 5/11/2017 11:35:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 06:13 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 06:13 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:13 PM
Molybdenum	5.3	0.039	0.50		µg/L	1	5/18/2017 06:13 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/24/2017 03:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-012

Client Sample ID: C-NR3-S-Q217
Collection Date: 5/11/2017 11:50:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 06:18 PM
Barium	110	0.070	1.0		µg/L	1	5/18/2017 06:18 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:18 PM
Molybdenum	5.0	0.039	0.50		µg/L	1	5/18/2017 06:18 PM
Selenium	1.6	0.028	0.50		µg/L	1	5/18/2017 06:18 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-013

Client Sample ID: MW-922-Q217
Collection Date: 5/11/2017 12:00:00 PM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170518C**	QC Batch: **62222**			PrepDate	**5/13/2017**	Analyst: **CEI**	
Arsenic	2.1	0.025	0.10		µg/L	1	5/18/2017 06:24 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 06:24 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:24 PM
Molybdenum	5.2	0.039	0.50		µg/L	1	5/18/2017 06:24 PM
Selenium	1.4	0.028	0.50		µg/L	1	5/18/2017 06:24 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024191
Project: PG&E Topock - RMP, RC000753.0801
Lab ID: N024191-014

Client Sample ID: C-NR4-D-Q217
Collection Date: 5/11/2017 12:30:00 PM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP-MS

EPA 3010A **EPA 6020**

RunID: **NV00922-ICP7_170518C** QC Batch: **62222** PrepDate **5/13/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Arsenic	2.3	0.025	0.10		µg/L	1	5/18/2017 06:30 PM
Barium	120	0.070	1.0		µg/L	1	5/18/2017 06:30 PM
Manganese	ND	0.056	0.50		µg/L	1	5/18/2017 06:30 PM
Molybdenum	5.1	0.039	0.50		µg/L	1	5/18/2017 06:30 PM
Selenium	1.5	0.028	0.50		µg/L	1	5/24/2017 03:57 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62222**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/13/2017**	RunNo: **115356**
Client ID: **PBW**	Batch ID: **62222**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2650259**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Sample ID **LCS-62222**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/13/2017**	RunNo: **115356**
Client ID: **LCSW**	Batch ID: **62222**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2650260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	9.689	0.10	10.00	0	96.9	85	115				
Barium	104.898	1.0	100.0	0	105	85	115				
Manganese	100.124	0.50	100.0	0	100	85	115				
Molybdenum	9.406	0.50	10.00	0	94.1	85	115				
Selenium	9.717	0.50	10.00	0	97.2	85	115				

Sample ID **N024191-002B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/13/2017**	RunNo: **115356**
Client ID: **ZZZZZZ**	Batch ID: **62222**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2650266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.096	0.10	10.00	2.242	98.5	75	125				
Manganese	94.979	0.50	100.0	0	95.0	75	125				
Molybdenum	16.768	0.50	10.00	5.356	114	75	125				

Sample ID **N024191-002B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **5/13/2017**	RunNo: **115356**
Client ID: **ZZZZZZ**	Batch ID: **62222**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2650267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024191-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650267

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	12.277	0.10	10.00	2.242	100	75	125	12.10	1.48	20	
Manganese	93.183	0.50	100.0	0	93.2	75	125	94.98	1.91	20	
Molybdenum	16.687	0.50	10.00	5.356	113	75	125	16.77	0.483	20	

Sample ID	N024191-002B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650293

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	233.859	5.0	100.0	124.8	109	75	125				

Sample ID	N024191-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650294

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	234.365	5.0	100.0	124.8	110	75	125	233.9	0.216	20	

Sample ID	N024191-002B-MS	SampType:	MS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2654371

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.951	0.50	10.00	1.487	94.6	75	125				

Sample ID	N024191-002B-MSD	SampType:	MSD	TestCode:	6020_DIS	Units:	µg/L	Prep Date:	5/13/2017	RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2654372

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.967	0.50	10.00	1.487	94.8	75	125	10.95	0.139	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

Contact us
Nevada: 3151 W. Post Road, Las Vegas, NV 89118
P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F: 562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes	EDD Requirement: Excel EDD; Geotracker; Labspec; Others ✓; Specify: RWQCB; Global ID
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:	QA/QC: RTNE; RWQCB ✓; CalTrans; LEVEL III; LEVEL IV; Regulatory; Specify State
Address: Roseville, CA 95661	Email: [illegible]	Address:	Sample Receipt Condition (Y / N): 1 Chilled ✓; 2 Headspace; 3 Container Intact; 4 Seal Present; 5. IR number; 6 Method of Cooling: Ice
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330, Roseville, CA 95661	Email to: mbloes@pivox.com	P O #
Submitted By: Jason Mahn		Phone: 949-727-1400, ext 200	Fax
Title: Project Manager	Phone: 916-786-3302 Fax:		Sample Temp: 2.1°C / 3.8°C / 3.2°C
Signature: [signature] Date: 5/11/17	Sampled By: Jason Mahn		Courier
I hereby authorize ASSET Labs to perform the tests indicated below	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for legal action.		Tracking No
Project Name: PG&E Topock - RMP	Signature: [signature] Date: 5/11/17		
Project Number: RC000753 0801			

Matrix: Ground x; Sediment; Potable; Soil; NPDES; Other Solid; Surface

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH (3x250 mL poly)	Field QC Cr(VI) FF (E218.6) (NH4)2 SO4, NH4 OH	Dissolved metals (SW6010B/SW6020A(dis) FF HNO3 Cr	Dissolved metals (SW6010B/SW6020A(dis) FF HNO3 Ca, Mg, K, Na, B	Dissolved metals (SW6010B/SW6020A(dis) FF HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B), HNO3 Fe	Anions (E300.0): Br, Cl, SO4	Specific Conductance (E120.1)	pH (SM4500H+B)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate, H2SO4	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
						500 ml	500 ml	500 ml	500 ml	500 ml	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	250 mL poly					
1	N024191 - 01	AB3-Q217		0945			X											m	1	P	BNS	
2	- 02	C-CON-D-Q217		0955		X		X		X	X		X	X		X	X	m	7	P	BNS	
3	- 03	C-CON-S-Q217		1015		X		X		X	X		X	X		X	X	m	7	P	BNS	
4	- 04	RRB-Q217		0930		X		X		X	X		X	X		X	X	m	7	P	BNS	
5	- 05	R-28-Q217		0905		X		X		X	X		X	X		X	X	m	7	P	BNS	
6	- 06	C-NR4-S-Q217		1245		X		X		X	X		X	X		X	X	m	7	P	BNS	
7	- 07	C-MAR-D-Q217		0820		X		X		X	X		X	X		X	X	m	7	P	BNS	
8	- 08	C-MAR-S-Q217		0840		X		X		X	X		X	X		X	X	m	7	P	BNS	
9	- 09	C-NR1-D-Q217		1040		X		X		X	X		X	X		X	X	m	7	P	BNS	
10	- 10	C-NR1-S-Q217		1100		X		X		X	X		X	X		X	X	m	7	P	BNS	
11	- 11	C-NR3-D-Q217		1135		X		X		X	X		X	X		X	X	m	7	P	BNS	
12	- 12	C-NR3-S-Q217		1150		X		X		X	X		X	X		X	X	m	7	P	BNS	
13	- 13	MW-922-Q217		1200		X		X		X	X		X	X		X	X	m	7	P	BNS	
14	- 14	C-NR4-D-Q217		1230		X		X		X	X		X	X		X	X	m	7	P	BNS	

Relinquished by (Signature and Printed Name)	Date/Time	Relinquished by (Signature and Printed Name)	Date/Time
[signature]	5/11/17	[signature]	5/11/17 1405
Phil Galaney	5/11/17 1611	Phil Galaney	5/11/17 1611
[signature]		[signature]	

Turn Around Time (TAT)

- A = 24 Hrs or Same Day TAT
- B = Next Workday
- C = 2 Workdays
- D = 3 Workdays
- x E = Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM

Special Instruction:

Terms:
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days. Surcharges will apply for rush analysis:
Less than 24 Hrs = 200% Next Day= 100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages. 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Testing are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

White=Laboratory Copy

Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	5/11/2017	Workorder:	N024191
Rep sample Temp (Deg C):	2.1/3.6/3.2	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 5/19/2017

Reviewed By: MBC 5/19/2017

nancy@assetlaboratories.com

From: Yoandra Rodriguez [yoandra@assetlaboratories.com]
Sent: Thursday, May 25, 2017 4:30 PM
To: 'Marlon B. Cartin'
Cc: Nancy
Subject: PG&E Topock - RMP, RC000753.0801 (Asset Labs No. N024191)

Hi Marlon,

FYI, sampling date for the attached WO was taken from sample labels.

Thanks,

Yoandra Rodriguez
Sample Control Officer
California: 11110 Artesia Blvd., Ste. B, Cerritos, CA 90703 I P: 562.219.7435 I F: 562.219.7436
Nevada: 3151 W. Post Road, Las Vegas, NV 89118 I P: 702.307.2659 Ext. 411 I F: 702.307.2691 I
www.assetlaboratories.com

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N024191_COC.pdf

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-001A	AB3-Q217	5/11/2017 9:45:00 AM	5/25/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-002A	C-CON-D-Q217	5/11/2017 9:55:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-002B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-002C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-002D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-002E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-003A	C-CON-S-Q217	5/11/2017 10:15:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-003B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-003C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-003D	C-CON-S-Q217	5/11/2017 10:15:00 AM	5/25/2017	Groundwater	EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-003E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-004A	RRB-Q217	5/11/2017 9:30:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-004B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-004C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-004D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-004E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-005A	R-28-Q217	5/11/2017 9:05:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-005B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-005B	R-28-Q217	5/11/2017 9:05:00 AM	5/25/2017	Groundwater	EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-005C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-005D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-005E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-006A	C-NR4-S-Q217	5/11/2017 12:45:00 PM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-006B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-006C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-006D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-006E	C-NR4-S-Q217	5/11/2017 12:45:00 PM	5/25/2017	Groundwater	SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-007A	C-MAR-D-Q217	5/11/2017 8:20:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-007B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-007C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-007D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-007E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-008A	C-MAR-S-Q217	5/11/2017 8:40:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-008B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-008C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-008C	C-MAR-S-Q217	5/11/2017 8:40:00 AM	5/25/2017	Groundwater	EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-008D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-008E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-009A	C-NR1-D-Q217	5/11/2017 10:40:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-009B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-009C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-009D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-009E	C-NR1-S-Q217		5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-010A	~~C-NR1S-Q217~~	5/11/2017 11:00:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-010B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW

for 5/26/17

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-010B	~~C-NR1S-Q217~~ C-NR1-S-Q217	5/11/2017 11:00:00 AM	5/25/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-010C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-010D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-010E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-011A	C-NR3-D-Q217	5/11/2017 11:35:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-011B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-011C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-011D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-011D	C-NR3-D-Q217	5/11/2017 11:35:00 AM	5/25/2017	Groundwater		Total Suspended Solids Prep	☐	☐	☐	WW
N024191-011E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-012A	C-NR3-S-Q217	5/11/2017 11:50:00 AM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-012B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-012C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-012D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-012E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-013A	MW-922-Q217	5/11/2017 12:00:00 PM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-013B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-013C	MW-922-Q217	5/11/2017 12:00:00 PM	5/25/2017	Groundwater	EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-013D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-013E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-014A	C-NR4-D-Q217	5/11/2017 12:30:00 PM	5/25/2017		EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024191-014B			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			5/25/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024191-014C			5/25/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			5/25/2017		EPA 6010B	TOTAL METALS BY ICP	☐	☐	☐	WW
N024191-014D			5/25/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			5/25/2017		SM4500-H+B	pH	☐	☐	☐	WW
			5/25/2017		SM2540D	TOTAL NON-FILTERABLE RESIDUE	☐	☐	☐	WW
			5/25/2017			Total Suspended Solids Prep	☐	☐	☐	WW
N024191-014E			5/25/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024191-015A	FOLDER	5/25/2017	5/25/2017		EDD	RWQCB	☐	☐	☐	LAB

WORK ORDER Summary

11-May-17

WorkOrder: N024191

Client ID: ARCUS02

Project: PG&E Topock - RMP, RC000753.0801 **QC Level:** Level IV **Date Received:** 5/11/2017

Comments:

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024191-015A	FOLDER	5/25/2017	5/25/2017		Folder	Folder	☐	☐	☐	LAB
			5/25/2017		Folder	Folder	☐	☐	☐	LAB

List of Analyst

ASSET Laboratories Work Order: **N024191**

NAME	TEST METHOD
Claire Ignacio	EPA 6010B, EPA 6020
Ria Abes	EPA 218.6
Ryan Balilu	SM 4500-NO3F
Lilia Ramit	EPA 120.1, SM 4500-H+B, SM 2540D

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115190 **Analyst:** LSR

ASSET #: N024191 **Date Analyzed:** 5/12/2016

Method: EPA 120.1

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/~~MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/16/2017

2nd Level Reviewer: 5/25/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 5/11/17 1010 CONT

Analyst: LSR

Standard	Std ID	Reading	Comments
TH: 9.76 mS/cm	CINW-170303A	9.72 mS/cm @ 21.6°C	% Rec: (90-110%)
1413	161214B	1407 @ 21.8°C	
10000	170329A	9940 @ 21.8°C	
99582	170329C	99100 @ 21.6°C	

	Sample ID	Matrix	Reading	Comments
1	NO2N184-011D	H2O	953 @ 20.3°C	
2	12D		940 @ 19.7°C	
3	13D		937 @ 19.6°C	
4	14D C		1026 @ 19.0°C	
5	NO2N185-001C		970 @ 18.5°C	
6	NO2N184-14C DUP		1032 @ 18.5°C	
7				
8				
9	1413 mS/cm	CINW-170125F	1466 @ 20.8°C	
10	10000	170125E	10310 @ 21.3°C	
Dup	99899	161104A	100400 @ 21.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 5/12/17 1100

Analyst: LSR

Standard	Std ID	Reading	Comments
9.76 mS/cm	CINW-170303A	9.78 mS/cm @ 20.1°C	% Rec: (90-110%)
1413	161214B	1410 @ 20.3°C	
10000	170329A	9950 @ 20.0°C	
99582	170329C	99300 @ 19.9°C	

	Sample ID	Matrix	Reading	Comments
1	NO2N191-002D	H2O	986 @ 19.3°C	STD CHECK
2	3D		972 @ 19.3°C	1413 - CINW 170125F
3	4D		958 @ 19.0°C	= 1463 @ 19.8°C
4	5D		946 @ 19.2°C	10000 - CINW 170125E
5	6D		953 @ 19.3°C	= 10160 @ 20.5°C
6	7D		1307 @ 19.0°C	99899 - CINW 161104A
7	8D		1278 @ 19.1°C	= 100400 @ 20.8°C
8	9D		949 @ 19.3°C	
9	10D		948 @ 18.9°C	
10	11D		945 @ 19.1°C	
Dup	7D DUP		1310 @ 18.7°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Julia Ramit 5/16/2017

Logbook # 5

Date: 5/12/17 1100

Analyst: LRP COMTD

Standard	Std ID	Reading	Comments
9.76 mS/cm	CINV-170303A	9.78 mS/cm @ 20.1°C	% Rec: (90-110%)
1413	161214B	1410 @ 20.3°C	
10003	170329A	9950 @ 20.0°C	
99582	170329C	99300 @ 19.4°C	

	Sample ID	Matrix	Reading	Comments
1	N024191-0120	H2O	953 @ 19.2°C	
2	130		960 @ 19.2°C	
3	140		964 @ 19.3°C	
4	N024198-001B		1118 @ 19.8°C	
5	N024199-001B		1065 @ 19.5°C	
6	N024198-1B DUP		1115 @ 19.2°C	
7				Julia Ramit 5/16/2017
8				
9	1413 mS/cm	CINV-170125F	1437 @ 20.5°C	
10	10000	170125F	10220 @ 21.0°C	
Dup	99899	161104A	99400 @ 21.3°C	Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 5/13/17 @ 1600

Analyst: MSM

Standard	Std ID	Reading	Comments
9.76 uS/cm	CINV-170303A	9.96 mS/cm @ 23.1°C	% Rec: (90-110%)
1413	161214B	1407 @ 23.0°C	
10003	170329A	9940 @ 22.9°C	
99582	170329C	99400 @ 21.9°C	

	Sample ID	Matrix	Reading	Comments
1	N024223-001B	H2O	0.83 mS/cm @ 21.3°C	
2	N024224-001B		0.78 @ 21.2°C	
3	N024225-001B		1115 @ 21.0°C	
4	N024226-001B		1094 @ 21.5°C	
5	N024227-001B		1097 @ 21.1°C	
6	N024228-001B		1078 @ 21.6°C	
7	N024229-001B		1087 @ 21.9°C	
8	N024230-001B		969 @ 22.0°C	
9	1 001DUP		972 @ 21.9°C	
10				
Dup	1413 mS/cm	CINV-170125F	1443 mS/cm @ 23.6°C	Accept: 10% water, 20% soil
	Std Chk: 10010	170125F	10070 @ 23.0°C	% Rec: (90-110%)
	99899	161104A	99900 @ 23.1°C	Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115189 **Instrument ID:** pH meter

ASSET #: N024191 **Analyst:** LSR

Date Analyzed: 12-May

Method: EPA 150.1

pH Meter Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X					
2. Was a closing buffer used at the end of analysis?	X					
3. Was the meter checked every 10 samples?	X					
Sample Information						
4. Are all samples analyzed within hold time.		X				
QC Items						
5. Was a duplicate sample analyzed?	X					
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			
7. Runlog complete and included in package.	X					
Preliminary Report						
8. Does the raw data match the preliminary report?	X					
9. Are analytical results correct?	X					
10. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer Julia Ramit Date: 5/16/2017

2nd Level Reviewer 5/25/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

pH Logbook

Date: 5/11/17 935 CONT

Analyst: LKR

Standard	Std ID	pH	Comments
Buffer 7	CNW - 170125C	7.00 @ 21.5°C	SLOPE: 96.8%
Buffer 4	170125B	4.02 @ 21.6°C	
Buffer 10	170331A	10.05 @ 21.4°C	

	Sample ID	Matrix	pH	Comments
1	NO24184-011D	H2O	8.28 @ 17.1°C	
2	12D		8.24 @ 16.8°C	
3	13D		8.30 @ 17.0°C	
4	14DC		7.51 @ 16.2°C	
5	NO24185-001C		7.60 @ 16.7°C	
6	1C DUP		7.63 @ 16.9°C	
7				
8				
9				
10				
Dup				Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CNW-170125D	6.99 @ 20.8°C	Accept: +/-0.1 pH units from expected value

Date: 5/12/17 1025

Analyst: LKR

Standard	Std ID	pH	Comments
Buffer 7	CNW-170125C	7.00 @ 19.3°C	SLOPE: 95.9%
Buffer 4	170125B	4.01 @ 19.0°C	
Buffer 10	170331A	10.05 @ 18.7°C	

	Sample ID	Matrix	pH	Comments
1	NO24191-002D	H2O	8.28 @ 15.8°C	
2	3D		8.28 @ 15.8°C	
3	4D		8.30 @ 15.6°C	
4	5D		8.33 @ 15.4°C	
5	6D		7.63 @ 15.8°C	
6	7D		7.54 @ 15.7°C	
7	8D		7.55 @ 16.0°C	Julia Ramit
8	9D		8.31 @ 16.2°C	5/16/2017
9	10D		8.33 @ 16.0°C	
10	11D		8.32 @ 15.7°C	
Dup	7D DUP		7.57 @ 15.5°C	Accept: 10% water, 20% soil
	Buffer 7, 4, 10 (Circle one)	CNW-170125D	6.98 @ 19.0°C	Accept: +/-0.1 pH units from expected value

Date: 5/12/17 1015

Analyst: LSR

CONT'D

Standard	Std ID	pH	Comments
Buffer 7	CIW-170125C	7.00 @ 19.3°C	SLOPE: 95.9%
Buffer 4	170125B	4.01 @ 19.0°C	
Buffer 10	170331A	10.05 @ 18.7°C	

	Sample ID	Matrix	pH	Comments
1	NO24191-01AD	H2O	8.27 @ 16.0°C	
2	13D		8.30 @ 15.8°C	
3	14D		8.27 @ 16.4°C	
4	NO24198-001B		7.65 @ 17.7°C	
5	NO24199-001B		8.04 @ 16.9°C	
6	1B DUP		8.03 @ 16.5°C	
7				
8				Sudha Ramit 5/16/2017
9				
10				Accept: 10% water, 20% soil
Dup				
	Buffer 7, 4, 10 (Circle one)	CIW-170125D	6.97 @ 20.0°C	Accept: +/-0.1 pH units from expected value

Date: 5/12/17 1330

Analyst: LSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-170125C	7.00 @ 19.3°C	SLOPE: 95.9%
Buffer 4	170125B	4.01 @ 19.0°C	
Buffer 10	170331A	10.05 @ 18.7°C	

	Sample ID	Matrix	pH	Comments
1	NO24162-001A	Solid	7.00 @ 24.0°C	
2	1A DUP	1	6.97 @ 24.7°C	
3				
4				
5				
6				
7				
8				
9				
10				Accept: 10% water, 20% soil
Dup				
	Buffer 7, 4, 10 (Circle one)	CIW-170125D	6.97 @ 24.3°C	Accept: +/-0.1 pH units from expected value

Logbook #11

SM 2540D

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62255/62256 **Analyst:** LSR

ASSET #: N024191 **Date Analyzed:** 5/15/2016

Method: EPA 160.2

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 5/16/2017

2nd Level Reviewer: 5/25/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540D
TEST NAME: Total Non-Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TSS concentration in mg/L, in the original sample as follows:

$$\text{TSS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N024191-002D,** TSS concentration in mg/L is calculated as follows:

$$\text{TSS, mg/L} = \frac{(1.4322- 1.4319) *1000000}{100}$$
$$= 3 \text{ mg/L}$$

Since reporting limit is 10 mg/L, therefore:

TSS = ND

Julia Ramit 5/16/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/15/2017 10:43:10**
Prep End Date: **5/15/2017 4:30:00 P**
Reviewed/ Date: 5/25/2017
Initials/ Date: Lilia Ramit 5/16/2017
Prep Batch **62255** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**
Prep Factor Units: **mL / mL** Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62255	Water		100	☐	0	0	100	1.000		
MB-62255	Water		100	☐	0	0	100	1.000		
N024191-002D	Groundwater		100	☐	0	0	100	1.000		
N024191-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N024191-003D	Groundwater		100	☐	0	0	100	1.000		
N024191-004D	Groundwater		100	☐	0	0	100	1.000		
N024191-005D	Groundwater		100	☐	0	0	100	1.000		
N024191-006D	Groundwater		100	☐	0	0	100	1.000		
N024191-007D	Groundwater		100	☐	0	0	100	1.000		
N024191-008D	Groundwater		100	☐	0	0	100	1.000		
N024191-009D	Groundwater		100	☐	0	0	100	1.000		
N024191-010D	Groundwater		100	☐	0	0	100	1.000		
N024191-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8944	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170515A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 5/15/2017 10:43:10
Prep End Date:

Reviewed/ Date: _____
Initials/ Date: Lilia Ramit 5/16/2017

Prep Batch 62255 Prep Code: 160.2_W_PRE Technician: Lilia Ramit Prep Factor Units: mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62255	Water	lw5T170515A	100	☐	0	0	100	1.000		
MB-62255	Water		100	☐	0	0	100	1.000		
N024191-002D	Groundwater		100	☐	0	0	100	1.000		
N024191-002D-DU	Groundwater		100	☐	0	0	100	1.000		
N024191-003D	Groundwater		100	☐	0	0	100	1.000		
N024191-004D	Groundwater		100	☐	0	0	100	1.000		
N024191-005D	Groundwater		100	☐	0	0	100	1.000		
N024191-006D	Groundwater		100	☐	0	0	100	1.000		
N024191-007D	Groundwater		100	☐	0	0	100	1.000		
N024191-008D	Groundwater		100	☐	0	0	100	1.000		
N024191-009D	Groundwater		100	☐	0	0	100	1.000		
N024191-010D	Groundwater		100	☐	0	0	100	1.000		
N024191-011D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/15/2017 10:43:25**
Prep End Date: **5/15/2017 4:30:00 P**

Reviewed/ Date: 5/25/2017

Initials/ Date: Lilia Ramit 5/16/2017

Prep Batch **62256** Prep Code: **160.2_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **105**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62256	Water		100	☐	0	0	100	1.000		
MB-62256	Water		100	☐	0	0	100	1.000		
N024191-012D	Groundwater		100	☐	0	0	100	1.000		
N024191-012D-DU	Groundwater		100	☐	0	0	100	1.000		
N024191-013D	Groundwater		100	☐	0	0	100	1.000		
N024191-014D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8944	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170515A	1000 ppm Talc	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: 5/15/2017 10:43:25
Prep End Date:

Reviewed/ Date:
Initials/ Date: Lilia Ramit 5/16/2017

Prep Batch 62256 Prep Code: 160.2_W_PRE Technician: Lilia Ramit

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62256	Water	1WST170515A	100	☐	0	0	100	1.000		
MB-62256	Water		100	☐	0	0	100	1.000		
N024191-012D	Groundwater		100	☐	0	0	100	1.000		
N024191-012D-DU	Groundwater		100	☐	0	0	100	1.000		
N024191-013D	Groundwater		100	☐	0	0	100	1.000		
N024191-014D	Groundwater		100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

8944

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/15/17 1043	MB G2255	100	1.4047 1.4048	1.4046 1.4046	
	LS G2255	100	1.4239 1.4240	1.5175 1.5176	
1	NO24191-0020	100	1.4320 1.4319	1.4321 1.4322	
2	2D DUP	100	1.4114 1.4113	1.4114 1.4116	
3	3D	100	1.4049 1.4050	1.4053 1.4052	
4	4D	100	1.3982 1.3981	1.3986 1.3985	
5	5D	100	1.3989 1.3990	1.3994 1.3992	
6	6D	100	1.3954 1.3954	1.3958 1.3959	
7	7D	100	1.4060 1.4063	1.4384 1.4386	
8	8D	100	1.4161 1.4163	1.4229 1.4231	

Silvia Ramit 5/16/2017

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ID CA01638
ORELAP/NELAP Cert 4044

SOLIDS RAW DATA

TEST :TSS/ TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
5/15/17 9	N024191-009D	100	1.4052 1.4053	1.4054 1.4054	
10	10D	100	1.4113 1.4113	1.4114 1.4116	
11	11D	100	1.4029 1.4031	1.4032 1.4033	
12	MB 62256	100	1.4214 1.4214	1.4213 1.4213	
13	LCS 62256	100	1.4010 1.4012	1.4960 1.4959	
14	N024191-012D	100	1.4209 1.4211	1.4213 1.4214	
15	12D DUP	100	1.3958 1.3960	1.3961 1.3962	
16	13D	100	1.4166 1.4167	1.4167 1.4168	
17	14D	100	1.4220 1.4221	1.4221 1.4222	
	Julia Ramit 5/16/2017				

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ELAP Cert 2676 | NV Cert NV00022
ORELAP/NELAP Cert 4046

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
5/15/2017							
MB-62255	100	1.4048	1.4046	-2.0000	1.00	-2	MBLK
LCS-62255	100	1.4240	1.5176	936.0000	1.00	936	LCS
N024191-002D	100	1.4319	1.4322	3.0000	1.00	3	SAMP
N024191-002DDUP	100	1.4113	1.4116	3.0000	1.00	3	DUP
N024191-003D	100	1.405	1.4052	2.0000	1.00	2	SAMP
N024191-004D	100	1.3981	1.3985	4.0000	1.00	4	SAMP
N024191-005D	100	1.399	1.3992	2.0000	1.00	2	SAMP
N024191-006D	100	1.3954	1.3959	5.0000	1.00	5	SAMP
N024191-007D	100	1.4063	1.4386	323.0000	1.00	323	SAMP
N024191-008D	100	1.4163	1.4231	68.0000	1.00	68	SAMP
N024191-009D	100	1.4053	1.4054	1.0000	1.00	1	SAMP
N024191-010D	100	1.4113	1.4116	3.0000	1.00	3	SAMP
N024191-011D	100	1.4031	1.4033	2.0000	1.00	2	SAMP

Julia Ramit 5/16/2017

TOTAL SUSPENDED SOLIDS, TSS

TSS, mg/L = (A-B) * 10000*PF

where:

A = weight in g of aluminum dish + filter disc + residue after drying
B = weight in g of aluminum dish + filter disc
PF = 100/volume of sample used in mL

Date:	vol of sample (mL)	weight in g of aluminum dish + filter disc (B)	weight in g of aluminum dish + filter disc + residue after drying (A)	A-B*10000	Prep Fact (PF)	TSS, mg/L	Sample Type
5/15/2017							
MB-62256	100	1.4214	1.4213	-1.0000	1.00	-1	MBLK
LCS-62256	100	1.4012	1.4959	947.0000	1.00	947	LCS
N024191-012D	100	1.4211	1.4214	3.0000	1.00	3	SAMP
N024191-012DDUP	100	1.396	1.3962	2.0000	1.00	2	DUP
N024191-013D	100	1.4167	1.4168	1.0000	1.00	1	SAMP
N024191-014D	100	1.4221	1.4222	1.0000	1.00	1	SAMP

Julia Ramit 5/16/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115274
ASSET #: N024191

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 5/15/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer: rba Date: 5/17/2017

2nd Level Reviewer: 5/25/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N024191-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.00$$

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

rba 5/17/2017

ANALYSIS RUN LOG

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005A	SAMP	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-1,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-1,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-2,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-2,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-3,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-3,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,10
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-4,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-4,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	~~N023912-005AMS,MS~~	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL N023912-005A,SAMP,1
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-5,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-5,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

INJECTION LOG: 170515A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/15/17 8:51 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/15/17 9:02 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/15/17 9:11 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/15/17 9:21 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/15/17 9:30 AM	Reported
17	MB-R115274	MBLK	1	Hexavalent Chromium	05/15/17 9:40 AM	Reported
18	LCS-R115274	LCS	1	Hexavalent Chromium	05/15/17 9:49 AM	Reported
19	N024191-001A	SAMP	1	Hexavalent Chromium	05/15/17 10:25 AM	Reported
20	N024191-001AMS	MS	1	Hexavalent Chromium	05/15/17 10:36 AM	Reported
21	N024191-001AMSD	MSD	1	Hexavalent Chromium	05/15/17 10:46 AM	Reported
22	N024191-002A	SAMP	1	Hexavalent Chromium	05/15/17 10:55 AM	Reported
23	N024191-002AMS	MS	1	Hexavalent Chromium	05/15/17 11:05 AM	Reported
24	N024191-004A	SAMP	1	Hexavalent Chromium	05/15/17 11:14 AM	Reported
25	N024191-004AMS	MS	1	Hexavalent Chromium	05/15/17 11:23 AM	Reported
26	N024191-004ADUP	DUP	1	Hexavalent Chromium	05/15/17 11:33 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/15/17 11:42 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/15/17 11:52 AM	Reported
29	N024191-003A	SAMP	1	Hexavalent Chromium	05/15/17 12:01 PM	Reported
30	N024191-003AMS	MS	1	Hexavalent Chromium	05/15/17 12:11 PM	Reported
31	N024191-005A	SAMP	1	Hexavalent Chromium	05/15/17 12:20 PM	Reported
32	N024191-005AMS	MS	1	Hexavalent Chromium	05/15/17 12:30 PM	Reported
33	N024191-006A	SAMP	1	Hexavalent Chromium	05/15/17 12:39 PM	Reported
34	N024191-006AMS	MS	1	Hexavalent Chromium	05/15/17 12:49 PM	Reported
35	N024191-007A	SAMP	1	Hexavalent Chromium	05/15/17 12:58 PM	Reported
36	N024191-007AMS	MS	1	Hexavalent Chromium	05/15/17 1:08 PM	Reported
37	N024191-008A	SAMP	1	Hexavalent Chromium	05/15/17 1:17 PM	Reported
38	N024191-008AMS	MS	1	Hexavalent Chromium	05/15/17 1:26 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/15/17 1:36 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/15/17 1:45 PM	Reported
41	N024191-009A	SAMP	1	Hexavalent Chromium	05/15/17 1:55 PM	Reported
42	N024191-009AMS	MS	1	Hexavalent Chromium	05/15/17 2:04 PM	Reported

INJECTION LOG: 170515A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024191-010A	SAMP	1	Hexavalent Chromium	05/15/17 2:14 PM	Reported
44	N024191-010AMS	MS	1	Hexavalent Chromium	05/15/17 2:23 PM	Reported
45	N024191-011A	SAMP	1	Hexavalent Chromium	05/15/17 2:33 PM	Reported
46	N024191-011AMS	MS	1	Hexavalent Chromium	05/15/17 2:42 PM	Reported
47	N024191-012A	SAMP	1	Hexavalent Chromium	05/15/17 2:52 PM	Reported
48	N024191-012AMS	MS	1	Hexavalent Chromium	05/15/17 3:01 PM	Reported
49	N024191-013A	SAMP	1	Hexavalent Chromium	05/15/17 3:11 PM	Reported
50	N024191-013AMS	MS	1	Hexavalent Chromium	05/15/17 3:20 PM	Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/15/17 3:29 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/15/17 3:39 PM	Reported
53	N024191-014A	SAMP	1	Hexavalent Chromium	05/15/17 3:48 PM	Reported
54	N024191-014AMS	MS	1	Hexavalent Chromium	05/15/17 3:58 PM	Reported
55	CCV-5	CCV	1	Hexavalent Chromium	05/15/17 4:07 PM	Reported
56	CCB-5	CCB	1	Hexavalent Chromium	05/15/17 4:17 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170515A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\fromChromeleonLocal\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**15/May/17 17:18:31**
No. of Injections:	**59**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/15/2017 08:51	Finished	
13	BLANK	2	1000	Unknown		05/15/2017 09:02	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/15/2017 09:11	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/15/2017 09:21	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/15/2017 09:30	Finished	CCB R170428A
17	MB-H2O,MBLK,1	6	1000	Unknown		05/15/2017 09:40	Finished	MB R170428A
18	LCS-H2O,LCS,1	7	1000	Unknown		05/15/2017 09:49	Finished	LCS, IWST-170330B
19	N024191-001A,SAMP	9	1000	Unknown		05/15/2017 10:25	Finished	SAMP, 10mL
20	N024191-001AMS,MS	10	1000	Unknown		05/15/2017 10:36	Finished	MS (1ppb), IWST-170330B,10
21	N024191-001AMSD,M	11	1000	Unknown		05/15/2017 10:46	Finished	MSD (1ppb), IWST-170330B,10
22	N024191-002A,SAMP	12	1000	Unknown		05/15/2017 10:55	Finished	SAMP, 10mL
23	N024191-002AMS,MS	13	1000	Unknown		05/15/2017 11:05	Finished	MS (1ppb), IWST-170330B,10
24	N024191-004A,SAMP	14	1000	Unknown		05/15/2017 11:14	Finished	SAMP, 10mL
25	N024191-004AMS,MS	15	1000	Unknown		05/15/2017 11:23	Finished	MS (1ppb), IWST-170330B,10
26	N024191-004ADUP,D	16	1000	Unknown		05/15/2017 11:33	Finished	DUP, 10mL
27	CCV-2,CCV1,1,	17	1000	Unknown		05/15/2017 11:42	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	18	1000	Unknown		05/15/2017 11:52	Finished	CCB R170428A
29	N024191-003A,SAMP	19	1000	Unknown		05/15/2017 12:01	Finished	SAMP, 10mL
30	N024191-003AMS,MS	20	1000	Unknown		05/15/2017 12:11	Finished	MS (1ppb), IWST-170330B,10
31	N024191-005A,SAMP	21	1000	Unknown		05/15/2017 12:20	Finished	SAMP, 10mL
32	N024191-005AMS,MS	22	1000	Unknown		05/15/2017 12:30	Finished	MS (1ppb), IWST-170330B,10
33	N024191-006A,SAMP	23	1000	Unknown		05/15/2017 12:39	Finished	SAMP, 10mL
34	N024191-006AMS,MS	24	1000	Unknown		05/15/2017 12:49	Finished	MS (1ppb), IWST-170330B,10
35	N024191-007A,SAMP	25	1000	Unknown		05/15/2017 12:58	Finished	SAMP, 10mL
36	N024191-007AMS,MS	26	1000	Unknown		05/15/2017 13:08	Finished	MS (1ppb), IWST-170330B,10
37	N024191-008A,SAMP	27	1000	Unknown		05/15/2017 13:17	Finished	SAMP, 10mL
38	N024191-008AMS,MS	28	1000	Unknown		05/15/2017 13:26	Finished	MS (1ppb), IWST-170330B,10
39	CCV-3,CCV,1,	29	1000	Unknown		05/15/2017 13:36	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	30	1000	Unknown		05/15/2017 13:45	Finished	CCB R170428A
41	N024191-009A,SAMP	31	1000	Unknown		05/15/2017 13:55	Finished	SAMP, 10mL
42	N024191-009AMS,MS	32	1000	Unknown		05/15/2017 14:04	Finished	MS (1ppb), IWST-170330B,10
43	N024191-010A,SAMP	33	1000	Unknown		05/15/2017 14:14	Finished	SAMP, 10mL
44	N024191-010AMS,MS	34	1000	Unknown		05/15/2017 14:23	Finished	MS (1ppb), IWST-170330B,10
45	N024191-011A,SAMP	35	1000	Unknown		05/15/2017 14:33	Finished	SAMP, 10mL
46	N024191-011AMS,MS	36	1000	Unknown		05/15/2017 14:42	Finished	MS (1ppb), IWST-170330B,10
47	N024191-012A,SAMP	37	1000	Unknown		05/15/2017 14:52	Finished	SAMP, 10mL
48	N024191-012AMS,MS	38	1000	Unknown		05/15/2017 15:01	Finished	MS (1ppb), IWST-170330B,10
49	N024191-013A,SAMP	39	1000	Unknown		05/15/2017 15:11	Finished	SAMP, 10mL
50	N024191-013AMS,MS	40	1000	Unknown		05/15/2017 15:20	Finished	MS (1ppb), IWST-170330B,10
51	CCV-4,CCV1,1,	41	1000	Unknown		05/15/2017 15:29	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	42	1000	Unknown		05/15/2017 15:39	Finished	CCB R170428A
53	N024191-014A,SAMP	43	1000	Unknown		05/15/2017 15:48	Finished	SAMP, 10mL
54	N024191-014AMS,MS	44	1000	Unknown		05/15/2017 15:58	Finished	MS (1ppb), IWST-170330B,10
55	CCV-5,CCV,1,	45	1000	Unknown		05/15/2017 16:07	Finished	CCV @5ppb, IWST-170330B
56	CCB-5,CCB,1,	46	1000	Unknown		05/15/2017 16:17	Finished	CCB R170428A
57	SHUTDOWN	47	1000	Unknown		05/15/2017 16:55	Finished	
58	Eluent: R170514B	48	1000	Unknown		n.a.	Finished	Eluent
59	PCR: R170514C	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Hexavalent Chromium Preparation and Runlog

Sample Preparation

Date Prepared: 5/11/17
Time Prepared: 1519H
Prepared By: RBA

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-161228C
NH4OH + NH4SO4 eluent: L170511F
NH4OH + NH4SO4 buffer: L170419B

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	ND24189-001A	7.85	9.53	~200ml	~250mL	+5mL L170419B	
2)	2A	7.87	9.51				
3)	3A	8.3	7.91 9.49				
4)	4A	7.78	9.45				
5)	5A	7.62	9.47				
6)	6A	7.58	9.39				
7)	7A	7.61	9.50				
8)	8A	7.72	9.48				
9)	9A	7.49	9.54				
10)	10A	7.63	9.39				
11)	11A	7.72	9.45				
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 5/15/17
Time Prepared: 0923
Prepared By: RBA

Slope: 95.9%
pH 4: 4.03 @ 19.1°C
7: 7.01 @ 19.1°C
10: 10.05 @ 19.2°C
CCV: 6.98 @ 20.2°C

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-161228C
NH4OH + NH4SO4 eluent: L170514B
NH4OH + NH4SO4 buffer: L170428A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	ND24191-001A	9.57	-	~250 mL	~250 mL		
2)	2A	9.45	-				1/3
3)	2A	9.40	-				2/3
4)	2A	9.41	-				3/3
5)	3A	9.46	-				1/3
6)	3A	9.48	-				2/3
7)	3A	9.44	-				3/3
8)	4A	9.44	-				1/3
9)	4A	9.42	-				2/3
10)	4A	9.45	-				3/3
11)	5A	9.49	-				1/3
12)	5A	9.43	-				2/3
13)	5A	9.41	-				2/3
14)	6A	9.50	-				1/3
15)	6A	9.45	-				2/3
	6A	9.44	-				3/3

Logbook No. 12

rba 5/18/2017

Sample Preparation

Date Prepared: 5/15/17
Time Prepared: 0923 H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-1612280
NH4OH + NH4SO4 eluent: M170524A
NH4OH + NH4SO4 buffer: M170428A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M24191-7A	9.42	–	~250 ml	~250 ml		1|3
2)	7A	9.35	–				2|3
3)	7A	9.34	–				3|3
4)	8A	9.41	–				1|3
5)	8A	9.35	–				2|3
6)	8A	9.35	–				3|3
7)	9A	9.46	–				1|3
8)	9A	9.41	–				2|3
9)	9A	9.40	–				3|3
10)	10A	9.54	–				1|3
11)	10A	9.45	–				2|3
12)	10A	9.39	–				3|3
13)	11A	9.51	–				1|3
14)	11A	9.43	–				2|3
15)	11A	9.43	–				3|3
	12A	9.50	–				1|3

Sample Preparation

Date Prepared: 5/15/17
Time Prepared: 0923 H
Prepared By: MBA

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-1612280
NH4OH + NH4SO4 eluent: M170524A
NH4OH + NH4SO4 buffer: M170428A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	M24191-12A	9.44	–	~20 ml	~20 ml		2|3
2)	12A	9.51	–				3|3
3)	13A	9.56	–				1|3
4)	13A	9.45	–				2|3
5)	13A	9.51	–				3|3
6)	14A	9.49	–				1|3
7)	14A	9.53	–				2|3
8)	14A	9.50	–				3|3
9)							
10)							
11)							
12)							
13)							
14)							
15)							

Logbook No. 12

jrba 5/18/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 4/25/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0537	0.2438	1.2243	2.4380	3.6639	4.8727	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST-170330A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ICV**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2646560**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.087	0.20	5.000	0	102	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2646561**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.235	0.20	0.2000	0	118	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **CCV**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646563**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.915	0.20	5.000	0	98.3	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646564**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.191	0.20	0.2000	0	95.6	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646576**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.931	0.20	10.00	0	99.3	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **CCV**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646588**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.948	0.20	5.000	0	99.0	95	105				

Sample ID **CCV-4**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ZZZZZZ**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646600**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.874	0.20	10.00	0	98.7	95	105				

Sample ID **CCV-5**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **CCV**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646604**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.023	0.20	5.000	0	100	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **ICB**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **4/25/2017**	SeqNo: **2646562**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **CCB**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646565**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **CCB**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646577**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **CCB**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646589**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-4**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115274**
Client ID: **CCB**	Batch ID: **R115274**	TestNo: **EPA 218.6**		Analysis Date: **5/15/2017**	SeqNo: **2646601**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCB-5** SampType: **CCB** TestCode: **218.6_WPGE** Units: **µg/L** Prep Date: RunNo: **115274**
Client ID: **CCB** Batch ID: **R115274** TestNo: **EPA 218.6** Analysis Date: **5/15/2017** SeqNo: **2646605**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/15/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.131	
CCV-4	4.131	
CCV-5	4.131	
Average	4.131	
Actual RT Window	4.051 - 4.211	
Applied RT Window	3.931 - 4.331	
MB-R115274	N.A.	N.A.
LCS-R115274	4.131	PASS
N024191-001A	N.A.	N.A.
N024191-001AMS	4.131	PASS
N024191-001AMSD	4.131	PASS
N024191-002A	N.A.	N.A.
N024191-002AMS	4.123	PASS
N024191-004A	N.A.	N.A.
N024191-004AMS	4.131	PASS
N024191-004ADUP	N.A.	N.A.
N024191-003A	N.A.	N.A.
N024191-003AMS	4.123	PASS
N024191-005A	N.A.	N.A.
N024191-005AMS	4.131	PASS
N024191-006A	N.A.	N.A.
N024191-006AMS	4.123	PASS
N024191-007A	N.A.	N.A.
N024191-007AMS	4.123	PASS
N024191-008A	N.A.	N.A.
N024191-008AMS	4.123	PASS
N024191-009A	N.A.	N.A.
N024191-009AMS	4.131	PASS
N024191-010A	N.A.	N.A.
N024191-010AMS	4.131	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 5/15/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.131	
CCV-2	4.131	
CCV-3	4.131	
CCV-4	4.131	
CCV-5	4.131	
Average	4.131	
Actual RT Window	4.051 - 4.211	
Applied RT Window	3.931 - 4.331	
N024191-011A	N.A.	N.A.
N024191-011AMS	4.131	PASS
N024191-012A	N.A.	N.A.
N024191-012AMS	4.123	PASS
N024191-013A	N.A.	N.A.
N024191-013AMS	4.123	PASS
N024191-014A	N.A.	N.A.
N024191-014AMS	4.131	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6/EPA 7199 Unit: ug/L
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Instrument Name: **IC-06** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria



Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	ICV	ICV	1	Hexavalent Chromium	04/25/17 10:59 AM	Reported
13	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	04/25/17 11:10 AM	Reported
14	ICB	ICB	1	Hexavalent Chromium	04/25/17 11:19 AM	Reported
15	MB-R114885	MBLK	1	Hexavalent Chromium	04/25/17 11:29 AM	Reported
16	LCS-R114885	LCS	1	Hexavalent Chromium	04/25/17 11:38 AM	Reported
17	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 11:48 AM	Reported
18	N023952-003A	SAMP	1	Hexavalent Chromium	04/25/17 11:57 AM	Reported
19	N023952-004A	SAMP	5	Hexavalent Chromium	04/25/17 12:07 PM	Reported
20	N023952-005A	SAMP	1	Hexavalent Chromium	04/25/17 12:16 PM	Reported
21	N023952-006A	SAMP	1	Hexavalent Chromium	04/25/17 12:26 PM	Reported
22	N023952-007A	SAMP	1	Hexavalent Chromium	04/25/17 12:35 PM	Reported
23	N023952-008A	SAMP	20	Hexavalent Chromium	04/25/17 12:45 PM	Reported
24	N023952-009A	SAMP	100	Hexavalent Chromium	04/25/17 12:54 PM	Reported
25	CCV-1	CCV1	1	Hexavalent Chromium	04/25/17 1:03 PM	Reported
26	CCB-1	CCB	1	Hexavalent Chromium	04/25/17 1:13 PM	Reported
27	N023952-010A	SAMP	100	Hexavalent Chromium	04/25/17 1:22 PM	Reported
28	N023966-001A	SAMP	1	Hexavalent Chromium	04/25/17 1:32 PM	Reported
29	N023966-002A	SAMP	1	Hexavalent Chromium	04/25/17 1:41 PM	Reported
30	N023966-003A	SAMP	1	Hexavalent Chromium	04/25/17 1:51 PM	Reported
31	N023966-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:00 PM	Reported
32	N023953-001A	SAMP	20	Hexavalent Chromium	04/25/17 2:10 PM	Reported
33	N023953-002A	SAMP	1	Hexavalent Chromium	04/25/17 2:19 PM	Reported
34	N023953-003A	SAMP	1	Hexavalent Chromium	04/25/17 2:29 PM	Reported
35	N023953-004A	SAMP	1	Hexavalent Chromium	04/25/17 2:38 PM	Reported
36	N023953-005A	SAMP	1	Hexavalent Chromium	04/25/17 2:48 PM	Reported
37	CCV-2	CCV	1	Hexavalent Chromium	04/25/17 2:57 PM	Reported
38	CCB-2	CCB	1	Hexavalent Chromium	04/25/17 3:06 PM	Reported
39	N023953-006A	SAMP	1	Hexavalent Chromium	04/25/17 3:16 PM	Reported
40	N023952-001A	SAMP	1	Hexavalent Chromium	04/25/17 3:25 PM	Reported
41	N023952-003ADUP	DUP	1	Hexavalent Chromium	04/25/17 3:35 PM	Reported
42	N023952-004AMS	MS	5	Hexavalent Chromium	04/25/17 3:44 PM	Reported

rba 4/30/2017

5/5/2017

IC-07 RBA 4/27/2017 12:48 PM

INJECTION LOG: 170425A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N023952-004AMSD	MSD	5	Hexavalent Chromium	04/25/17 3:54 PM	Reported
44	N023952-007A	SAMP	20	Hexavalent Chromium	04/25/17 4:03 PM	Reported
45	N023952-007AMS	MS	20	Hexavalent Chromium	04/25/17 4:13 PM	Reported
46	CCV-3	CCV1	1	Hexavalent Chromium	04/25/17 4:30 PM	Reported
47	CCB-3	CCB	1	Hexavalent Chromium	04/25/17 4:41 PM	Reported
48	LCS-R114727	LCS	1	Hexavalent Chromium	04/25/17 4:50 PM	Not Reported
49	MB-R114727	MBLK	1	Hexavalent Chromium	04/25/17 5:00 PM	Not Reported
50	N023872-002A	SAMP	1	Hexavalent Chromium	04/25/17 5:09 PM	Not Reported
51	N023872-002AMS	MS	1	Hexavalent Chromium	04/25/17 5:18 PM	Not Reported
52	N023898-009A	SAMP	1	Hexavalent Chromium	04/25/17 5:28 PM	Not Reported
53	N023898-009ADUP	DUP	1	Hexavalent Chromium	04/25/17 5:37 PM	Not Reported
54	N023898-009AMS	MS	1	Hexavalent Chromium	04/25/17 5:47 PM	Not Reported
55	N023898-009AMSD	MD	1	Hexavalent Chromium	04/25/17 5:56 PM	Not Reported
56	N023899-005A	SAMP	1	Hexavalent Chromium	04/25/17 6:06 PM	Not Reported
57	N023899-005AMS	MS	1	Hexavalent Chromium	04/25/17 6:15 PM	Not Reported
58	CCV-4	CCV	1	Hexavalent Chromium	04/25/17 6:25 PM	Not Reported
59	CCB-4	CCB	1	Hexavalent Chromium	04/25/17 6:34 PM	Not Reported
60	N023899-011A	SAMP	1	Hexavalent Chromium	04/25/17 6:44 PM	Not Reported
61	N023899-011AMS	MS	1	Hexavalent Chromium	04/25/17 6:53 PM	Not Reported
62	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:03 PM	Not Reported
63	N023912-005AMS	MS	1	Hexavalent Chromium	04/25/17 7:12 PM	Not Reported
64	CCV-5	CCV1	1	Hexavalent Chromium	04/25/17 7:21 PM	Not Reported
65	CCB-5	CCB	1	Hexavalent Chromium	04/25/17 7:31 PM	Not Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170425A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal**	*Updated On:*	**25/Apr/17 20:01:46**
No. of Injections:	**68**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	ICV,ICV,1,	14	1000	Unknown		04/25/2017 10:59	Finished	ICV @5ppb, IWST-170330B
13	PQL@0.2ppb,CCV2,1	15	1000	Unknown		04/25/2017 11:10	Finished	PQL @ 0.2ppb
14	ICB,ICB,1,	16	1000	Unknown		04/25/2017 11:19	Finished	ICB R170412B
15	MB-H2O,MBLK,1	17	1000	Unknown		04/25/2017 11:29	Finished	MB R170412B
16	LCS-H2O,LCS,1	18	1000	Unknown		04/25/2017 11:38	Finished	LCS, IWST-170330B
17	N023952-001A,SAMF	19	1000	Unknown		04/25/2017 11:48	Finished	SAMP, 10mL
18	N023952-003A,SAMF	20	1000	Unknown		04/25/2017 11:57	Finished	SAMP, 10mL
19	N023952-004A,SAMF	21	1000	Unknown		04/25/2017 12:07	Finished	SAMP, 2>10mL
20	N023952-005A,SAMF	22	1000	Unknown		04/25/2017 12:16	Finished	SAMP, 10mL
21	N023952-006A,SAMF	23	1000	Unknown		04/25/2017 12:26	Finished	SAMP, 10mL
22	N023952-007A,SAMF	24	1000	Unknown		04/25/2017 12:35	Finished	SAMP, 10mL
23	N023952-008A,SAMF	25	1000	Unknown		04/25/2017 12:45	Finished	SAMP,0.5> 10mL
24	N023952-009A,SAMF	26	1000	Unknown		04/25/2017 12:54	Finished	SAMP, 0.1>10mL
25	CCV-2,CCV1,1,	27	1000	Unknown		04/25/2017 13:03	Finished	CCV @10ppb, IWST-170330A
26	CCB-2,CCB,1,	28	1000	Unknown		04/25/2017 13:13	Finished	CCB R170414A
27	N023952-010A,SAMF	29	1000	Unknown		04/25/2017 13:22	Finished	SAMP, 0.1>10mL
28	N023966-001A,SAMF	30	1000	Unknown		04/25/2017 13:32	Finished	SAMP, 10mL
29	N023966-002A,SAMF	31	1000	Unknown		04/25/2017 13:41	Finished	SAMP, 10mL
30	N023966-003A,SAMF	32	1000	Unknown		04/25/2017 13:51	Finished	SAMP, 10mL
31	N023966-004A,SAMF	33	1000	Unknown		04/25/2017 14:00	Finished	SAMP, 10mL
32	N023953-001A,SAMF	34	1000	Unknown		04/25/2017 14:10	Finished	SAMP, 0.5>10mL
33	N023953-002A,SAMF	35	1000	Unknown		04/25/2017 14:19	Finished	SAMP, 10mL
34	N023953-003A,SAMF	36	1000	Unknown		04/25/2017 14:29	Finished	SAMP, 10mL
35	N023953-004A,SAMF	37	1000	Unknown		04/25/2017 14:38	Finished	SAMP, 10mL
36	N023953-005A,SAMF	38	1000	Unknown		04/25/2017 14:48	Finished	SAMP, 10mL
37	CCV-3,CCV,1,	39	1000	Unknown		04/25/2017 14:57	Finished	CCV @5ppb, IWST-170330B
38	CCB-3,CCB,1,	40	1000	Unknown		04/25/2017 15:06	Finished	CCB R170412B
39	N023953-006A,SAMF	41	1000	Unknown		04/25/2017 15:16	Finished	SAMP, 10mL
40	N023952-001A,SAMF	42	1000	Unknown		04/25/2017 15:25	Finished	SAMP, 10mL
41	N023952-003ADUP,D	43	1000	Unknown		04/25/2017 15:35	Finished	DUP, 10mL
42	N023952-004AMS,MS	44	1000	Unknown		04/25/2017 15:44	Finished	MS (5ppb), IWST-170330B,2>1
43	N023952-004AMSD,M	45	1000	Unknown		04/25/2017 15:54	Finished	MSD (5ppb), IWST-170330B,2>
44	N023952-007A,SAMF	46	1000	Unknown		04/25/2017 16:03	Finished	SAMP,0.5> 10mL
45	N023952-007AMS,MS	47	1000	Unknown		04/25/2017 16:13	Finished	MS (5ppb), IWST-170330B,0.5
46	CCV-4,CCV1,1,	1	1000	Unknown		04/25/2017 16:30	Finished	CCV @10ppb, IWST-170330B
47	CCB-4,CCB,1,	2	1000	Unknown		04/25/2017 16:41	Finished	CCB R170412B
48	LCS-2,LCS,1	3	1000	Unknown		04/25/2017 16:50	Finished	MS (5ppb), IWST-170330B,10
49	MB-2,MBLK,1	4	1000	Unknown		04/25/2017 17:00	Finished	SAMP, 10mL
50	N023872-002A,SAMF	5	1000	Unknown		04/25/2017 17:09	Finished	SAMP, 10mL
51	N023872-002AMS,MS	6	1000	Unknown		04/25/2017 17:18	Finished	MS (1ppb), IWST-170330B,10
52	N023898-009A,SAMF	7	1000	Unknown		04/25/2017 17:28	Finished	SAMP, 10mL
53	N023898-009ADUP,D	8	1000	Unknown		04/25/2017 17:37	Finished	DUP, 10mL
54	N023898-009AMS,MS	9	1000	Unknown		04/25/2017 17:47	Finished	MS (5ppb), IWST-170330B,10
55	N023898-009AMSD,M	10	1000	Unknown		04/25/2017 17:56	Finished	MSD (5ppb), IWST-170330B,1
56	N023899-005A,SAMF	11	1000	Unknown		04/25/2017 18:06	Finished	SAMP, 10mL
57	N023899-005AMS,MS	12	1000	Unknown		04/25/2017 18:15	Finished	MS (1ppb), IWST-170330B,10
58	CCV-5,CCV,1,	13	1000	Unknown		04/25/2017 18:25	Finished	CCV @5ppb, IWST-170330B
59	CCB-5,CCB,1,	14	1000	Unknown		04/25/2017 18:34	Finished	CCB R170414A
60	N023899-011A,SAMF	15	1000	Unknown		04/25/2017 18:44	Finished	SAMP, 10mL

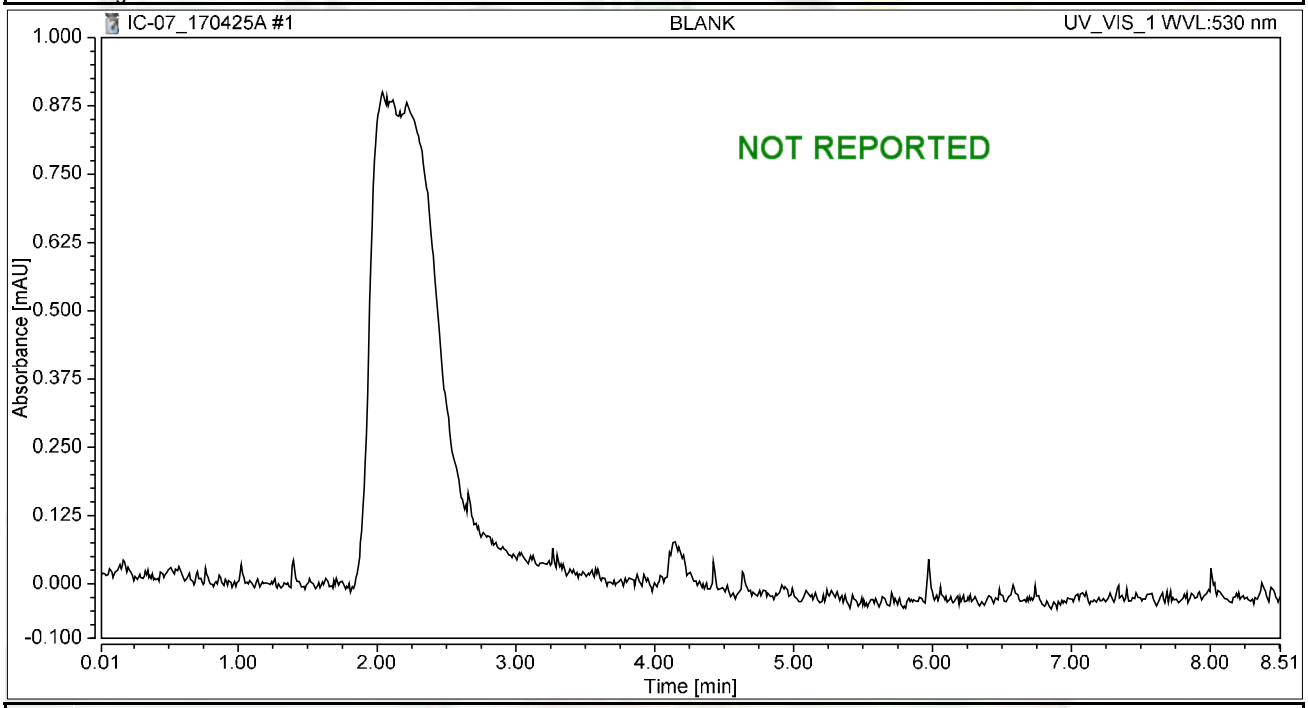
61	N023899-011AMS,MS	16	1000	Unknown		04/25/2017 18:53	Finished	MS (5ppb), IWST-170330B,10
62	N023912-005AMS,MS	17	1000	Unknown		04/25/2017 19:03	Finished	SAMP, 10mL
63	N023912-005AMS,MS	18	1000	Unknown		04/25/2017 19:12	Finished	MS (5ppb), IWST-170330B,10
64	CCV-6,CCV1,1,	19	1000	Unknown		04/25/2017 19:21	Finished	CCV @10ppb, IWST-170330B
65	CCB-6,CCB,1,	20	1000	Unknown		04/25/2017 19:31	Finished	CCB R170414A
66	SHUTDOWN	21	1000	Unknown		04/25/2017 19:40	Finished	
67	Eluent: R170422B	22	1000	Unknown		n.a.	Finished	Eluent
68	PCR: R170425A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

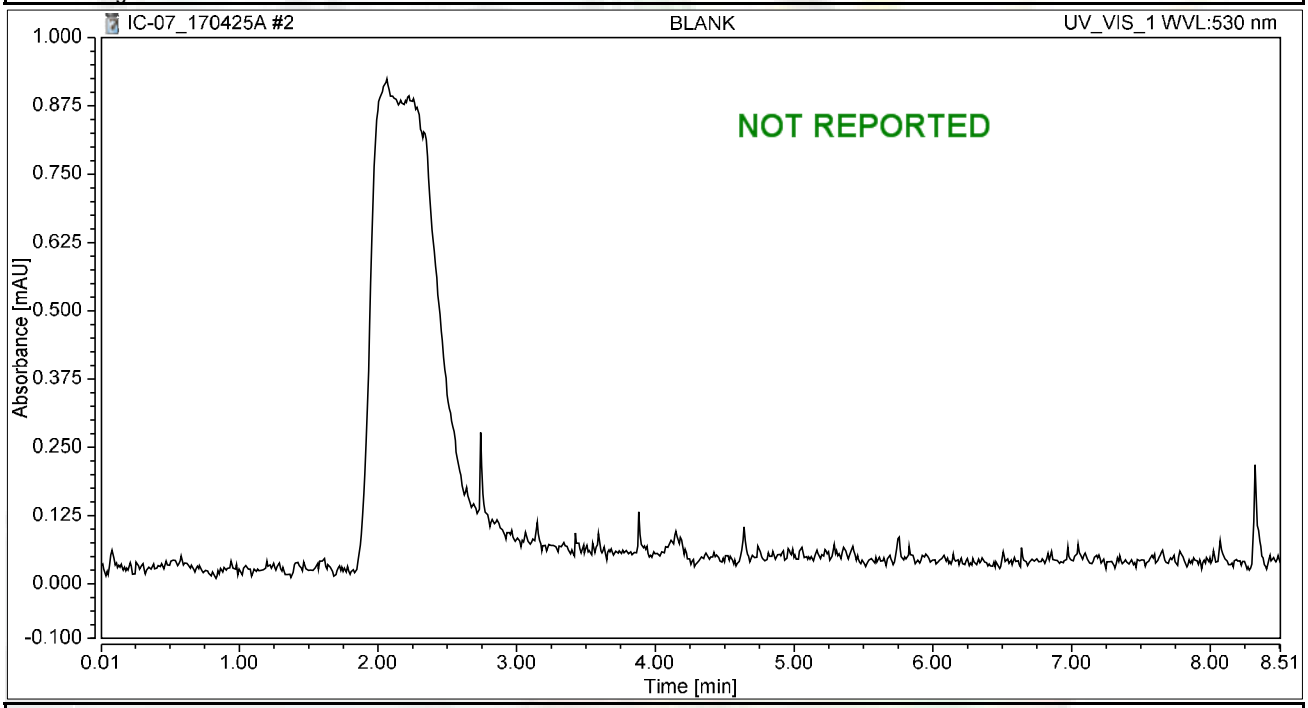
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

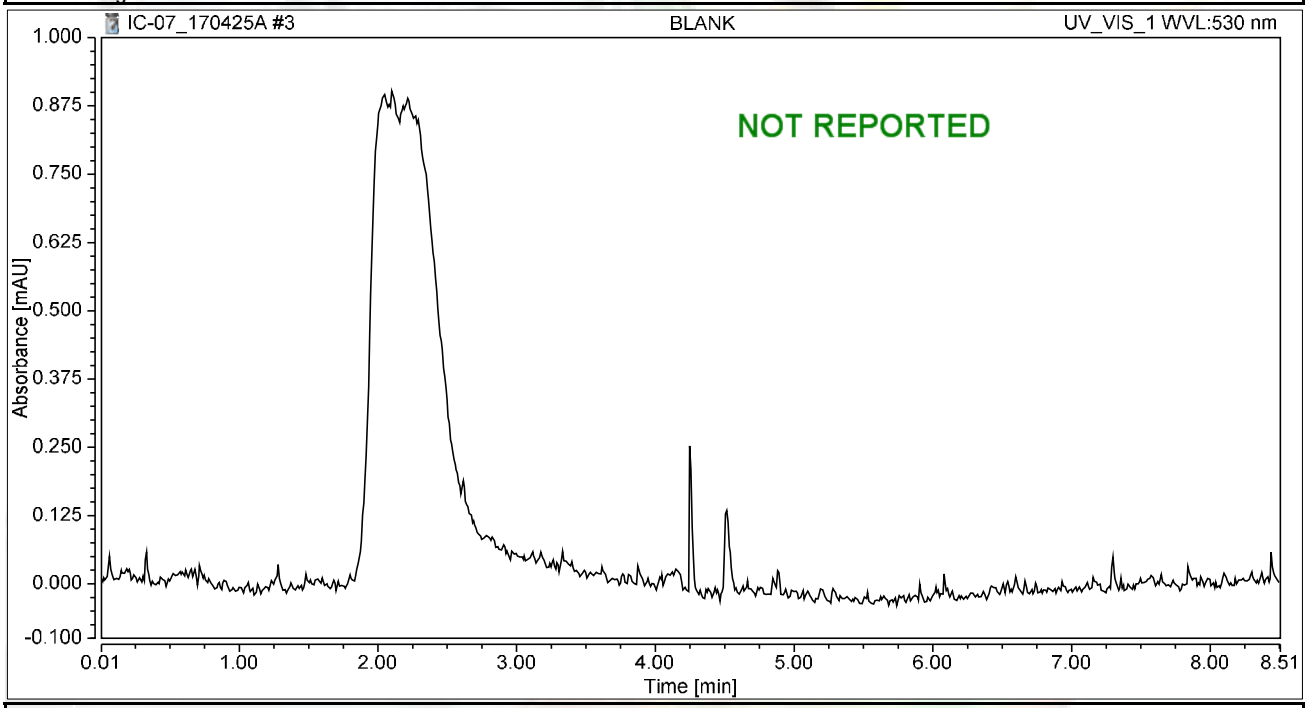
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

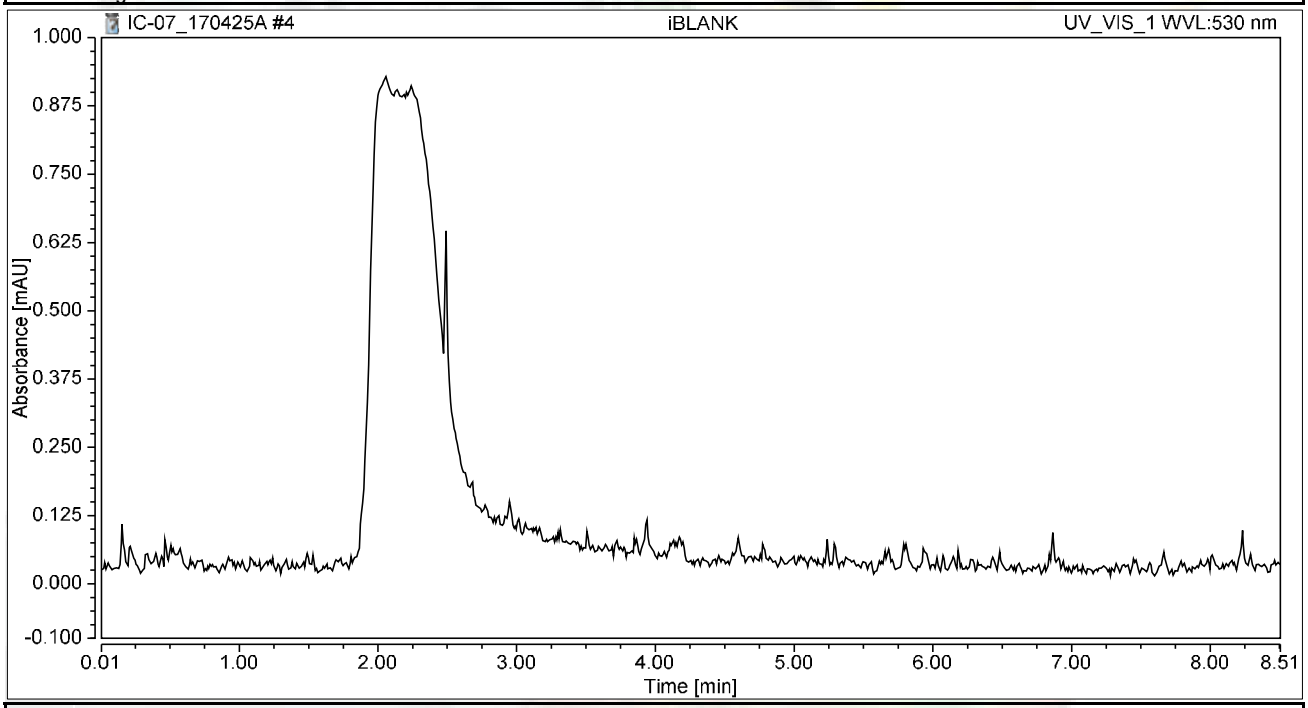
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

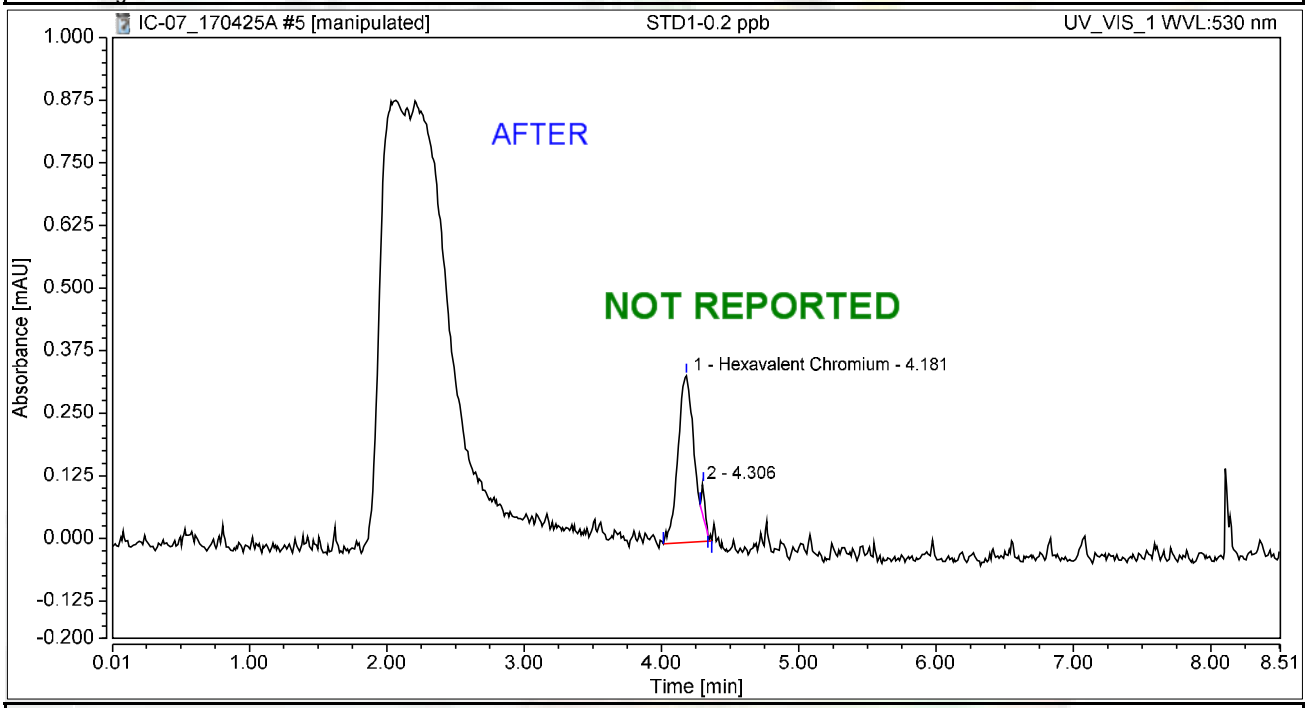
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.046	0.333	96.32	83.12	0.1906
2		4.306	0.002	0.068	3.68	16.88	n.a.
Total:			**0.048**	**0.401**	**100.00**	**100.00**	

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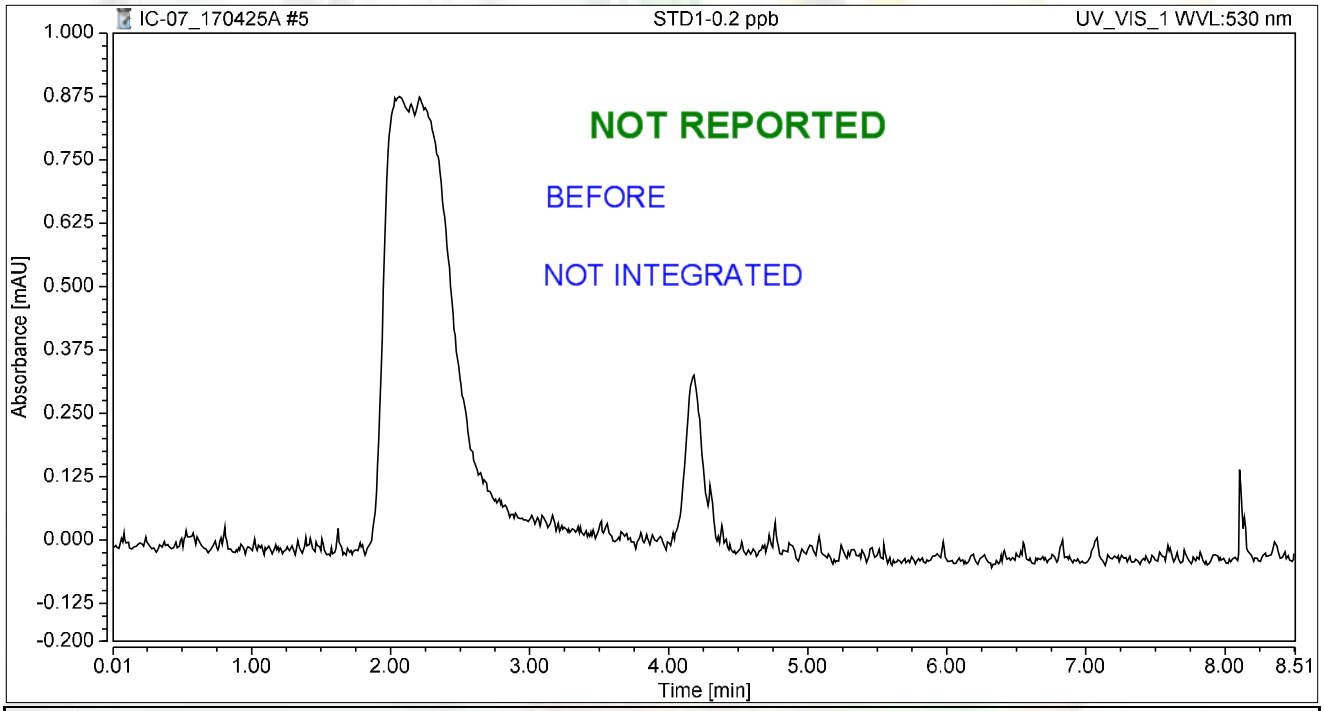
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

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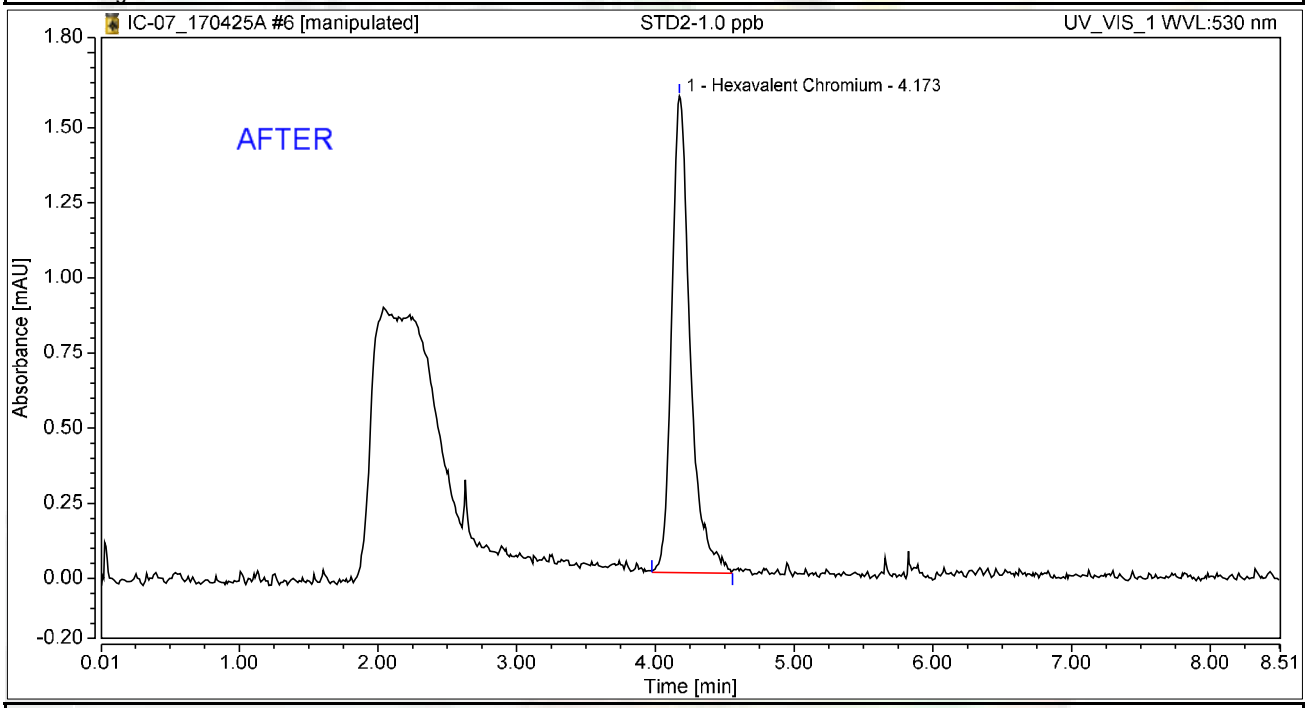
Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.244	1.585	100.00	100.00	0.9996
Total:			**0.244**	**1.585**	**100.00**	**100.00**	

rba 4/30/2017

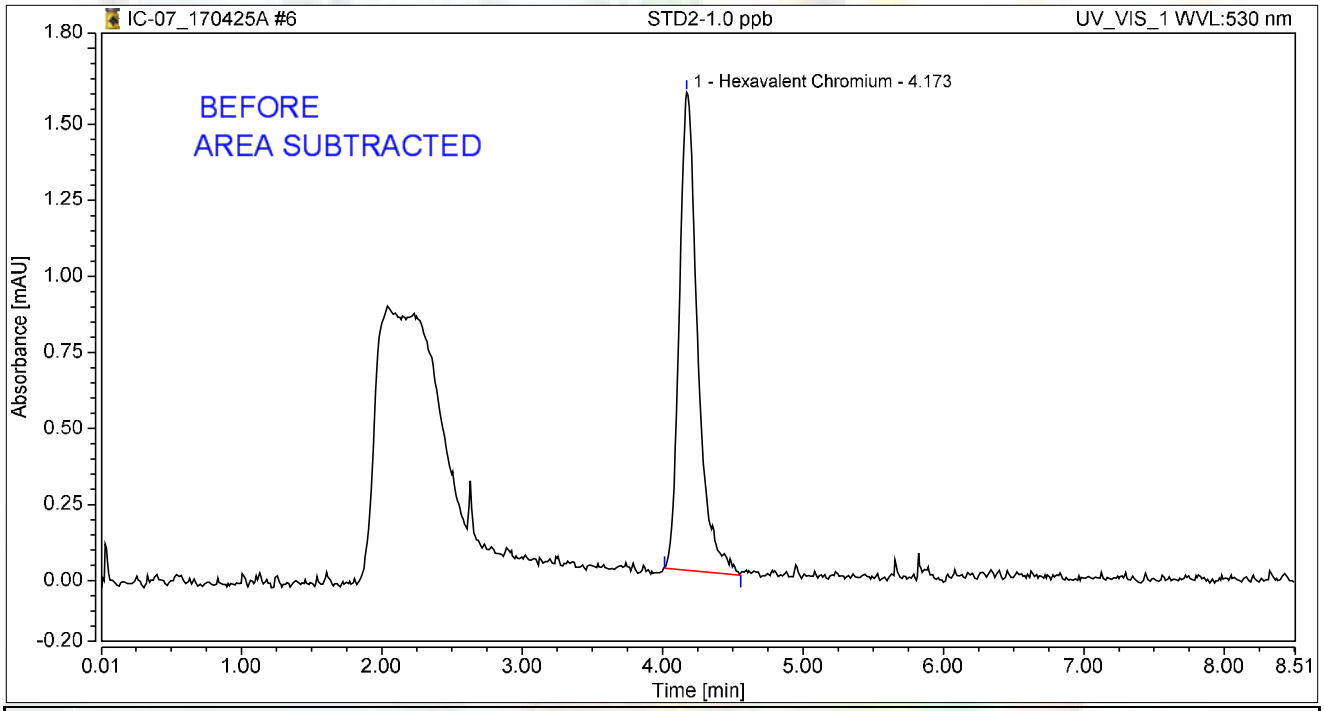
Reviewed by: Nancy 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 09:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	0.238	1.572	100.00	100.00	0.9911
Total:			**0.238**	**1.572**	**100.00**	**100.00**	

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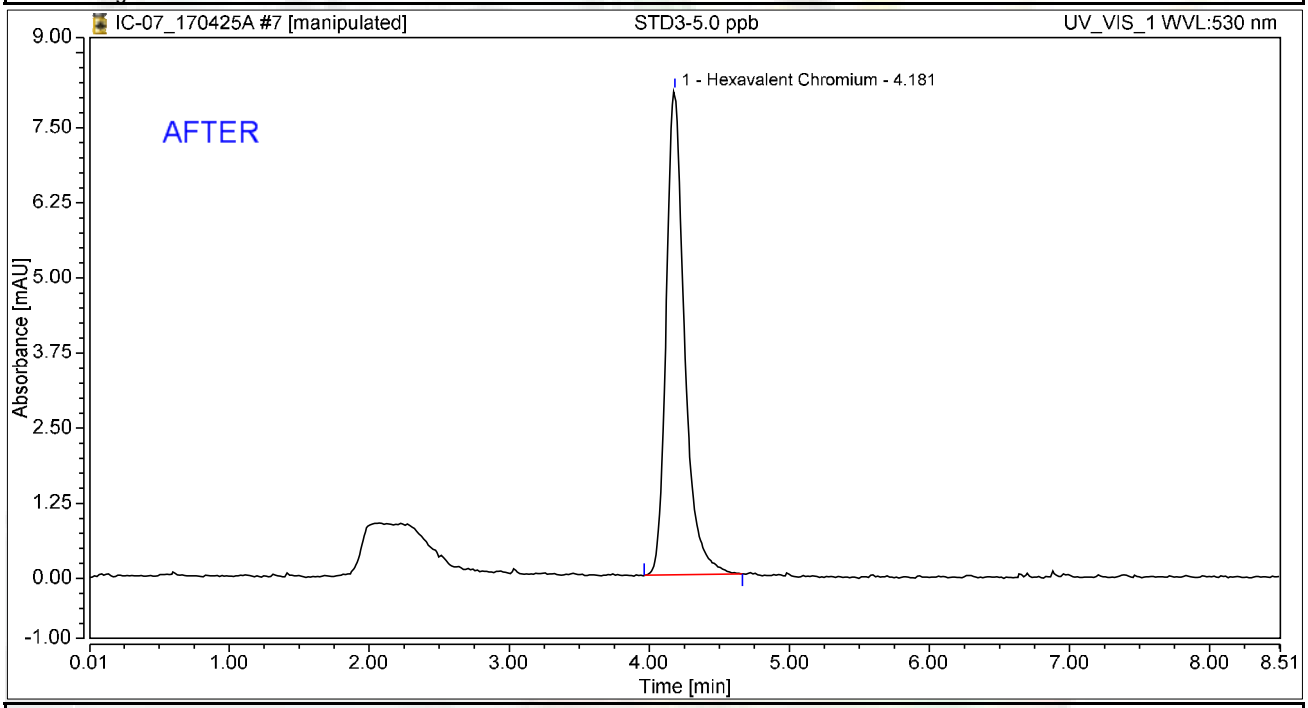
Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.224	8.059	100.00	100.00	5.0198
Total:			**1.224**	**8.059**	**100.00**	**100.00**	

rba 4/30/2017

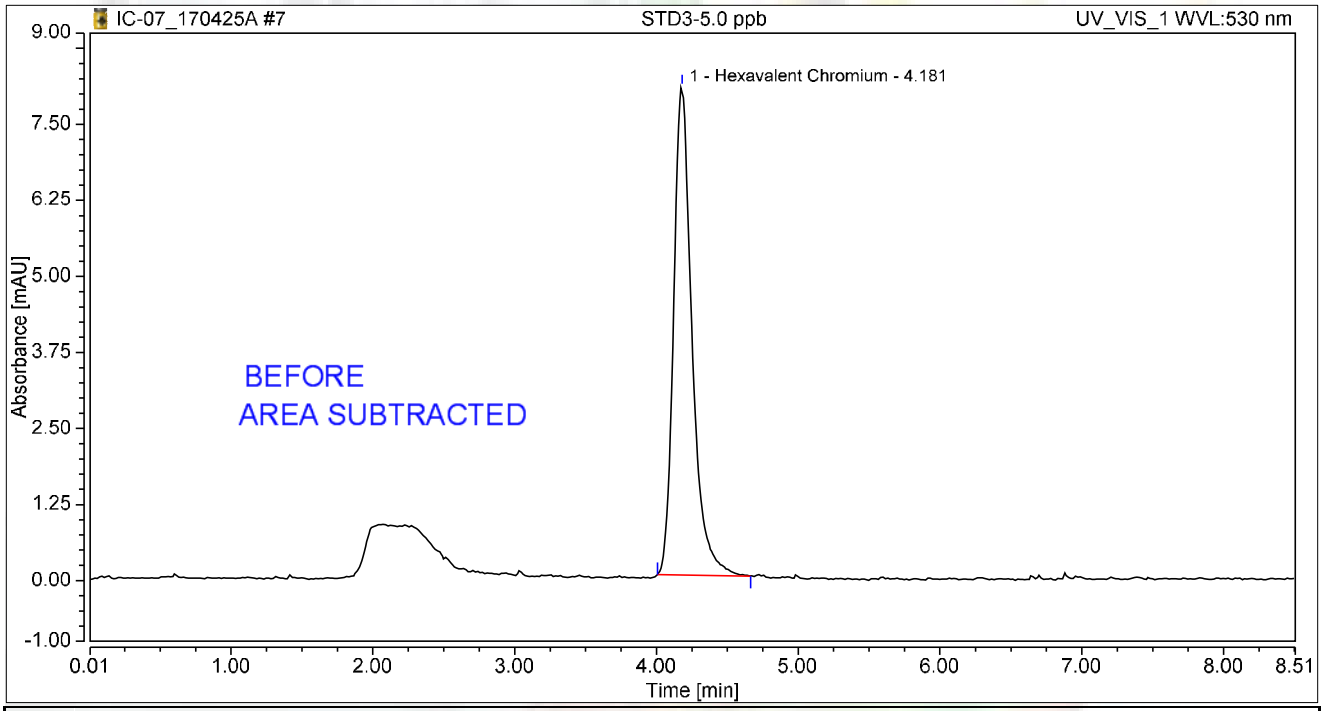
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	1.209	8.027	100.00	100.00	5.0326
Total:			**1.209**	**8.027**	**100.00**	**100.00**	

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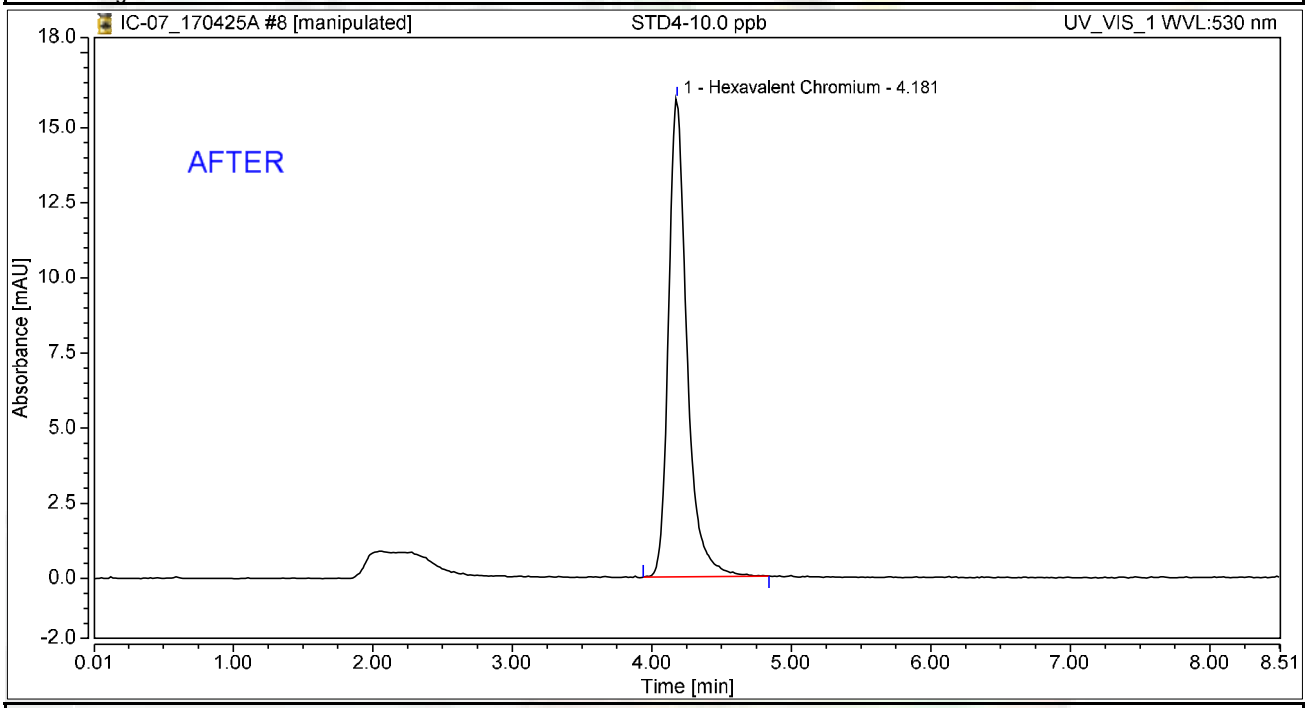
Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.438	15.921	100.00	100.00	9.9965
Total:			**2.438**	**15.921**	**100.00**	**100.00**	

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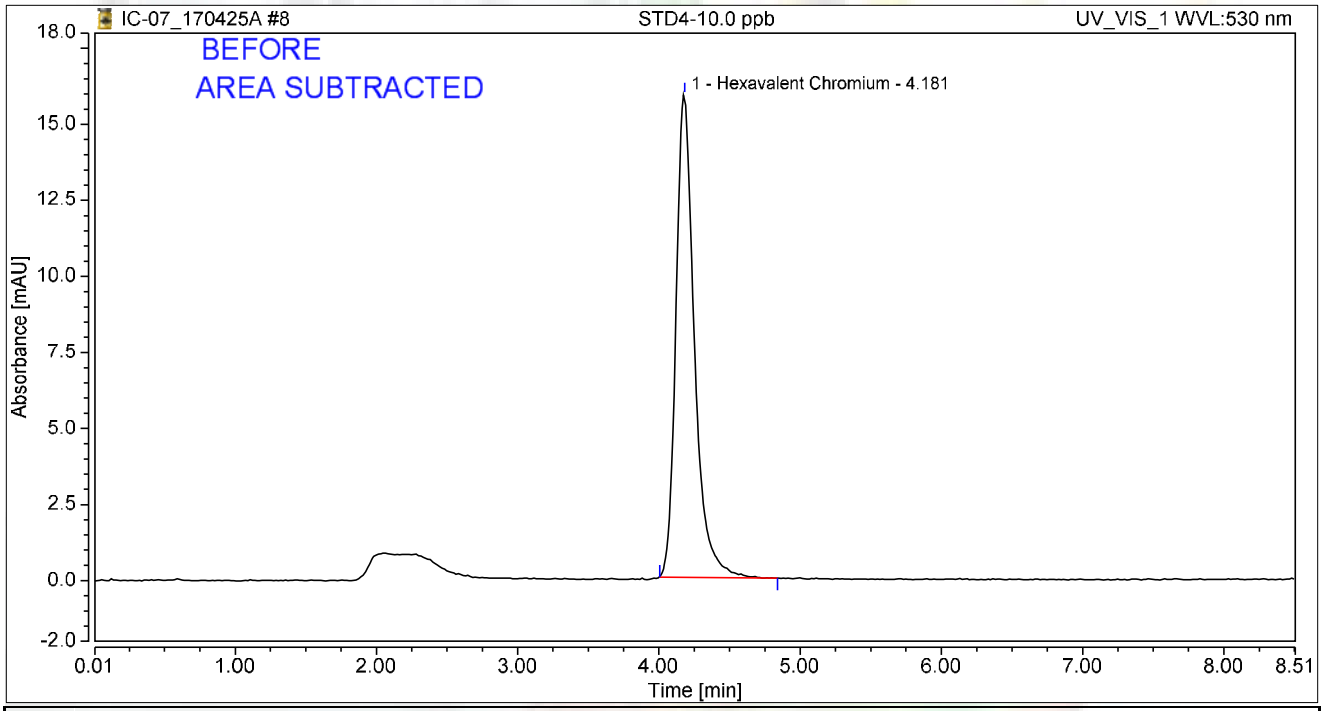
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:15**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	2.407	15.865	100.00	100.00	10.0165
Total:			**2.407**	**15.865**	**100.00**	**100.00**	

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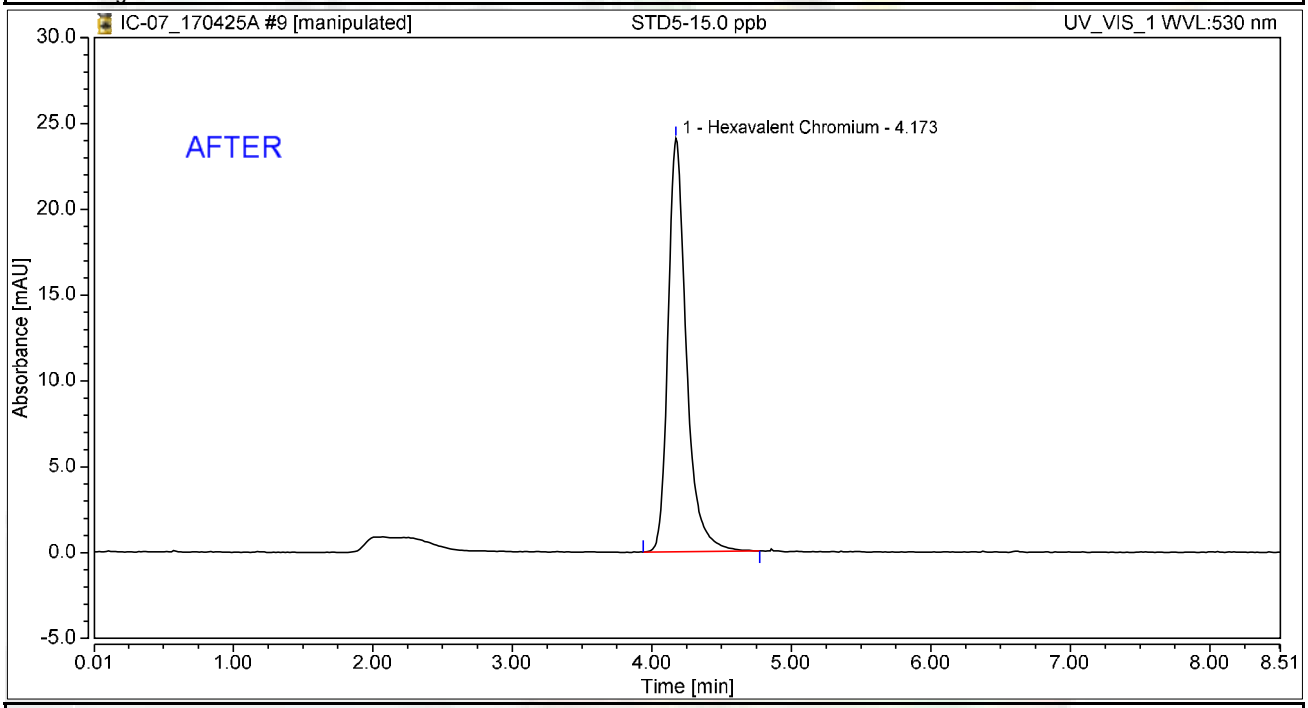
Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.664	24.088	100.00	100.00	15.0230
Total:			**3.664**	**24.088**	**100.00**	**100.00**	

rba 4/30/2017

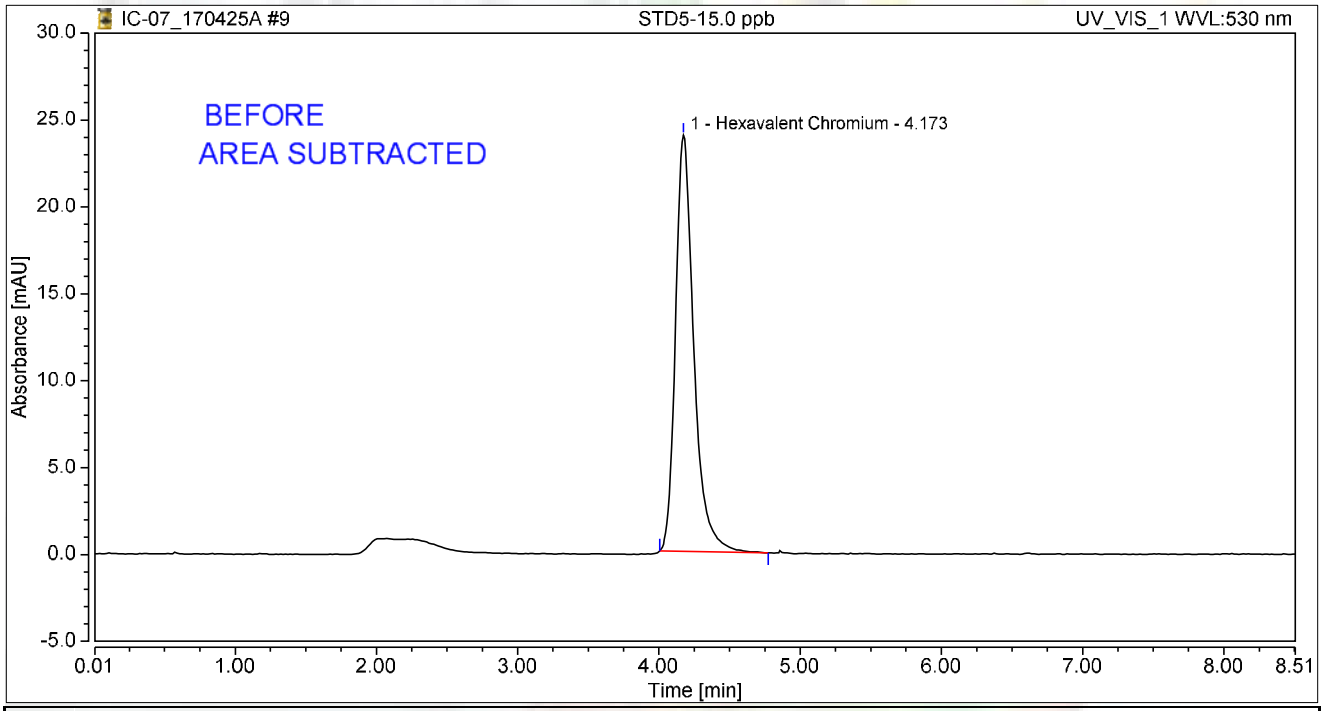
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	3.597	23.956	100.00	100.00	14.9652
Total:			**3.597**	**23.956**	**100.00**	**100.00**	

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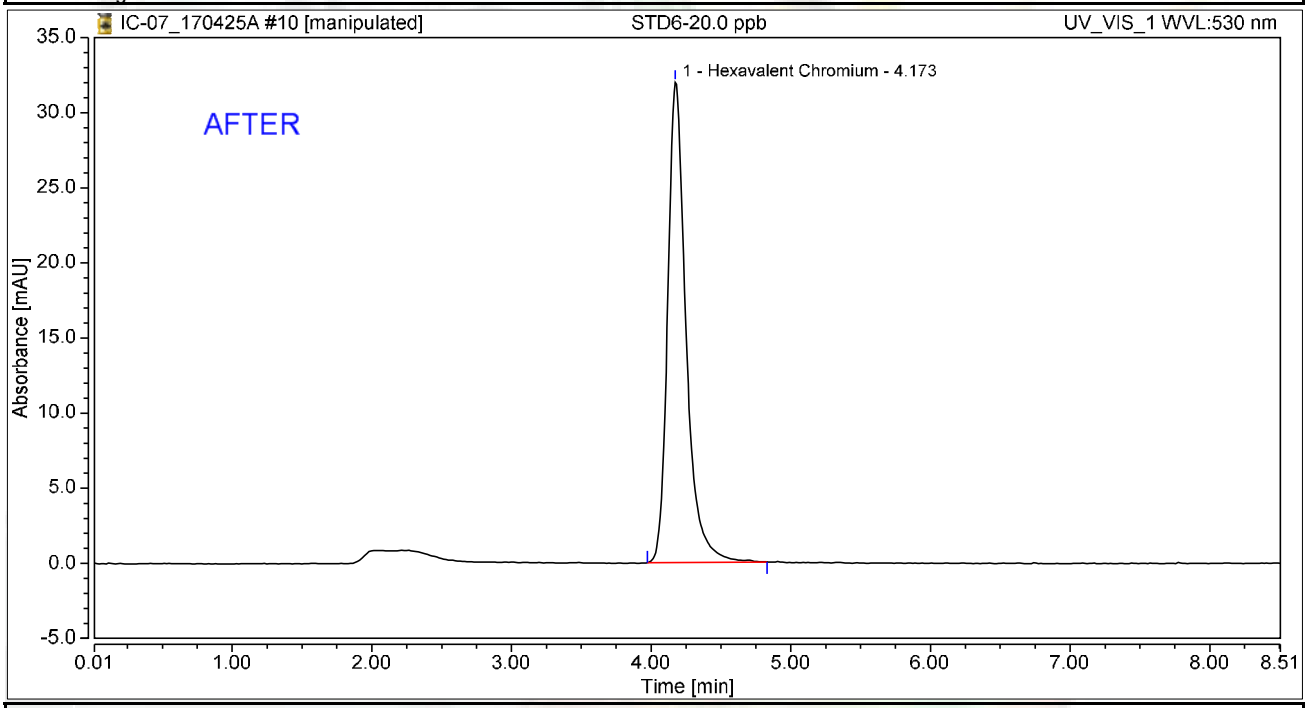
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.873	31.978	100.00	100.00	19.9794
Total:			**4.873**	**31.978**	**100.00**	**100.00**	

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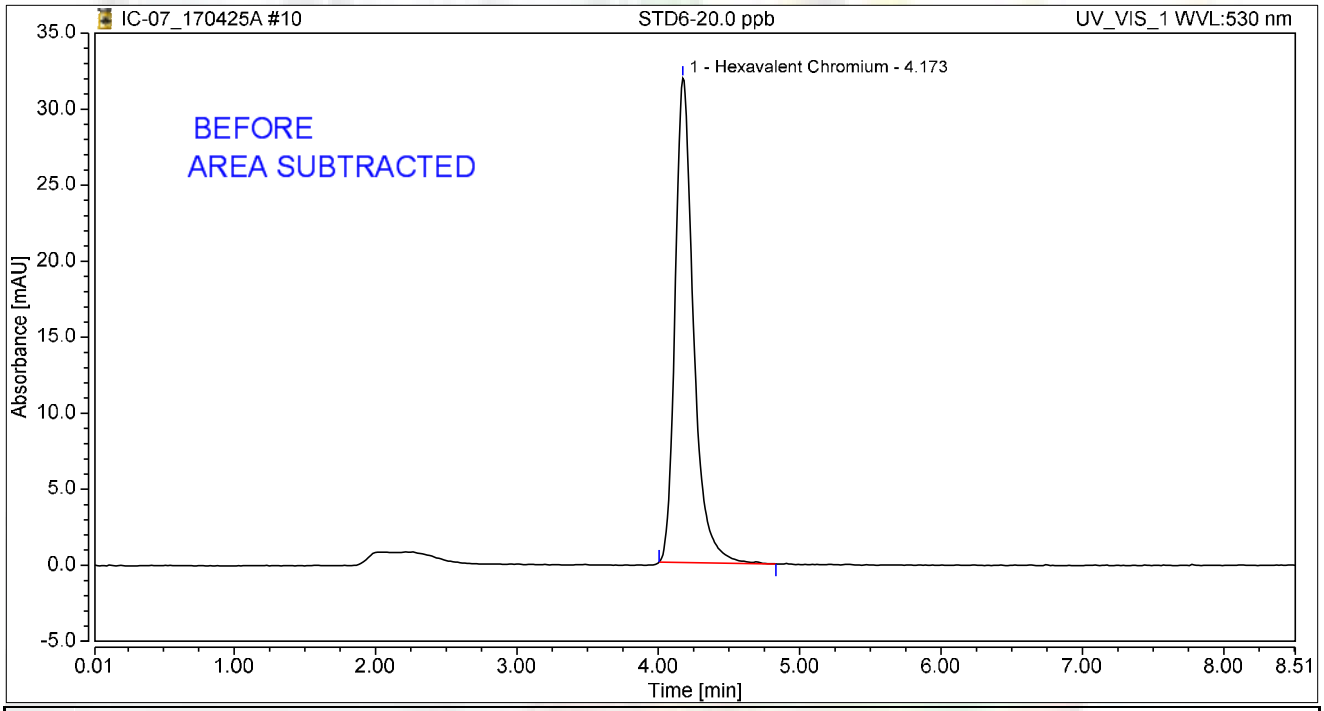
Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	4.809	31.858	100.00	100.00	20.0099
Total:			**4.809**	**31.858**	**100.00**	**100.00**	

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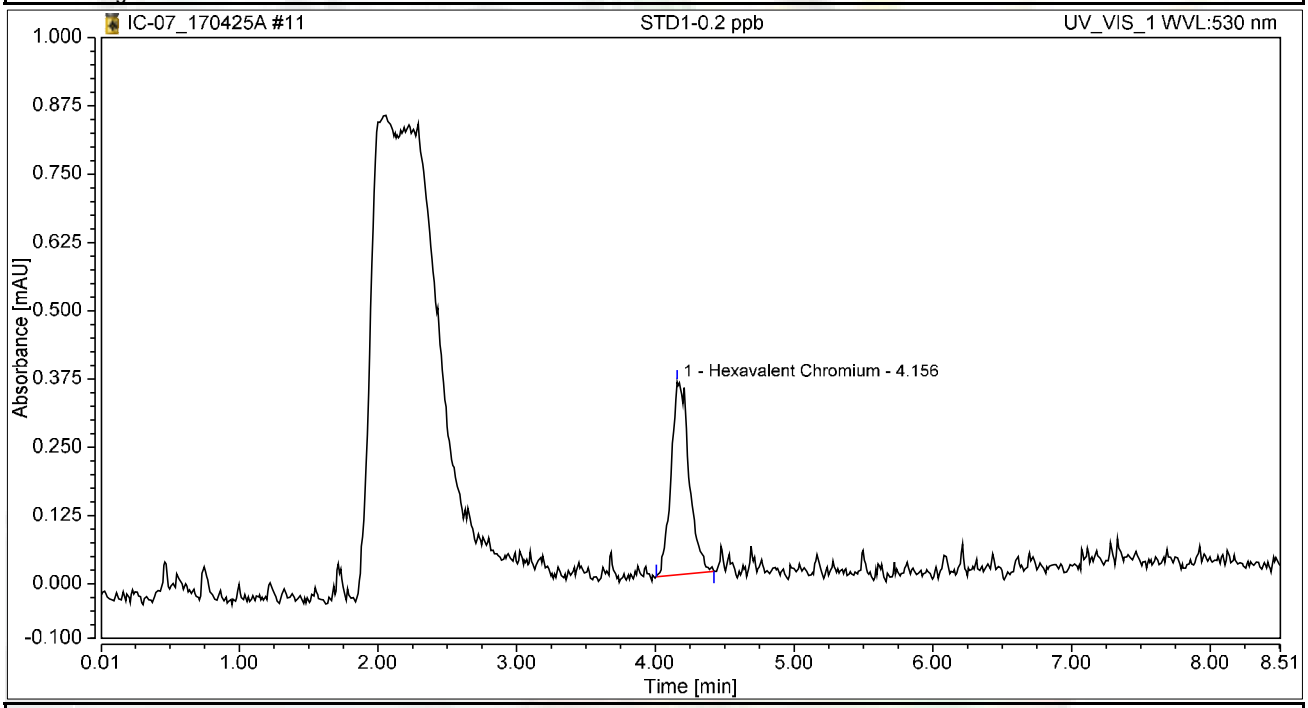
Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:44**	*Sample Weight:*	**1.0000**

Chromatogram



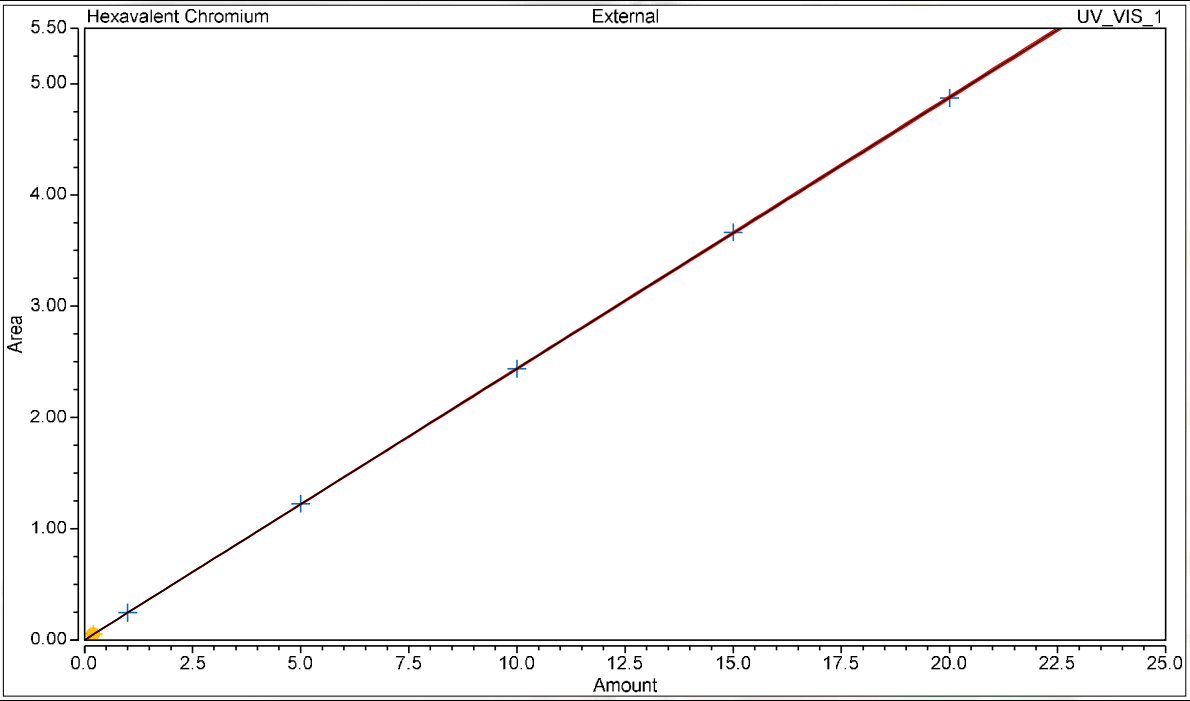
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.156	0.054	0.353	100.00	100.00	0.2201
Total:			**0.054**	**0.353**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2439
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99999

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

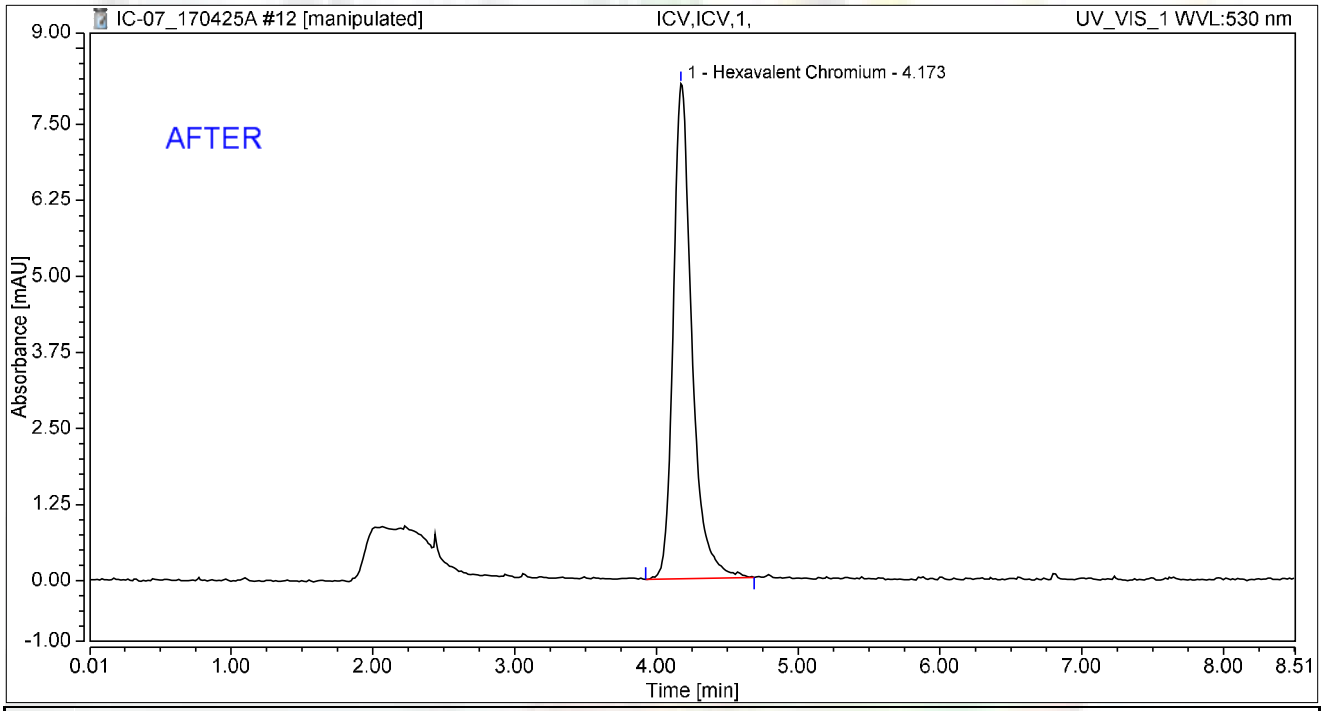
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
6	STD2-1.0 ppb	02	1.0000	0.2438	0.244	1.585
7	STD3-5.0 ppb	03	5.0000	1.2243	1.224	8.059
8	STD4-10.0 ppb	04	10.0000	2.4380	2.438	15.921
9	STD5-15.0 ppb	05	15.0000	3.6639	3.664	24.088
10	STD6-20.0 ppb	06	20.0000	4.8727	4.873	31.978
11	STD1-0.2 ppb	01	0.2000	0.0537	0.054	0.353

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.241	8.139	100.00	100.00	5.0868
Total:			**1.241**	**8.139**	**100.00**	**100.00**	

rba 4/30/2017

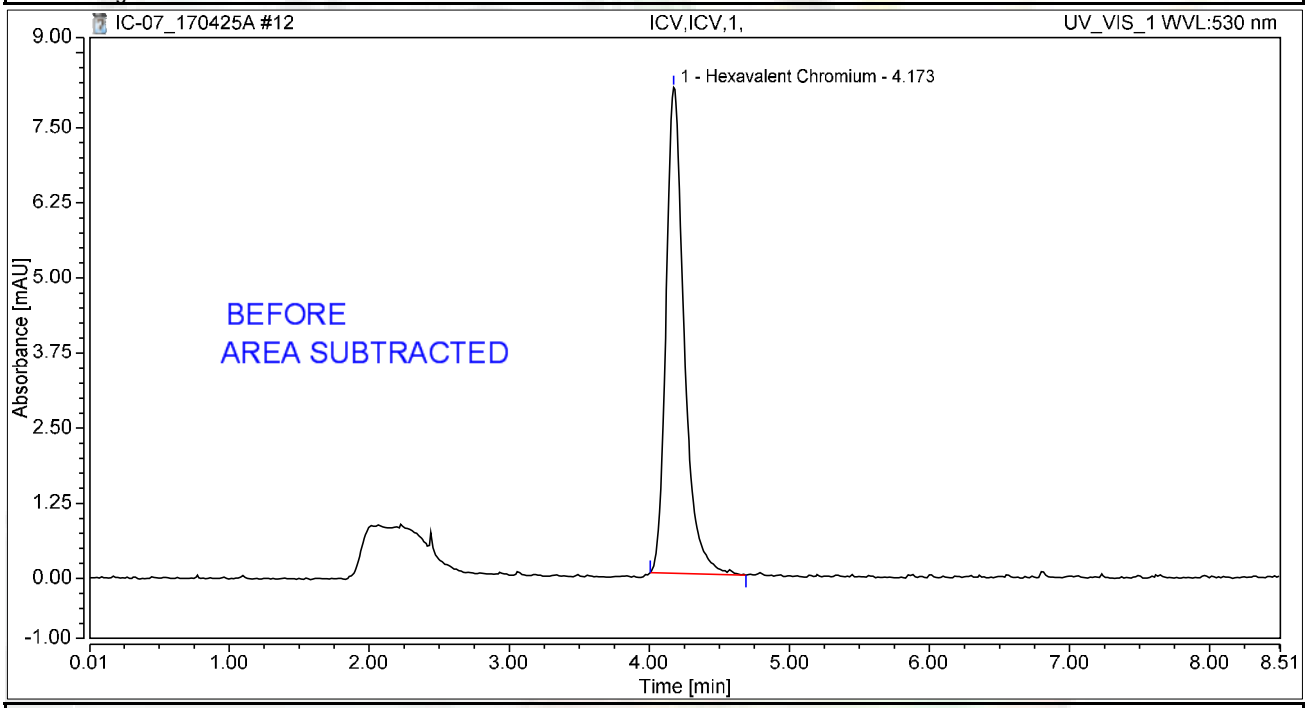
Reviewed by: Nancy 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 10:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.173	1.212	8.081	100.00	100.00	4.9703
Total:			**1.212**	**8.081**	**100.00**	**100.00**	

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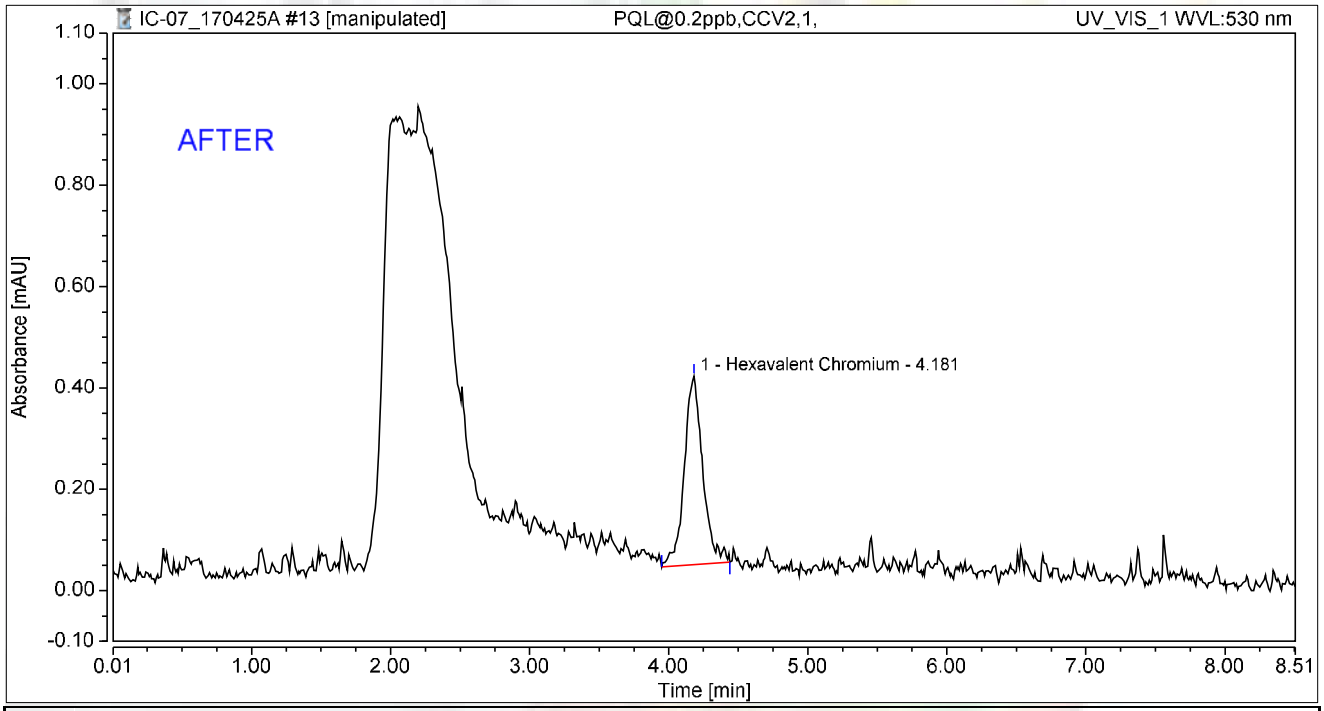
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.057	0.372	100.00	100.00	0.2353
Total:			**0.057**	**0.372**	**100.00**	**100.00**	

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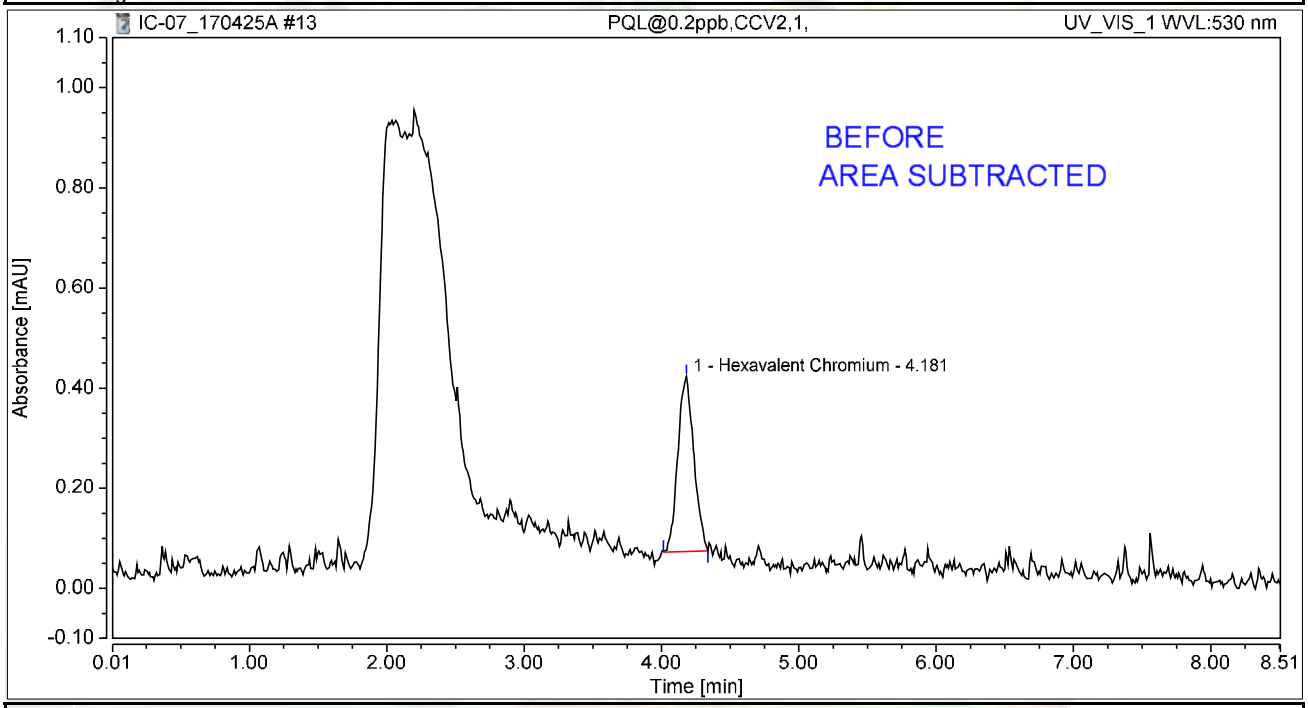
Reviewed by: 5/5/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:10**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.181	0.047	0.349	100.00	100.00	0.1927
Total:			**0.047**	**0.349**	**100.00**	**100.00**	

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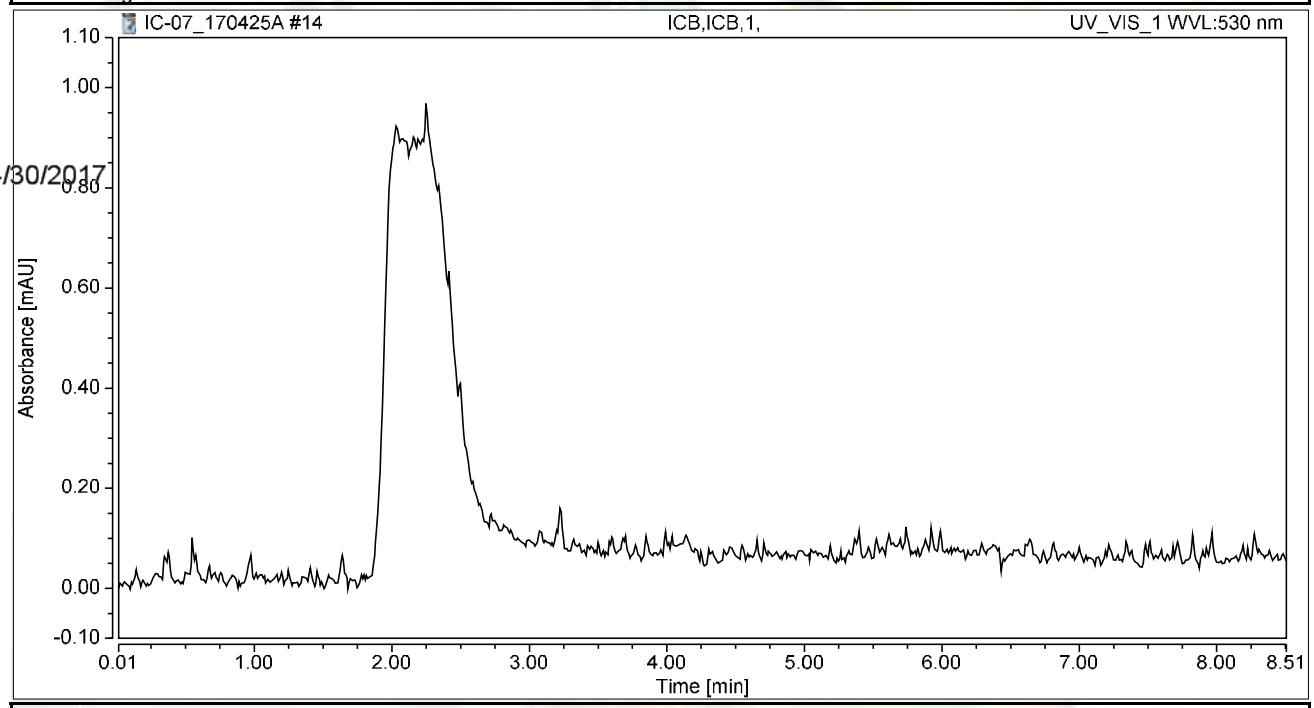
Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**25/Apr/17 11:19**	*Sample Weight:*	**1.0000**

Chromatogram



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Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170515A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:07 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:18 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	04/25/17 9:27 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	04/25/17 9:37 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:46 AM	Not Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 9:56 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:05 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:15 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:24 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:33 AM	Reported
11	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	04/25/17 10:44 AM	Reported
12	BLANK	BLANK	1	Hexavalent Chromium	05/15/17 8:51 AM	Not Reported
13	BLANK	BLANK	1	Hexavalent Chromium	05/15/17 9:02 AM	Not Reported
14	CCV-1	CCV	1	Hexavalent Chromium	05/15/17 9:11 AM	Reported
15	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/15/17 9:21 AM	Reported
16	CCB-1	CCB	1	Hexavalent Chromium	05/15/17 9:30 AM	Reported
17	MB-R115274	MBLK	1	Hexavalent Chromium	05/15/17 9:40 AM	Reported
18	LCS-R115274	LCS	1	Hexavalent Chromium	05/15/17 9:49 AM	Reported
19	N024191-001A	SAMP	1	Hexavalent Chromium	05/15/17 10:25 AM	Reported
20	N024191-001AMS	MS	1	Hexavalent Chromium	05/15/17 10:36 AM	Reported
21	N024191-001AMSD	MSD	1	Hexavalent Chromium	05/15/17 10:46 AM	Reported
22	N024191-002A	SAMP	1	Hexavalent Chromium	05/15/17 10:55 AM	Reported
23	N024191-002AMS	MS	1	Hexavalent Chromium	05/15/17 11:05 AM	Reported
24	N024191-004A	SAMP	1	Hexavalent Chromium	05/15/17 11:14 AM	Reported
25	N024191-004AMS	MS	1	Hexavalent Chromium	05/15/17 11:23 AM	Reported
26	N024191-004ADUP	DUP	1	Hexavalent Chromium	05/15/17 11:33 AM	Reported
27	CCV-2	CCV1	1	Hexavalent Chromium	05/15/17 11:42 AM	Reported
28	CCB-2	CCB	1	Hexavalent Chromium	05/15/17 11:52 AM	Reported
29	N024191-003A	SAMP	1	Hexavalent Chromium	05/15/17 12:01 PM	Reported
30	N024191-003AMS	MS	1	Hexavalent Chromium	05/15/17 12:11 PM	Reported
31	N024191-005A	SAMP	1	Hexavalent Chromium	05/15/17 12:20 PM	Reported
32	N024191-005AMS	MS	1	Hexavalent Chromium	05/15/17 12:30 PM	Reported
33	N024191-006A	SAMP	1	Hexavalent Chromium	05/15/17 12:39 PM	Reported
34	N024191-006AMS	MS	1	Hexavalent Chromium	05/15/17 12:49 PM	Reported
35	N024191-007A	SAMP	1	Hexavalent Chromium	05/15/17 12:58 PM	Reported
36	N024191-007AMS	MS	1	Hexavalent Chromium	05/15/17 1:08 PM	Reported
37	N024191-008A	SAMP	1	Hexavalent Chromium	05/15/17 1:17 PM	Reported
38	N024191-008AMS	MS	1	Hexavalent Chromium	05/15/17 1:26 PM	Reported
39	CCV-3	CCV	1	Hexavalent Chromium	05/15/17 1:36 PM	Reported
40	CCB-3	CCB	1	Hexavalent Chromium	05/15/17 1:45 PM	Reported
41	N024191-009A	SAMP	1	Hexavalent Chromium	05/15/17 1:55 PM	Reported
42	N024191-009AMS	MS	1	Hexavalent Chromium	05/15/17 2:04 PM	Reported

rba 5/17/2017

IC7 RBA 5/17/2017 9:06 AM

5/25/2017

INJECTION LOG: 170515A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
43	N024191-010A	SAMP	1	Hexavalent Chromium	05/15/17 2:14 PM	Reported
44	N024191-010AMS	MS	1	Hexavalent Chromium	05/15/17 2:23 PM	Reported
45	N024191-011A	SAMP	1	Hexavalent Chromium	05/15/17 2:33 PM	Reported
46	N024191-011AMS	MS	1	Hexavalent Chromium	05/15/17 2:42 PM	Reported
47	N024191-012A	SAMP	1	Hexavalent Chromium	05/15/17 2:52 PM	Reported
48	N024191-012AMS	MS	1	Hexavalent Chromium	05/15/17 3:01 PM	Reported
49	N024191-013A	SAMP	1	Hexavalent Chromium	05/15/17 3:11 PM	Reported
50	N024191-013AMS	MS	1	Hexavalent Chromium	05/15/17 3:20 PM	Reported
51	CCV-4	CCV1	1	Hexavalent Chromium	05/15/17 3:29 PM	Reported
52	CCB-4	CCB	1	Hexavalent Chromium	05/15/17 3:39 PM	Reported
53	N024191-014A	SAMP	1	Hexavalent Chromium	05/15/17 3:48 PM	Reported
54	N024191-014AMS	MS	1	Hexavalent Chromium	05/15/17 3:58 PM	Reported
55	CCV-5	CCV	1	Hexavalent Chromium	05/15/17 4:07 PM	Reported
56	CCB-5	CCB	1	Hexavalent Chromium	05/15/17 4:17 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170515A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\fromChromeleonLocal\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**15/May/17 17:18:31**
No. of Injections:	**59**	*Updated By:*	**ics 5000**

Injection Details

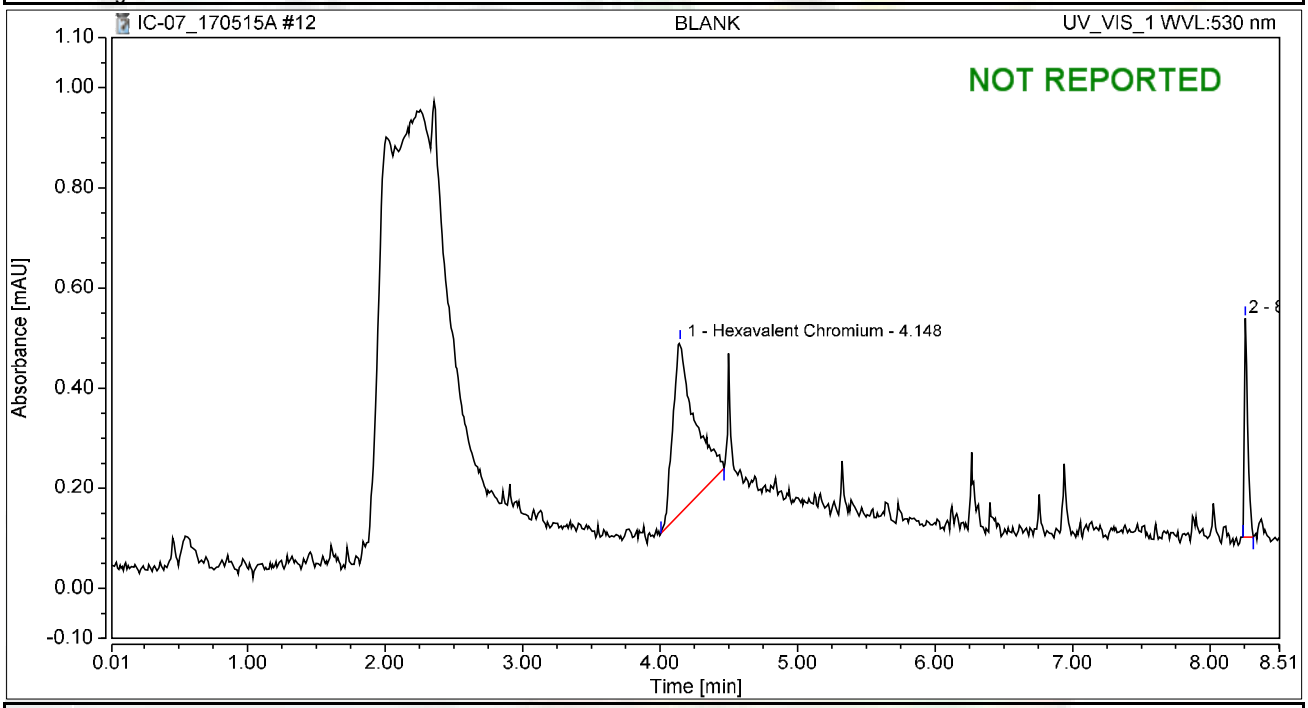
No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		04/25/2017 09:07	Finished	
2	BLANK	2	1000	Unknown		04/25/2017 09:18	Finished	
3	BLANK	3	1000	Unknown		04/25/2017 09:27	Finished	
4	iBLANK	4	1000	Unknown		04/25/2017 09:37	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	5	1000	Unknown		04/25/2017 09:46	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	6	1000	Calibration Standard	02	04/25/2017 09:56	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	7	1000	Calibration Standard	03	04/25/2017 10:05	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	8	1000	Calibration Standard	04	04/25/2017 10:15	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	9	1000	Calibration Standard	05	04/25/2017 10:24	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	10	1000	Calibration Standard	06	04/25/2017 10:33	Finished	20 ppb, IWST-170330A
11	STD1-0.2 ppb	12	1000	Calibration Standard	01	04/25/2017 10:44	Finished	20 ppb, IWST-170330A
12	BLANK	1	1000	Unknown		05/15/2017 08:51	Finished	
13	BLANK	2	1000	Unknown		05/15/2017 09:02	Finished	
14	CCV-1,CCV,1,	3	1000	Unknown		05/15/2017 09:11	Finished	CCV @5ppb, IWST-170330B
15	PQL@0.2ppb,CCV2,1	4	1000	Unknown		05/15/2017 09:21	Finished	PQL @ 0.2ppb
16	CCB-1,CCB,1,	5	1000	Unknown		05/15/2017 09:30	Finished	CCB R170428A
17	MB-H2O,MBLK,1	6	1000	Unknown		05/15/2017 09:40	Finished	MB R170428A
18	LCS-H2O,LCS,1	7	1000	Unknown		05/15/2017 09:49	Finished	LCS, IWST-170330B
19	N024191-001A,SAMP	9	1000	Unknown		05/15/2017 10:25	Finished	SAMP, 10mL
20	N024191-001AMS,MS	10	1000	Unknown		05/15/2017 10:36	Finished	MS (1ppb), IWST-170330B,10
21	N024191-001AMSD,M	11	1000	Unknown		05/15/2017 10:46	Finished	MSD (1ppb), IWST-170330B,10
22	N024191-002A,SAMP	12	1000	Unknown		05/15/2017 10:55	Finished	SAMP, 10mL
23	N024191-002AMS,MS	13	1000	Unknown		05/15/2017 11:05	Finished	MS (1ppb), IWST-170330B,10
24	N024191-004A,SAMP	14	1000	Unknown		05/15/2017 11:14	Finished	SAMP, 10mL
25	N024191-004AMS,MS	15	1000	Unknown		05/15/2017 11:23	Finished	MS (1ppb), IWST-170330B,10
26	N024191-004ADUP,D	16	1000	Unknown		05/15/2017 11:33	Finished	DUP, 10mL
27	CCV-2,CCV1,1,	17	1000	Unknown		05/15/2017 11:42	Finished	CCV @10ppb, IWST-170330A
28	CCB-2,CCB,1,	18	1000	Unknown		05/15/2017 11:52	Finished	CCB R170428A
29	N024191-003A,SAMP	19	1000	Unknown		05/15/2017 12:01	Finished	SAMP, 10mL
30	N024191-003AMS,MS	20	1000	Unknown		05/15/2017 12:11	Finished	MS (1ppb), IWST-170330B,10
31	N024191-005A,SAMP	21	1000	Unknown		05/15/2017 12:20	Finished	SAMP, 10mL
32	N024191-005AMS,MS	22	1000	Unknown		05/15/2017 12:30	Finished	MS (1ppb), IWST-170330B,10
33	N024191-006A,SAMP	23	1000	Unknown		05/15/2017 12:39	Finished	SAMP, 10mL
34	N024191-006AMS,MS	24	1000	Unknown		05/15/2017 12:49	Finished	MS (1ppb), IWST-170330B,10
35	N024191-007A,SAMP	25	1000	Unknown		05/15/2017 12:58	Finished	SAMP, 10mL
36	N024191-007AMS,MS	26	1000	Unknown		05/15/2017 13:08	Finished	MS (1ppb), IWST-170330B,10
37	N024191-008A,SAMP	27	1000	Unknown		05/15/2017 13:17	Finished	SAMP, 10mL
38	N024191-008AMS,MS	28	1000	Unknown		05/15/2017 13:26	Finished	MS (1ppb), IWST-170330B,10
39	CCV-3,CCV,1,	29	1000	Unknown		05/15/2017 13:36	Finished	CCV @5ppb, IWST-170330B
40	CCB-3,CCB,1,	30	1000	Unknown		05/15/2017 13:45	Finished	CCB R170428A
41	N024191-009A,SAMP	31	1000	Unknown		05/15/2017 13:55	Finished	SAMP, 10mL
42	N024191-009AMS,MS	32	1000	Unknown		05/15/2017 14:04	Finished	MS (1ppb), IWST-170330B,10
43	N024191-010A,SAMP	33	1000	Unknown		05/15/2017 14:14	Finished	SAMP, 10mL
44	N024191-010AMS,MS	34	1000	Unknown		05/15/2017 14:23	Finished	MS (1ppb), IWST-170330B,10
45	N024191-011A,SAMP	35	1000	Unknown		05/15/2017 14:33	Finished	SAMP, 10mL
46	N024191-011AMS,MS	36	1000	Unknown		05/15/2017 14:42	Finished	MS (1ppb), IWST-170330B,10
47	N024191-012A,SAMP	37	1000	Unknown		05/15/2017 14:52	Finished	SAMP, 10mL
48	N024191-012AMS,MS	38	1000	Unknown		05/15/2017 15:01	Finished	MS (1ppb), IWST-170330B,10
49	N024191-013A,SAMP	39	1000	Unknown		05/15/2017 15:11	Finished	SAMP, 10mL
50	N024191-013AMS,MS	40	1000	Unknown		05/15/2017 15:20	Finished	MS (1ppb), IWST-170330B,10
51	CCV-4,CCV1,1,	41	1000	Unknown		05/15/2017 15:29	Finished	CCV @10ppb, IWST-170330B
52	CCB-4,CCB,1,	42	1000	Unknown		05/15/2017 15:39	Finished	CCB R170428A
53	N024191-014A,SAMP	43	1000	Unknown		05/15/2017 15:48	Finished	SAMP, 10mL
54	N024191-014AMS,MS	44	1000	Unknown		05/15/2017 15:58	Finished	MS (1ppb), IWST-170330B,10
55	CCV-5,CCV,1,	45	1000	Unknown		05/15/2017 16:07	Finished	CCV @5ppb, IWST-170330B
56	CCB-5,CCB,1,	46	1000	Unknown		05/15/2017 16:17	Finished	CCB R170428A
57	SHUTDOWN	47	1000	Unknown		05/15/2017 16:55	Finished	
58	Eluent: R170514B	48	1000	Unknown		n.a.	Finished	Eluent
59	PCR: R170514C	49	1000	Unknown		n.a.	Finished	Post-Column Reagent

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 08:51**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

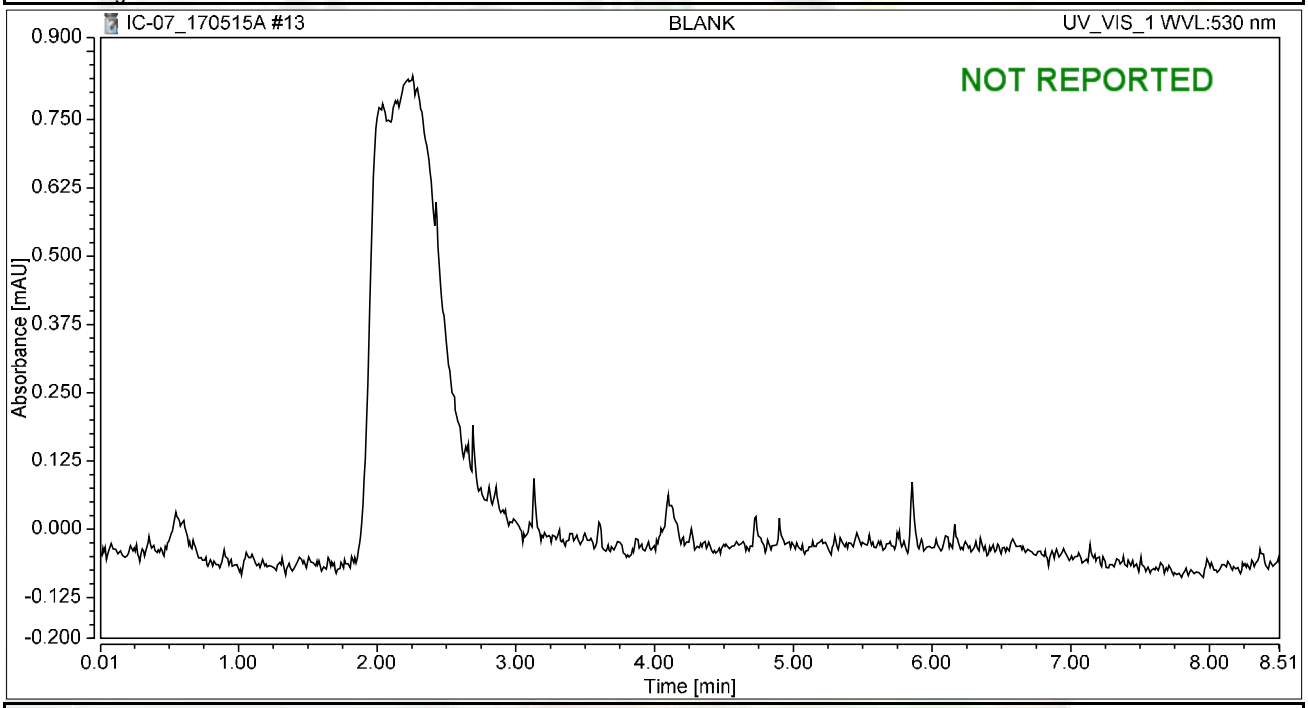
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.148	0.062	0.342	83.60	43.91	0.2550
2		8.256	0.012	0.437	16.40	56.09	n.a.
Total:			**0.074**	**0.780**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:02**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

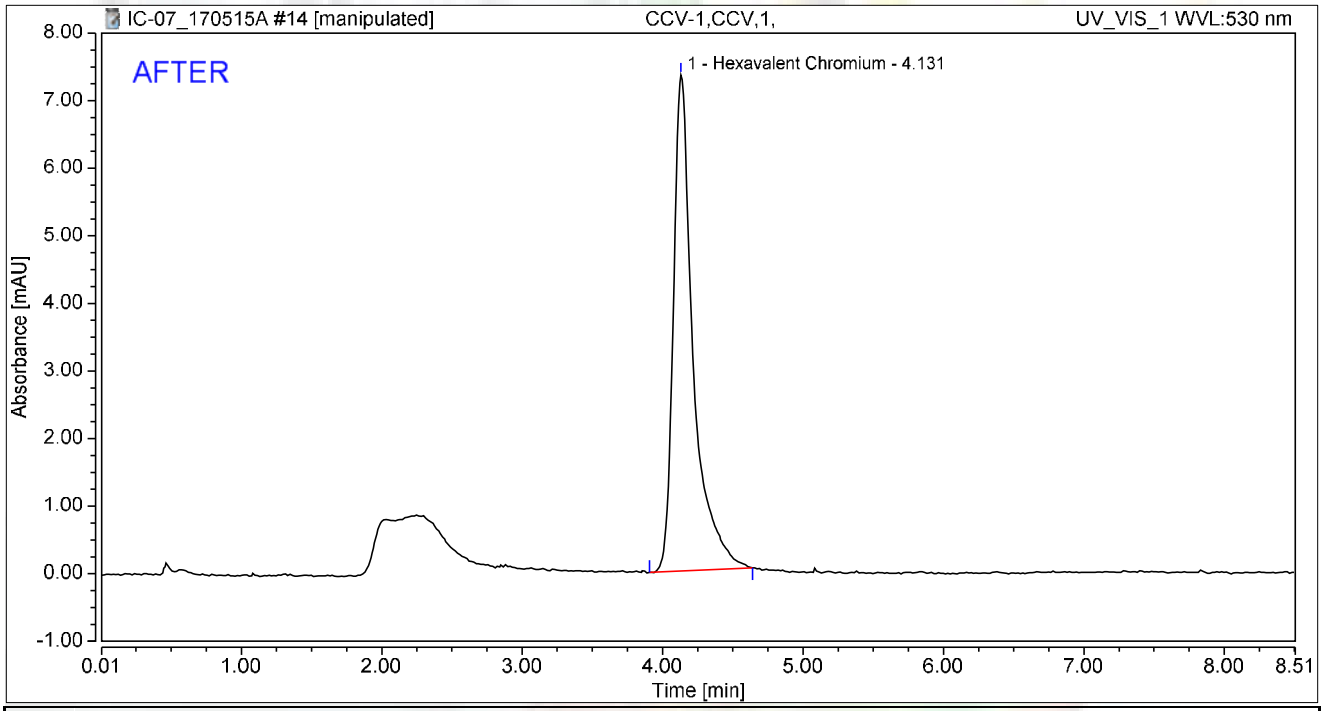
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.199	7.338	100.00	100.00	4.9146
Total:			**1.199**	**7.338**	**100.00**	**100.00**	

rba 5/17/2017

Reviewed by: Nancy 5/25/2017

My first report/Integration

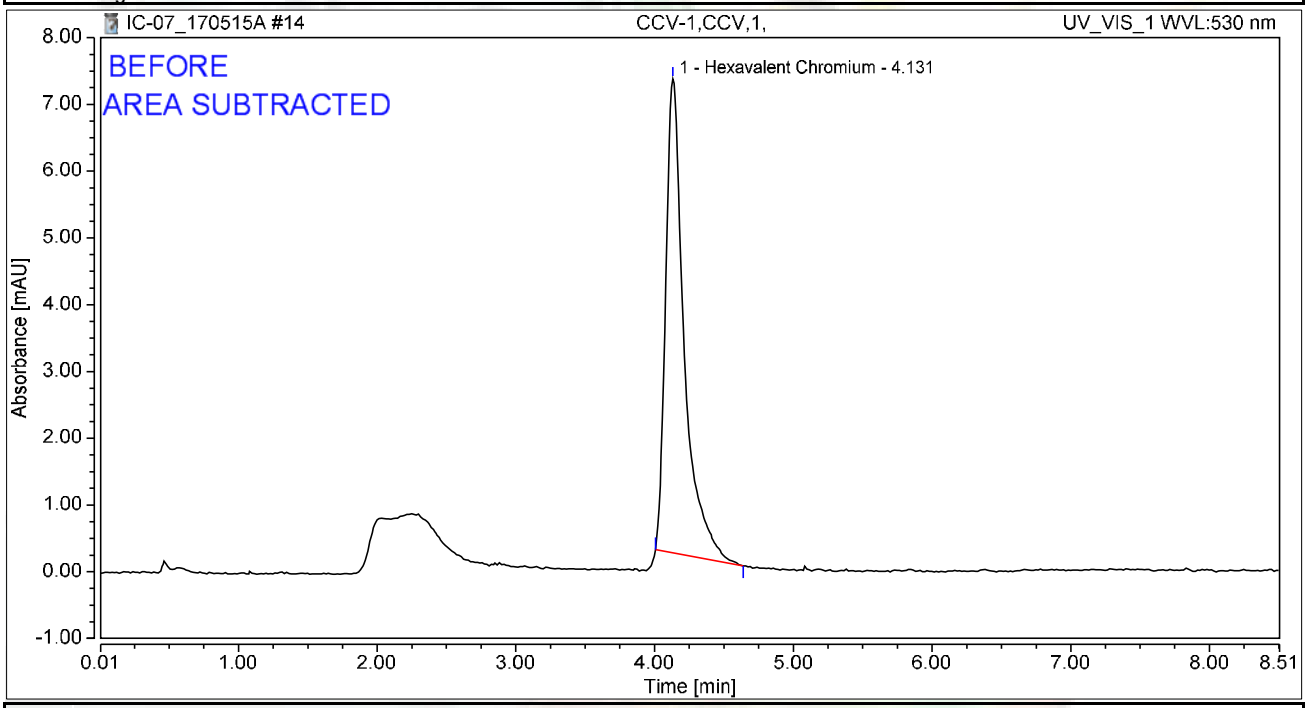
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.098	7.097	100.00	100.00	4.5001
Total:			**1.098**	**7.097**	**100.00**	**100.00**	

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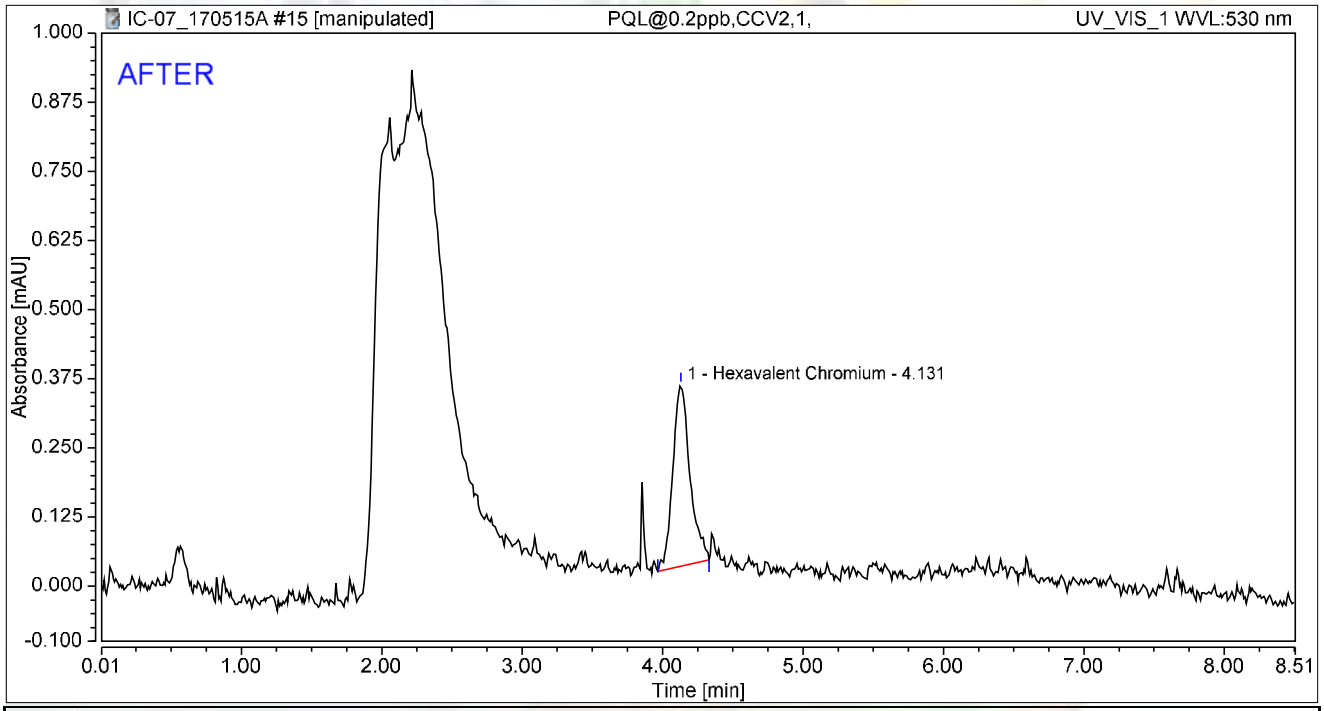
Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.047	0.328	100.00	100.00	0.1911
Total:			**0.047**	**0.328**	**100.00**	**100.00**	

rba 5/17/2017

Reviewed by: Nancy 5/25/2017

My first report/integration

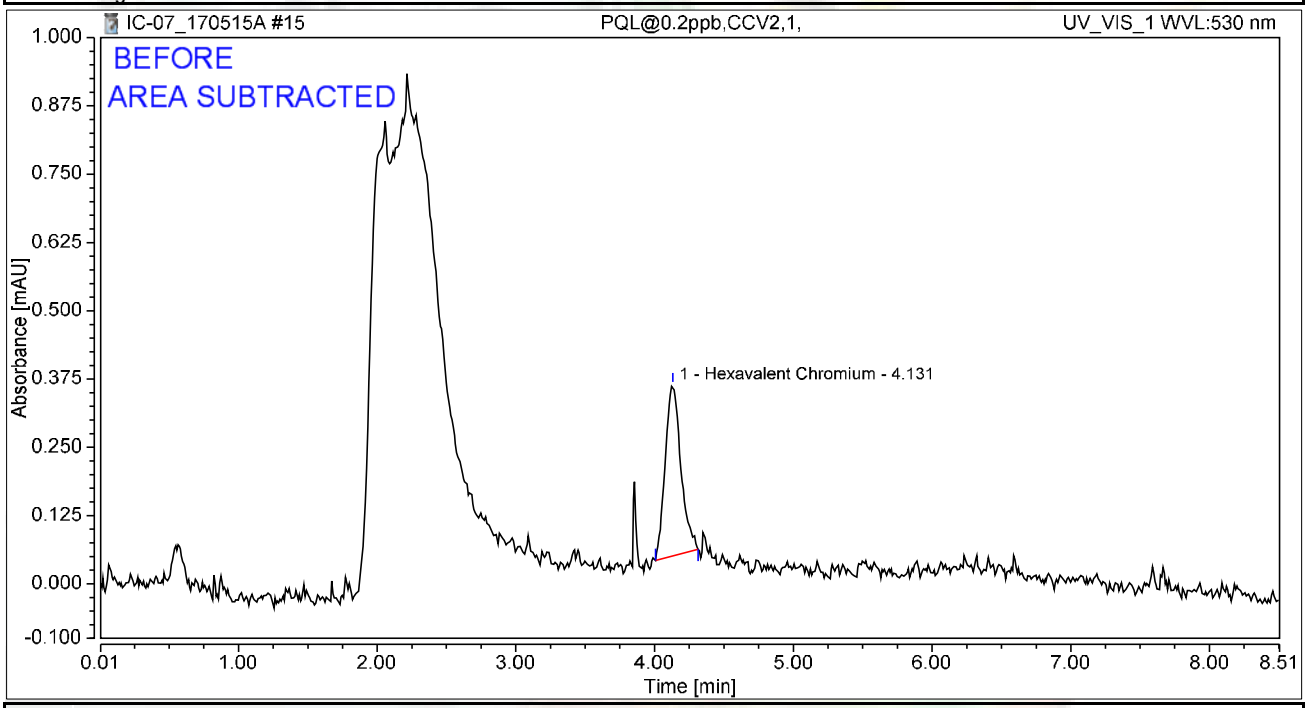
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:21**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.041	0.313	100.00	100.00	0.1692
Total:			**0.041**	**0.313**	**100.00**	**100.00**	

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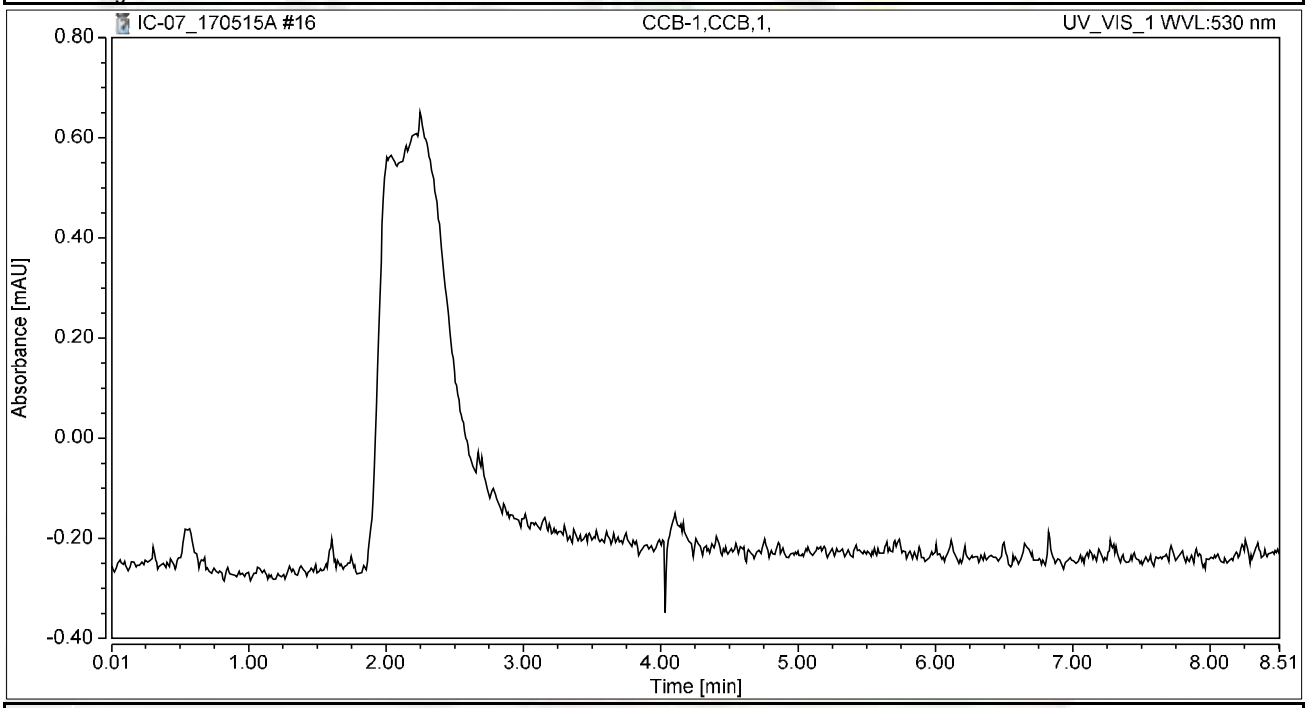
Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

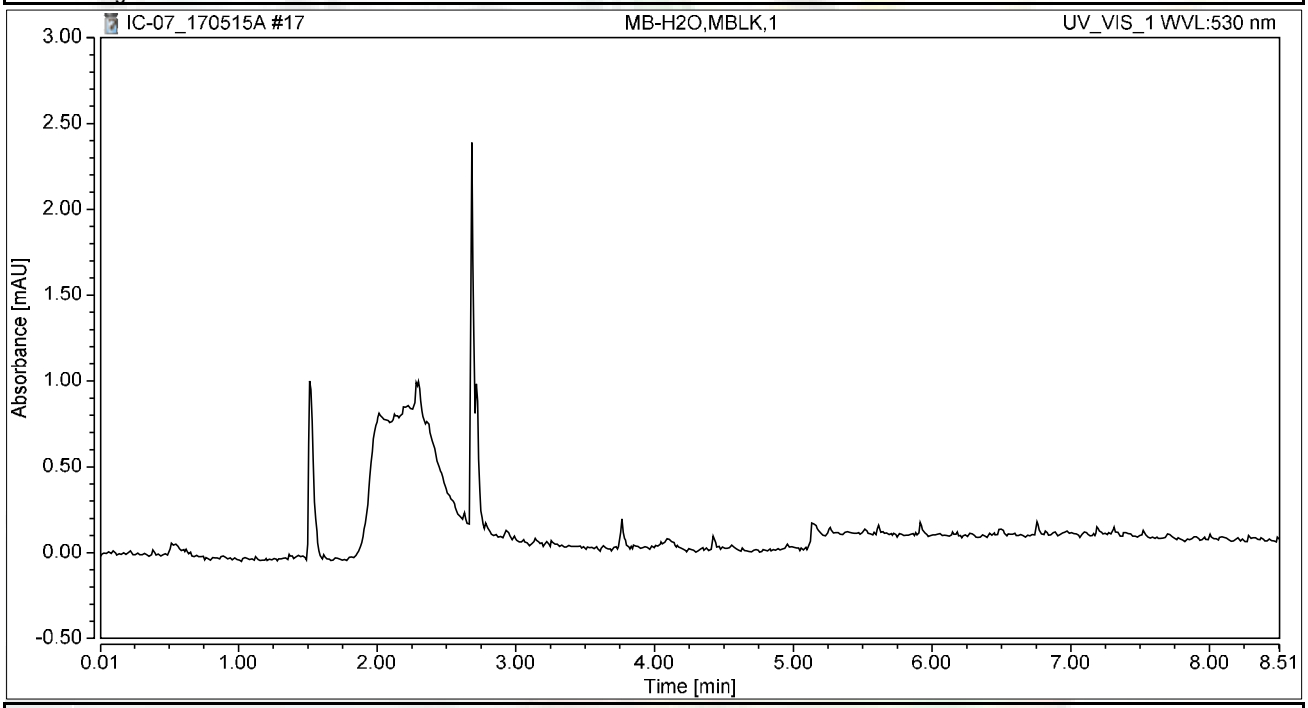
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

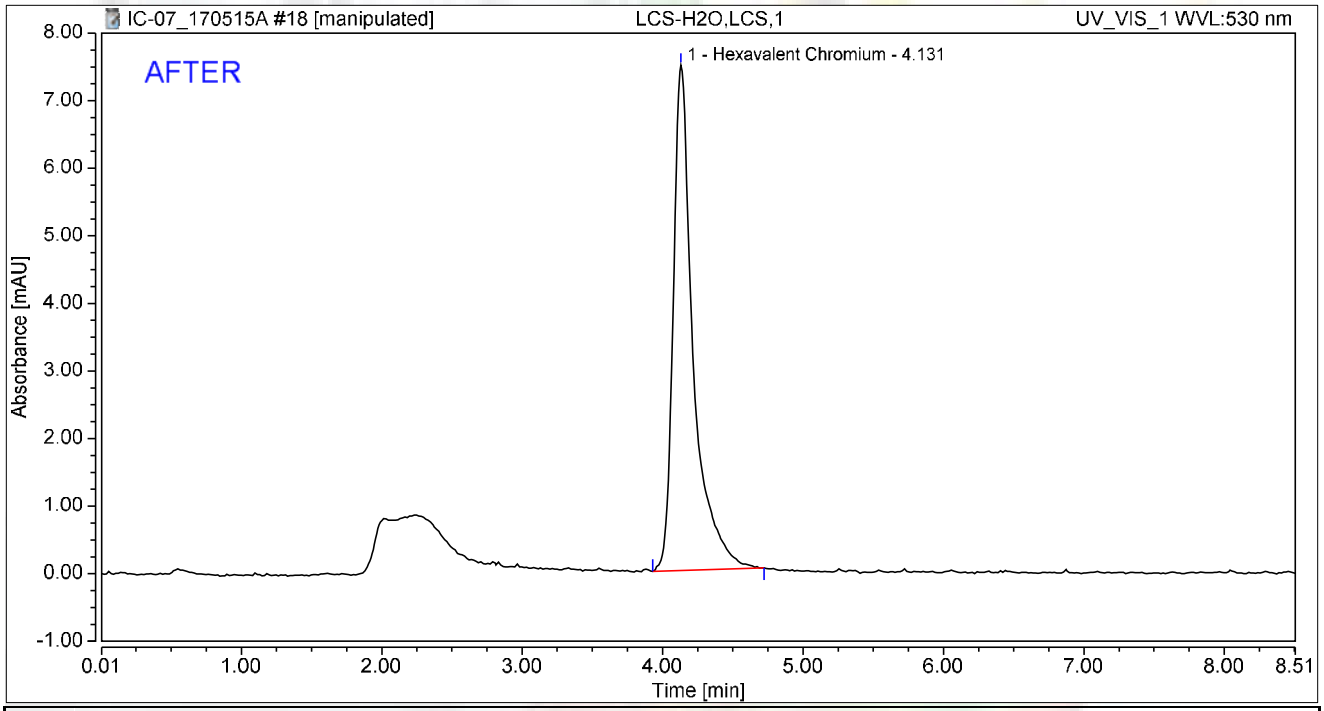
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.233	7.475	100.00	100.00	5.0541
Total:			**1.233**	**7.475**	**100.00**	**100.00**	

rba 5/17/2017

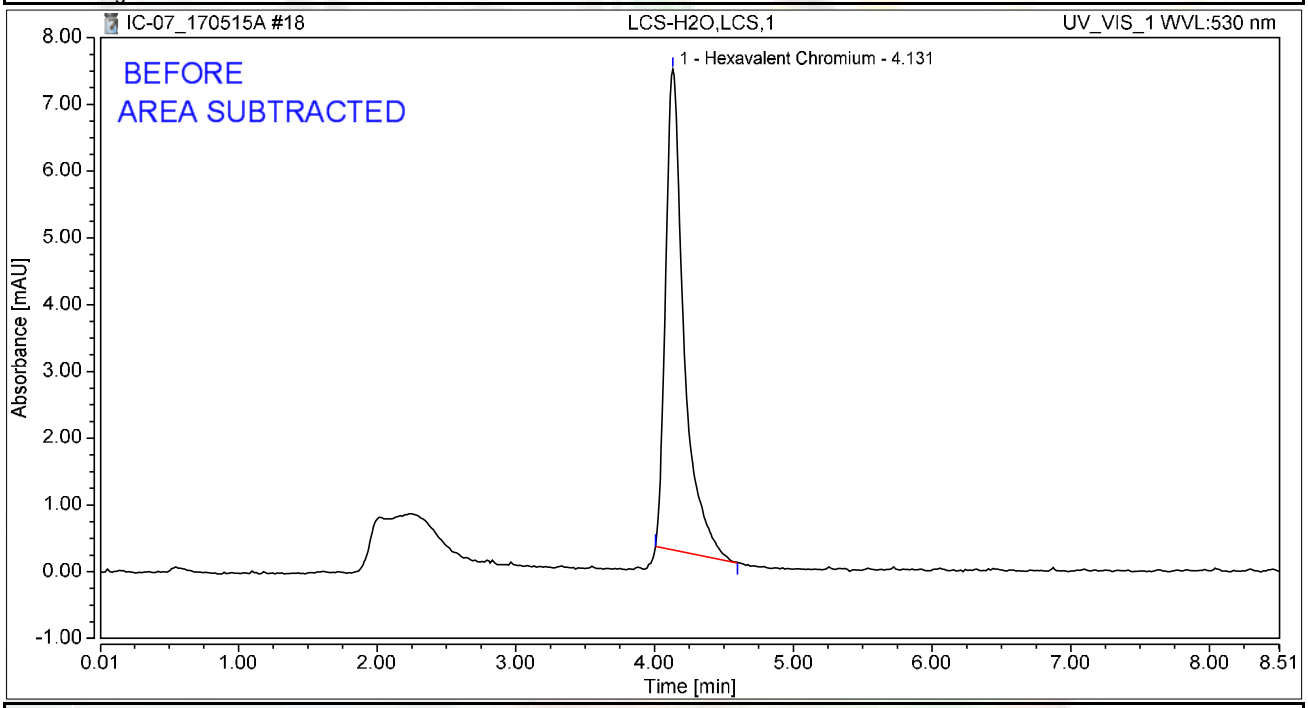
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 09:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.104	7.193	100.00	100.00	4.5269
Total:			**1.104**	**7.193**	**100.00**	**100.00**	

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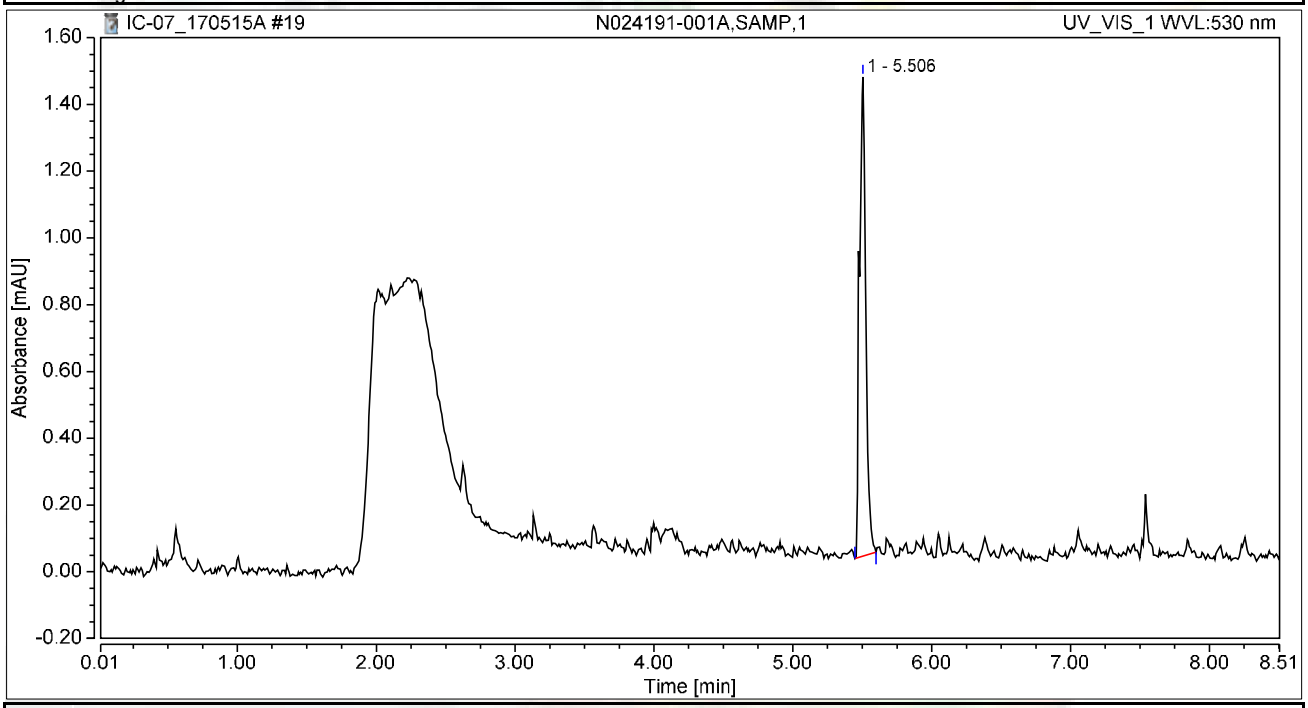
Chromatogram and Results

Injection Details

Injection Name:	**N024191-001A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 10:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

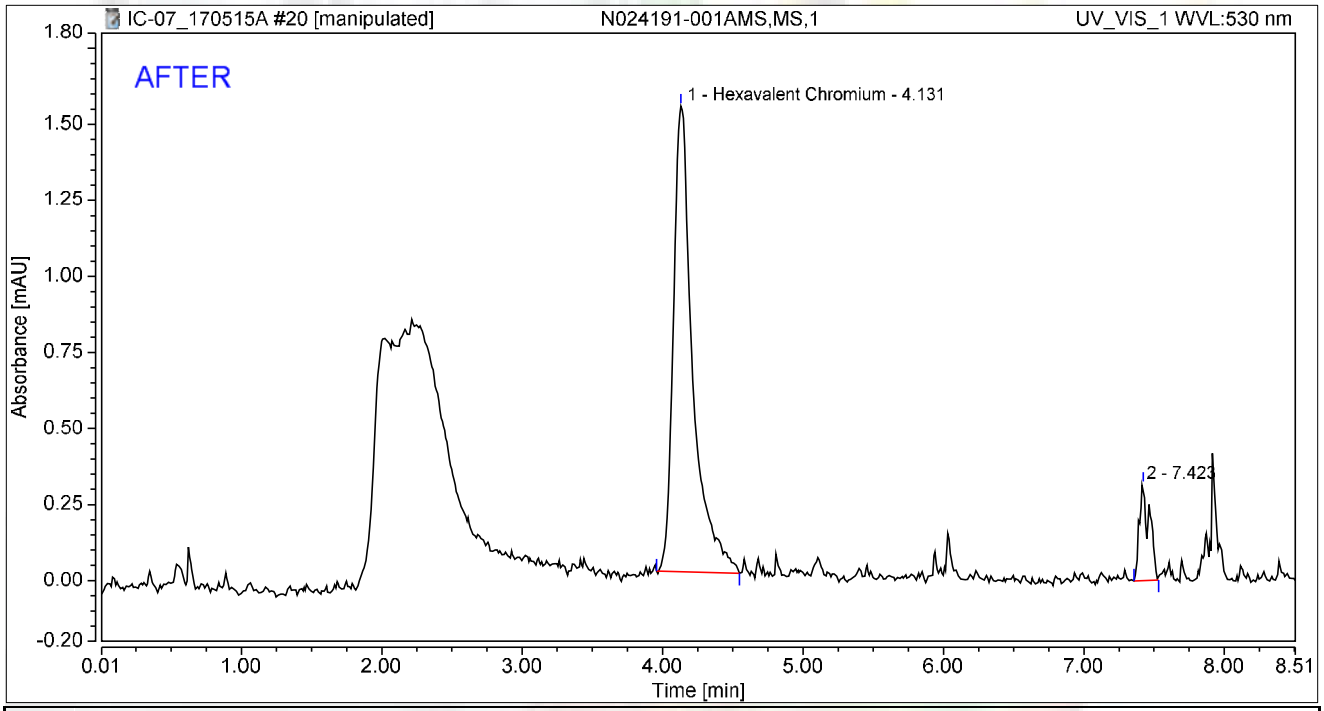
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.506	0.077	1.436	100.00	100.00	n.a.
Total:			**0.077**	**1.436**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 10:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.245	1.531	90.26	82.88	1.0026
2		7.423	0.026	0.316	9.74	17.12	n.a.
Total:			**0.271**	**1.847**	**100.00**	**100.00**	

rba 5/17/2017

My first report/Integration

Reviewed by: Nancy 5/25/2017

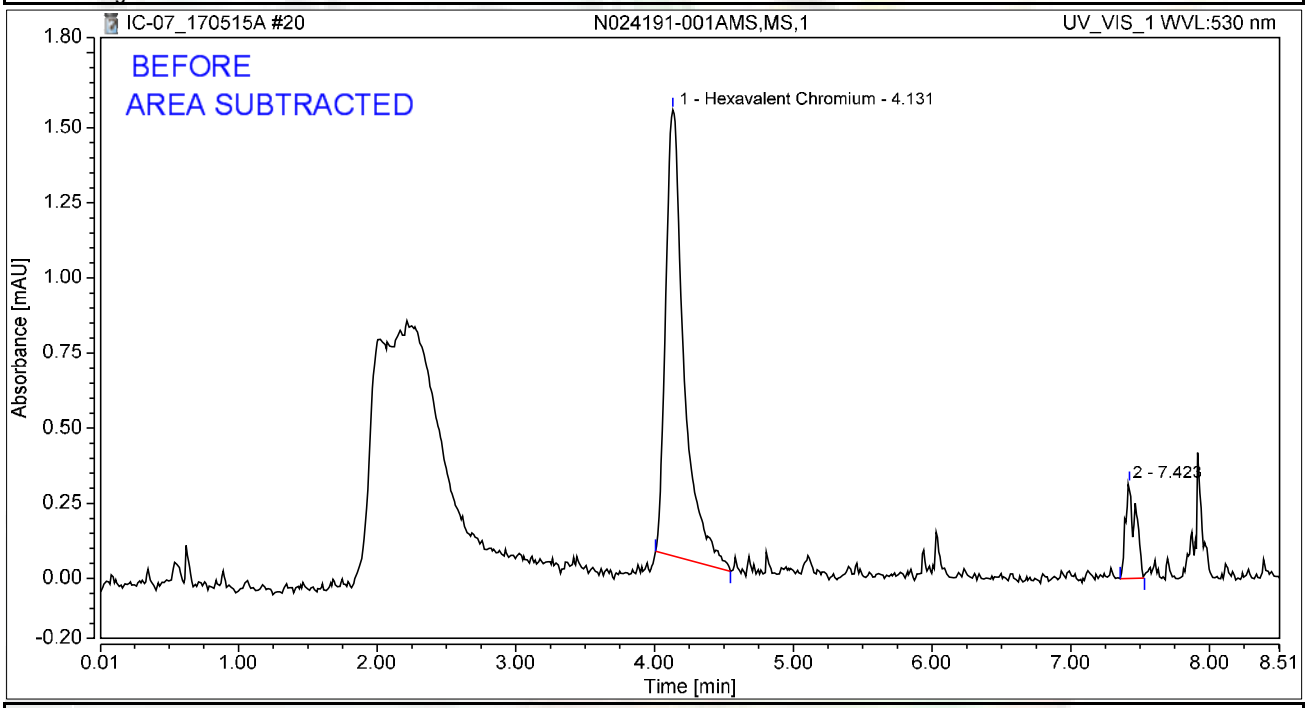
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024191-001AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 10:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.228	1.485	89.62	82.45	0.9339
2		7.423	0.026	0.316	10.38	17.55	n.a.
Total:			**0.254**	**1.801**	**100.00**	**100.00**	

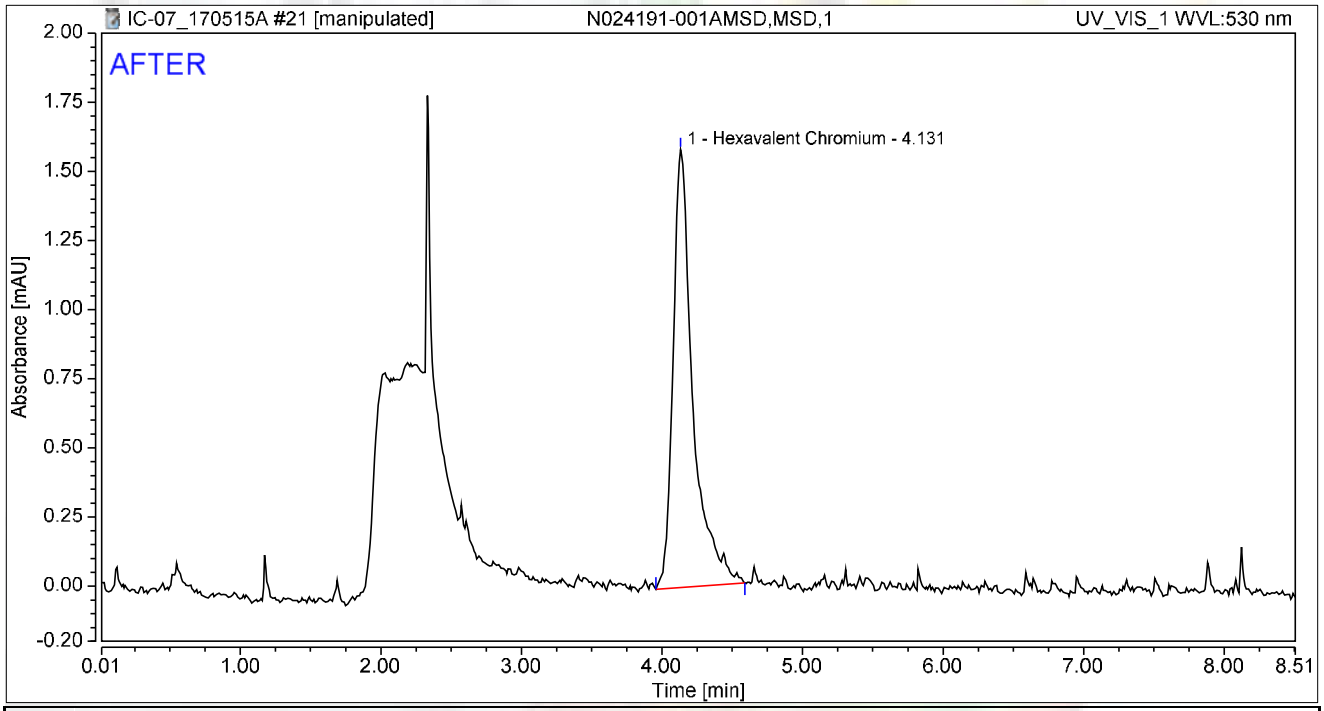
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-001AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 10:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.258	1.583	100.00	100.00	1.0591
Total:			**0.258**	**1.583**	**100.00**	**100.00**	

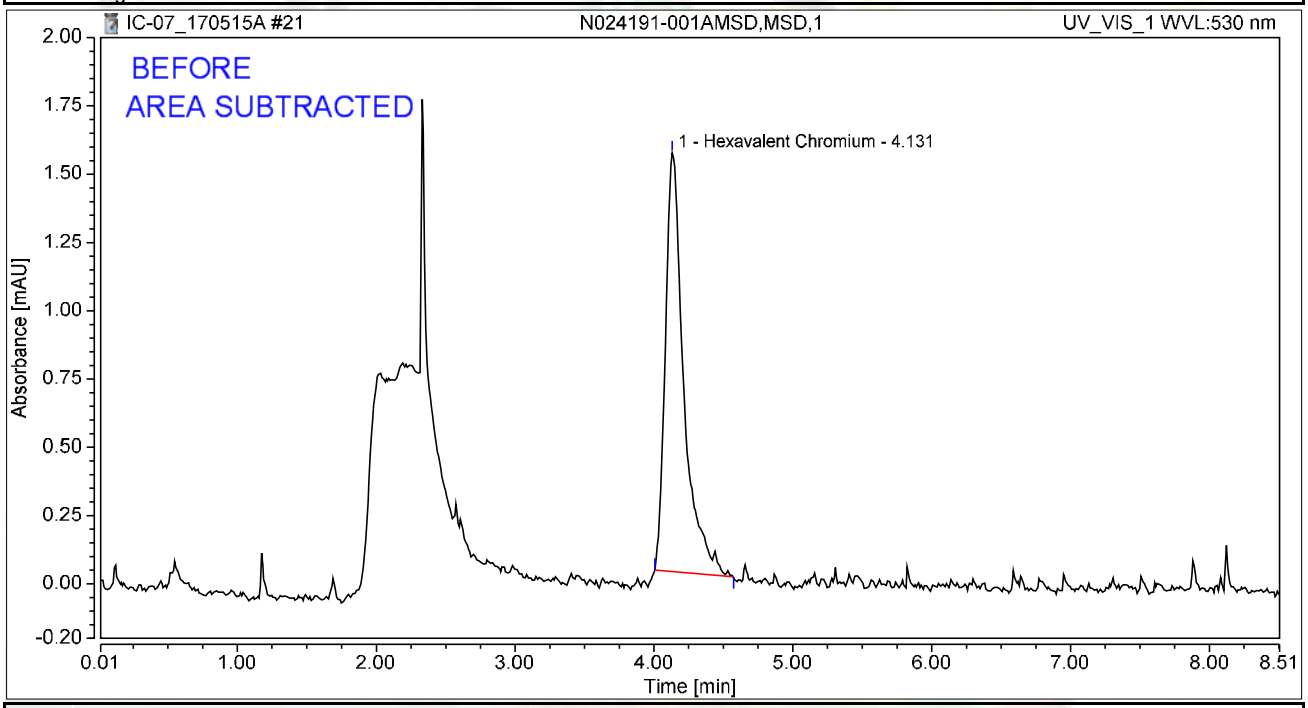
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-001AMSD,MSD,1**	*Run Time (min):*	**8.49**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 10:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.236	1.533	100.00	100.00	0.9662
Total:			**0.236**	**1.533**	**100.00**	**100.00**	

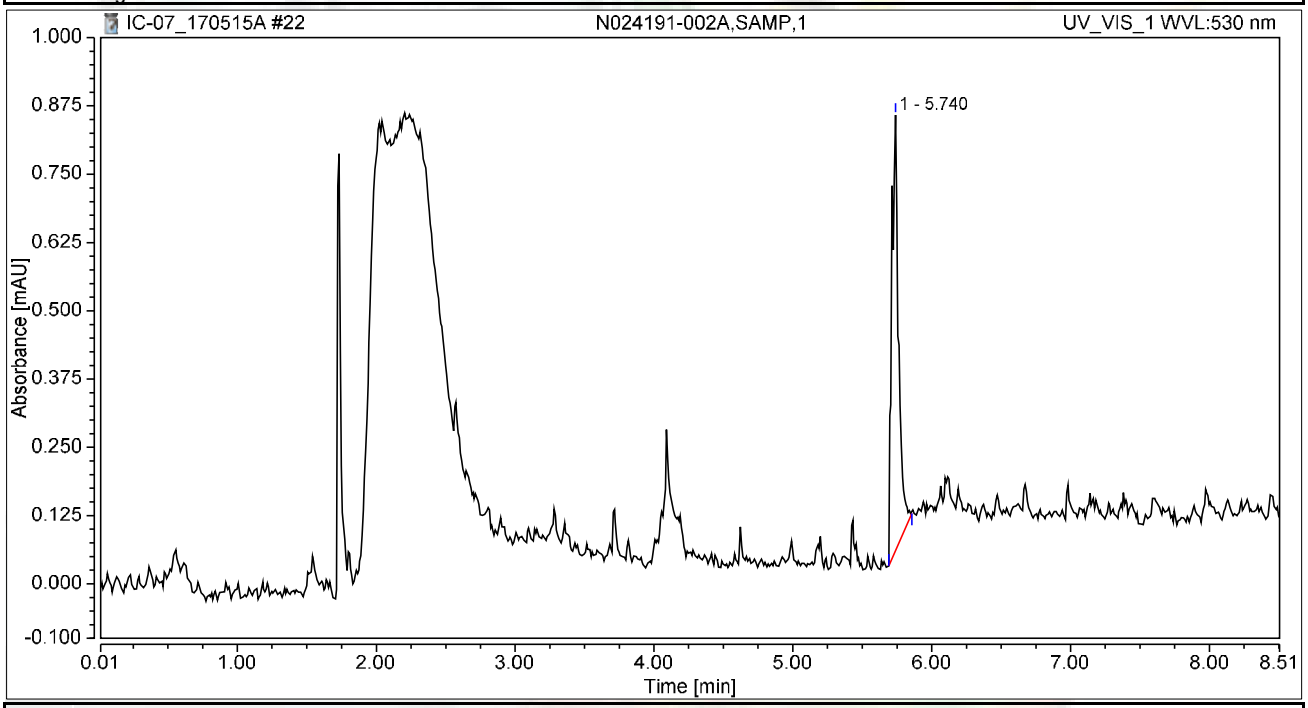
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-002A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 10:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

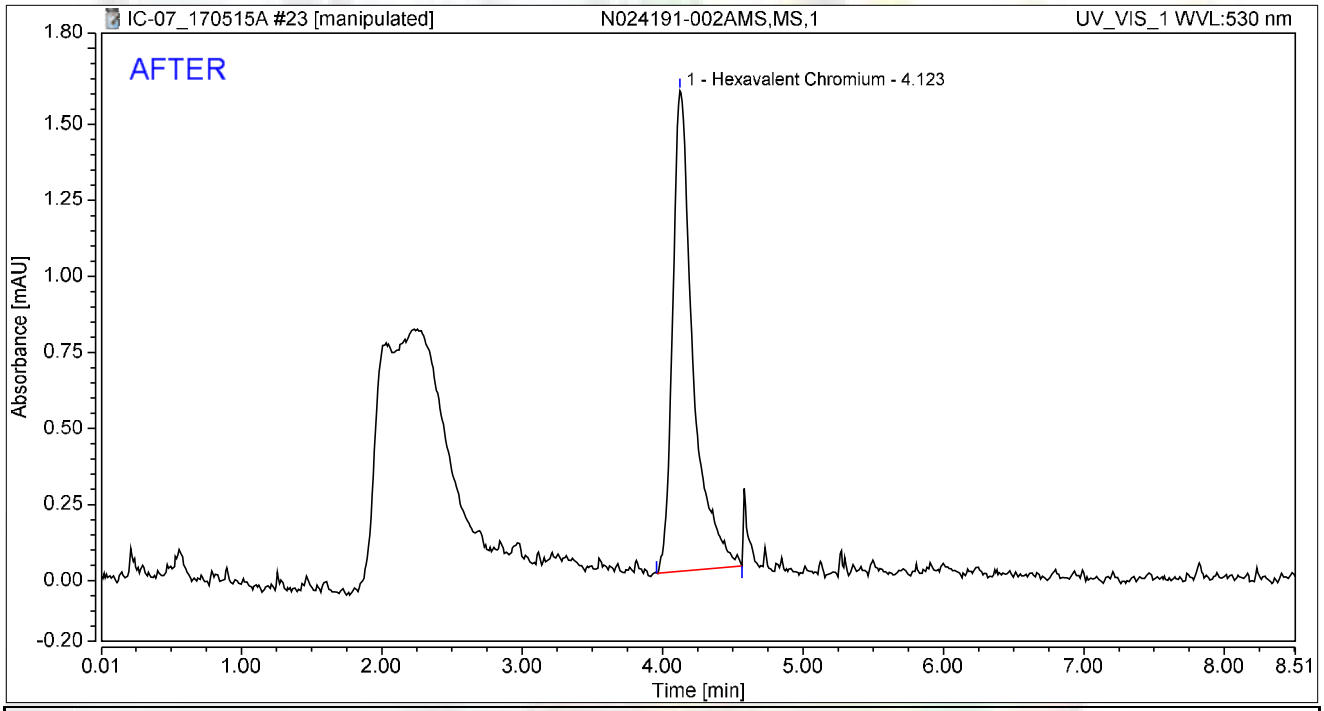
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
1		5.740	0.045	0.797	100.00	100.00	n.a.
Total:			**0.045**	**0.797**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.266	1.581	100.00	100.00	1.0914
Total:			**0.266**	**1.581**	**100.00**	**100.00**	

rba 5/17/2017

Reviewed by: 5/25/2017

My first report/Integration

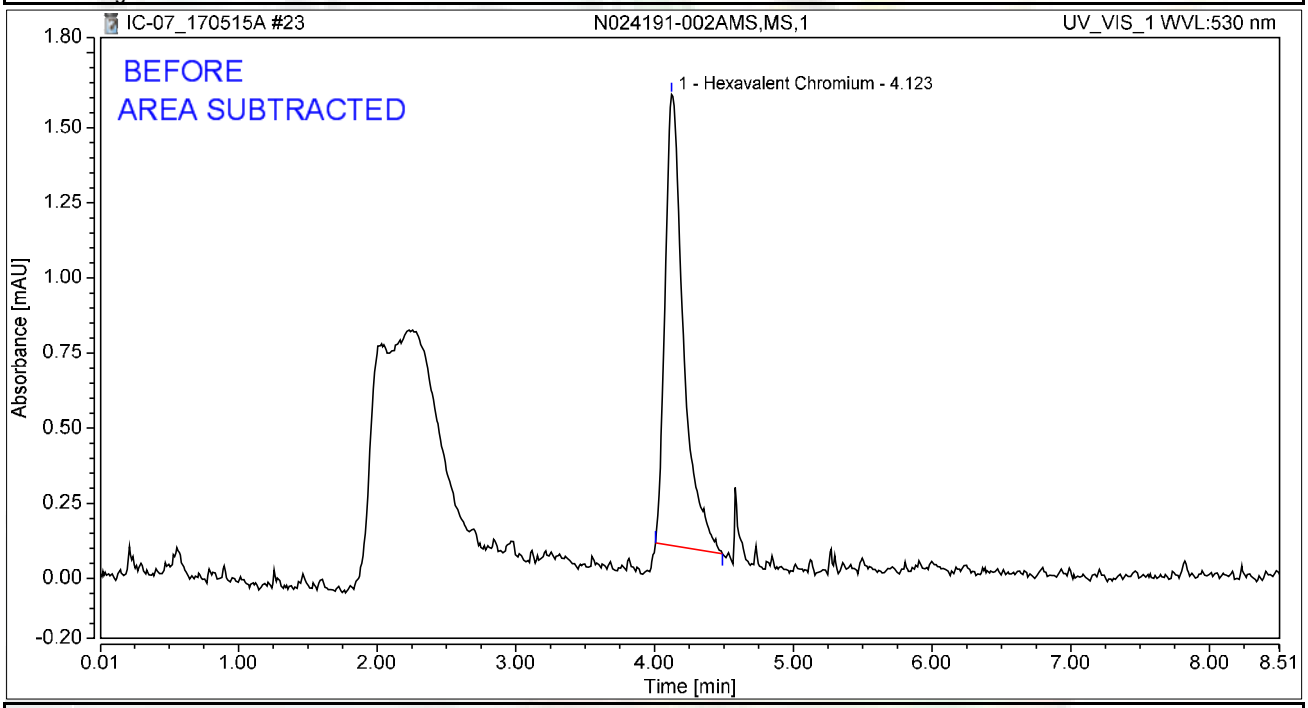
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024191-002AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:05**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.231	1.502	100.00	100.00	0.9486
Total:			**0.231**	**1.502**	**100.00**	**100.00**	

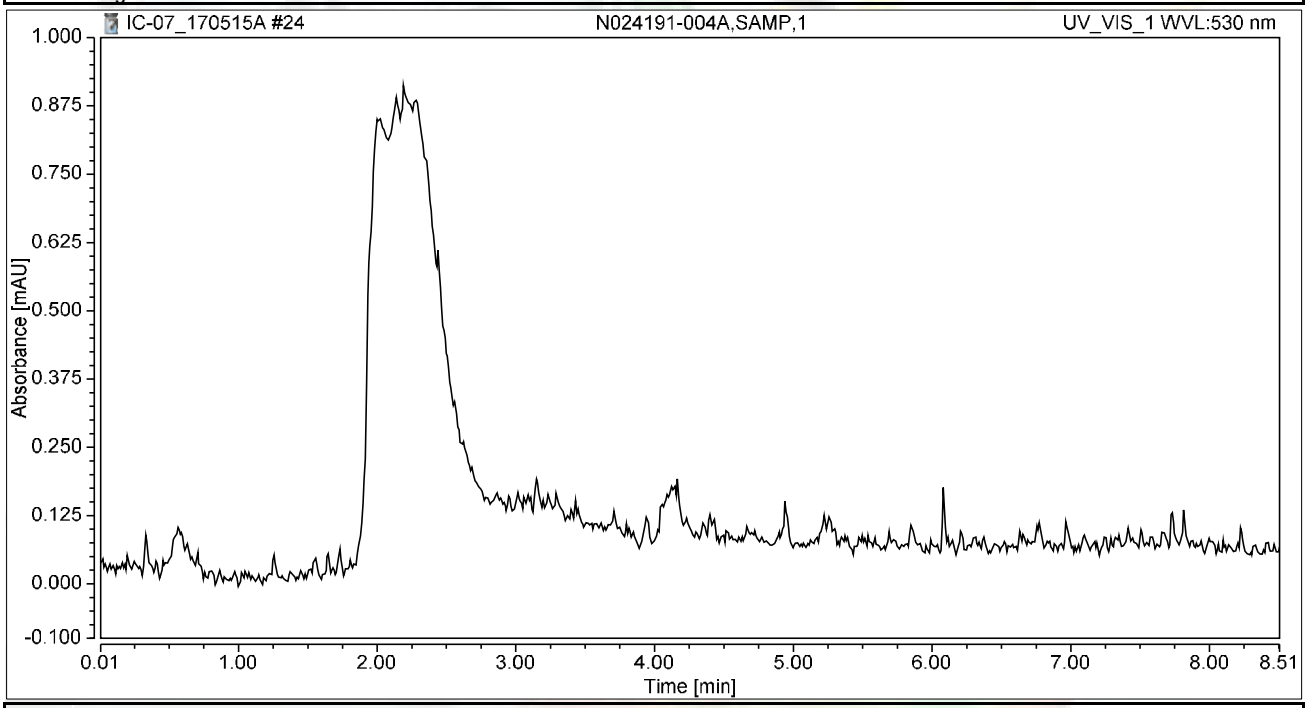
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-004A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

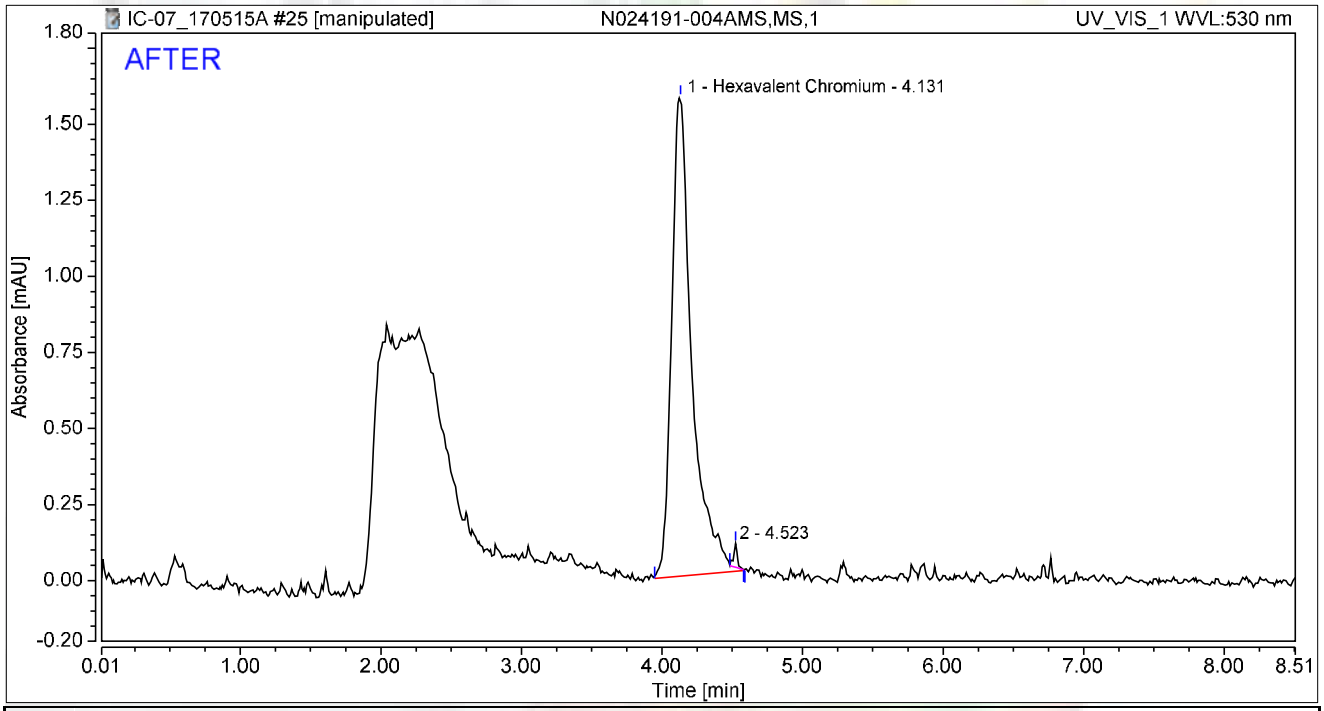
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.263	1.574	99.07	95.28	1.0764
2		4.523	0.002	0.078	0.93	4.72	n.a.
Total:			**0.265**	**1.652**	**100.00**	**100.00**	

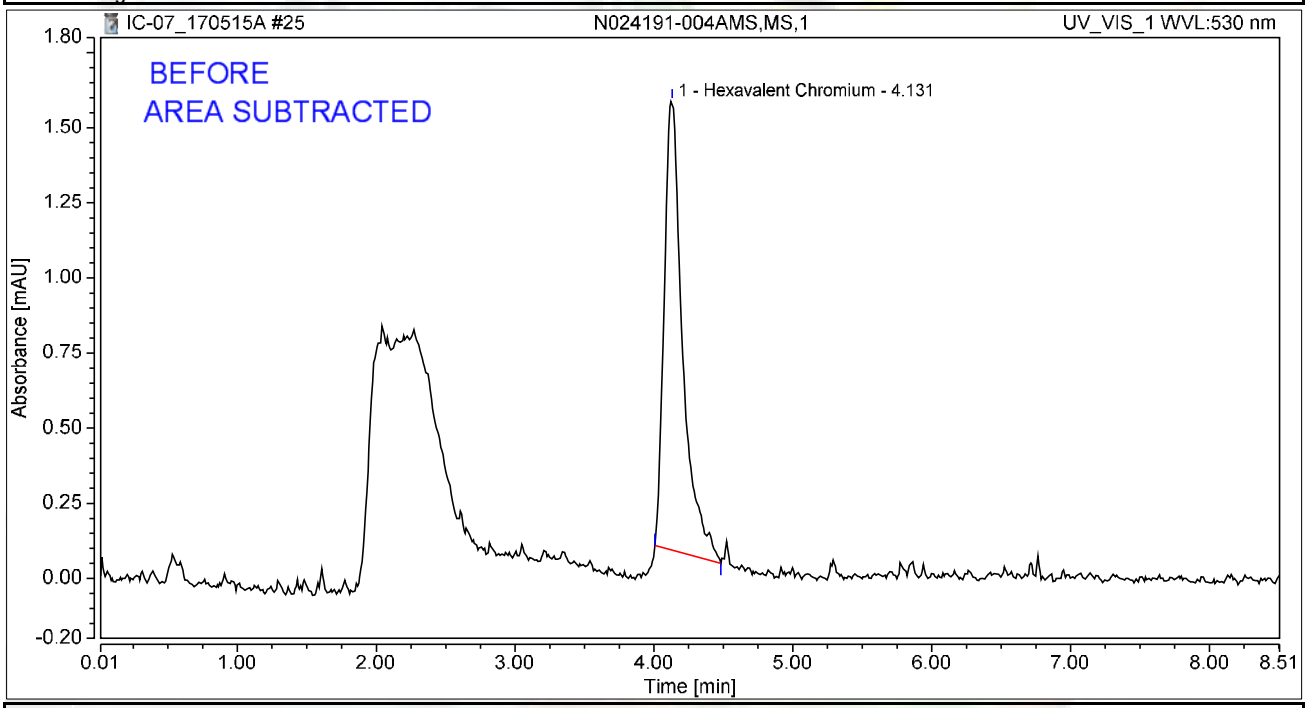
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-004AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.230	1.495	100.00	100.00	0.9449
Total:			**0.230**	**1.495**	**100.00**	**100.00**	

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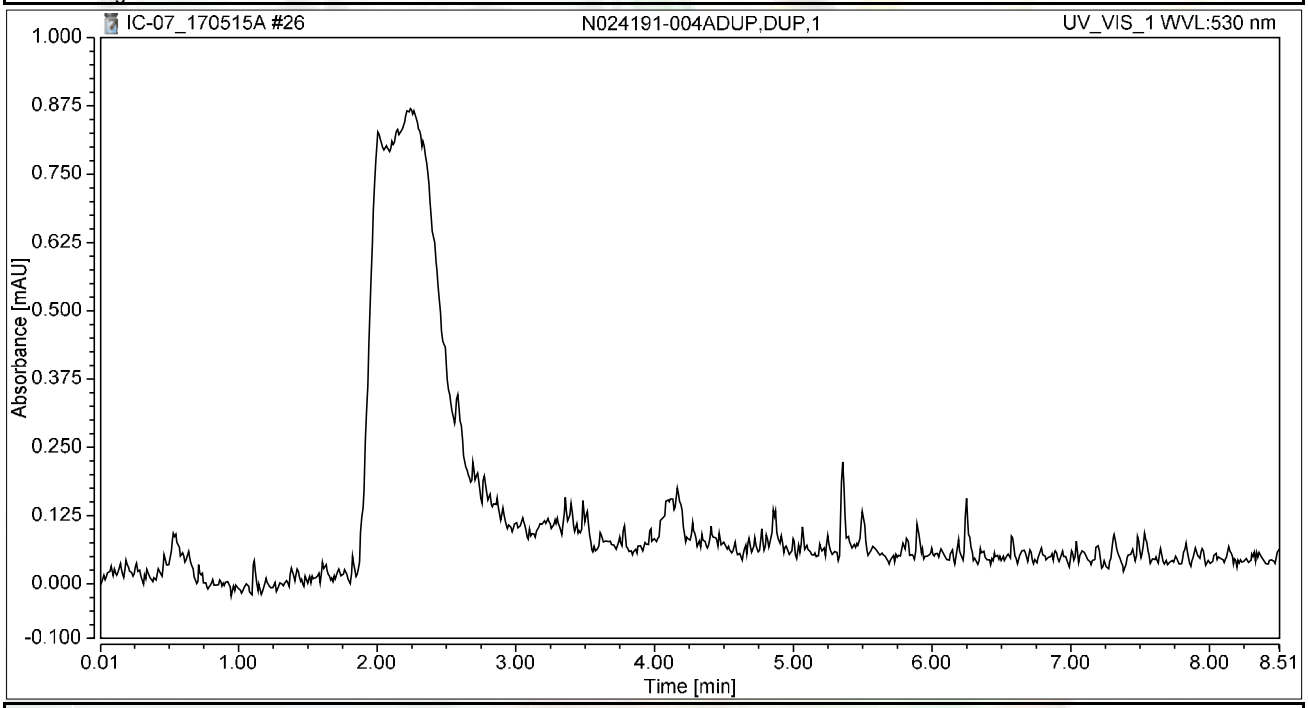
Chromatogram and Results

Injection Details

Injection Name:	**N024191-004ADUP,DUP,1**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

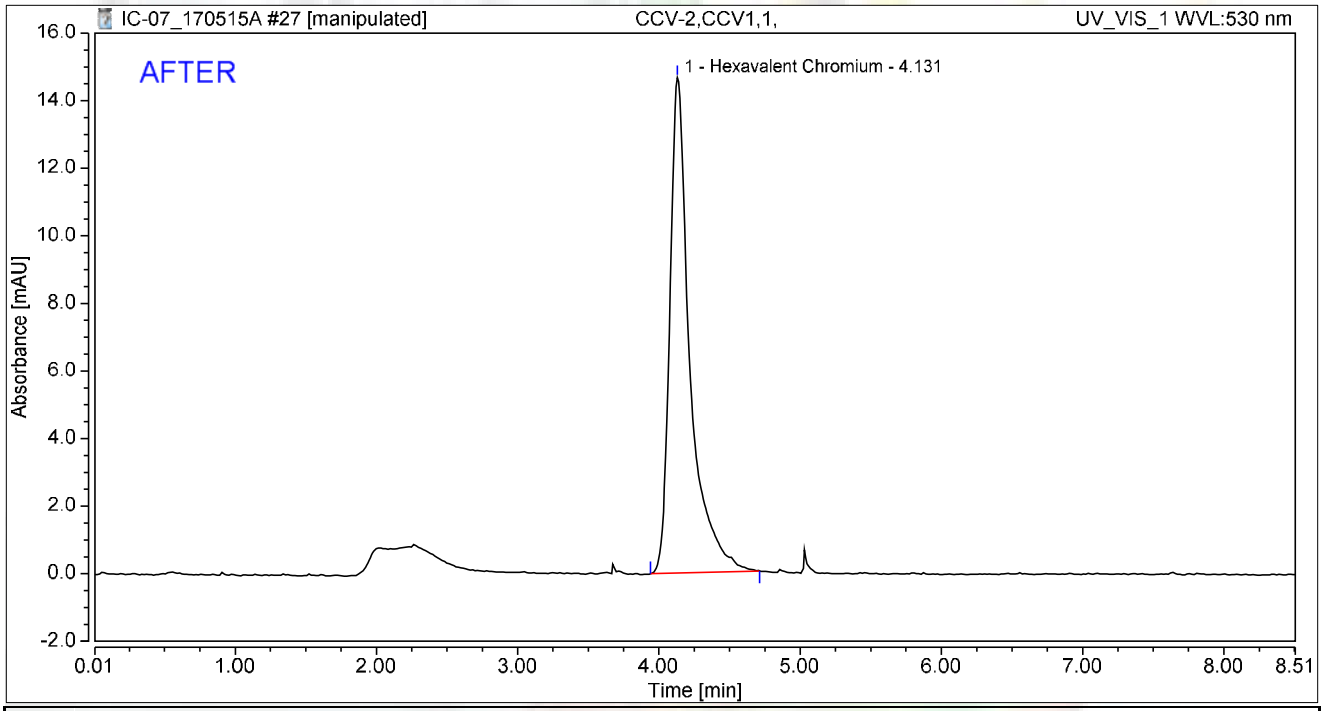
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.422	14.663	100.00	100.00	9.9306
Total:			**2.422**	**14.663**	**100.00**	**100.00**	

rba 5/17/2017

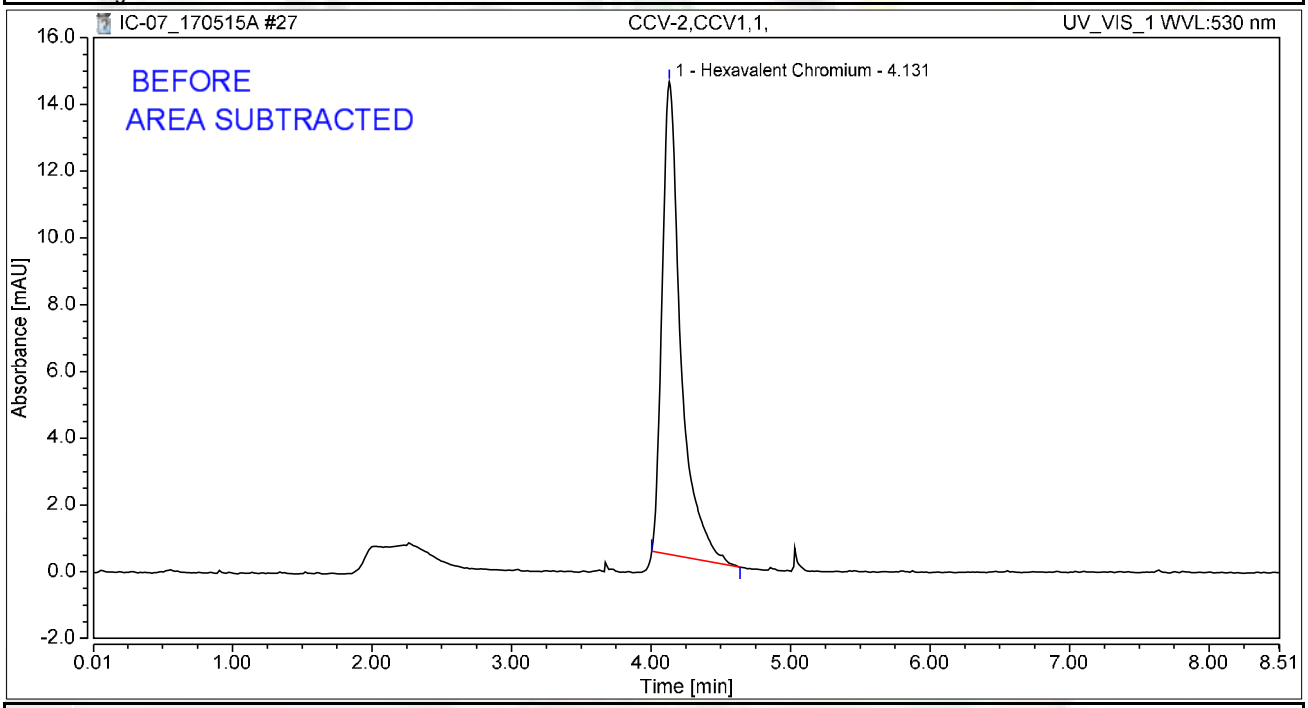
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.201	14.171	100.00	100.00	9.0236
Total:			**2.201**	**14.171**	**100.00**	**100.00**	

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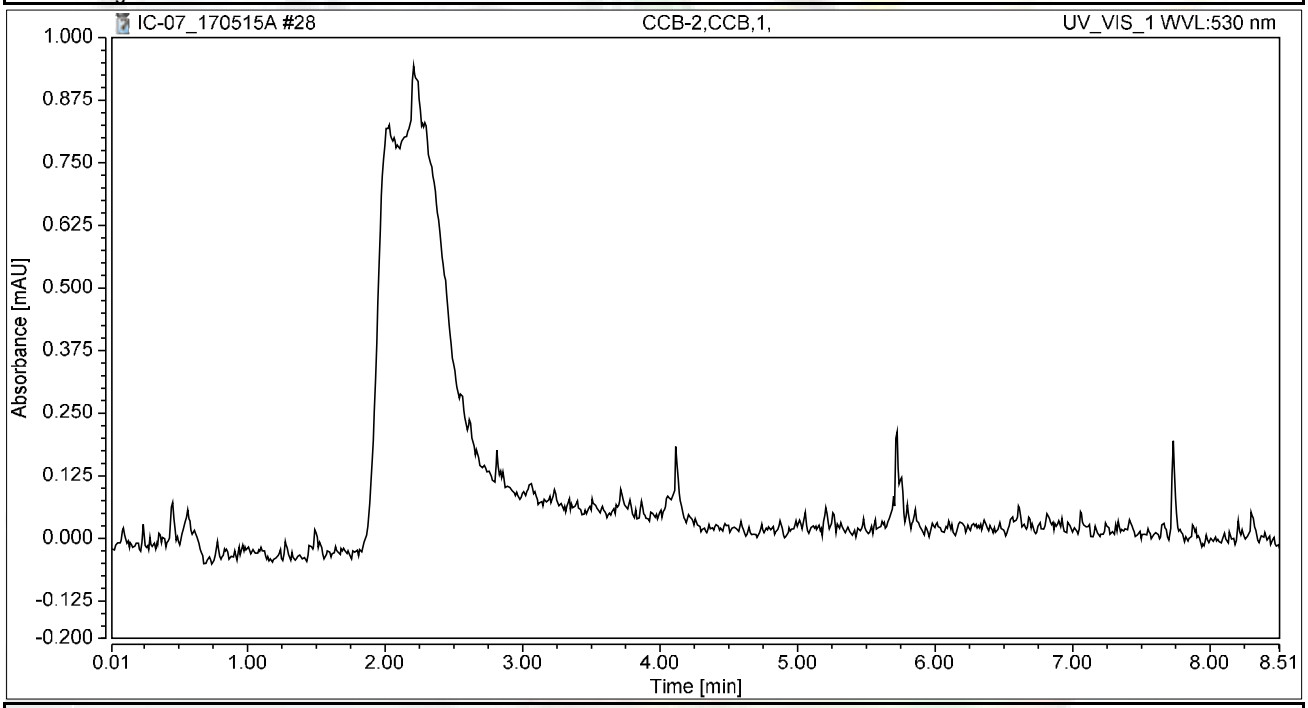
Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 11:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

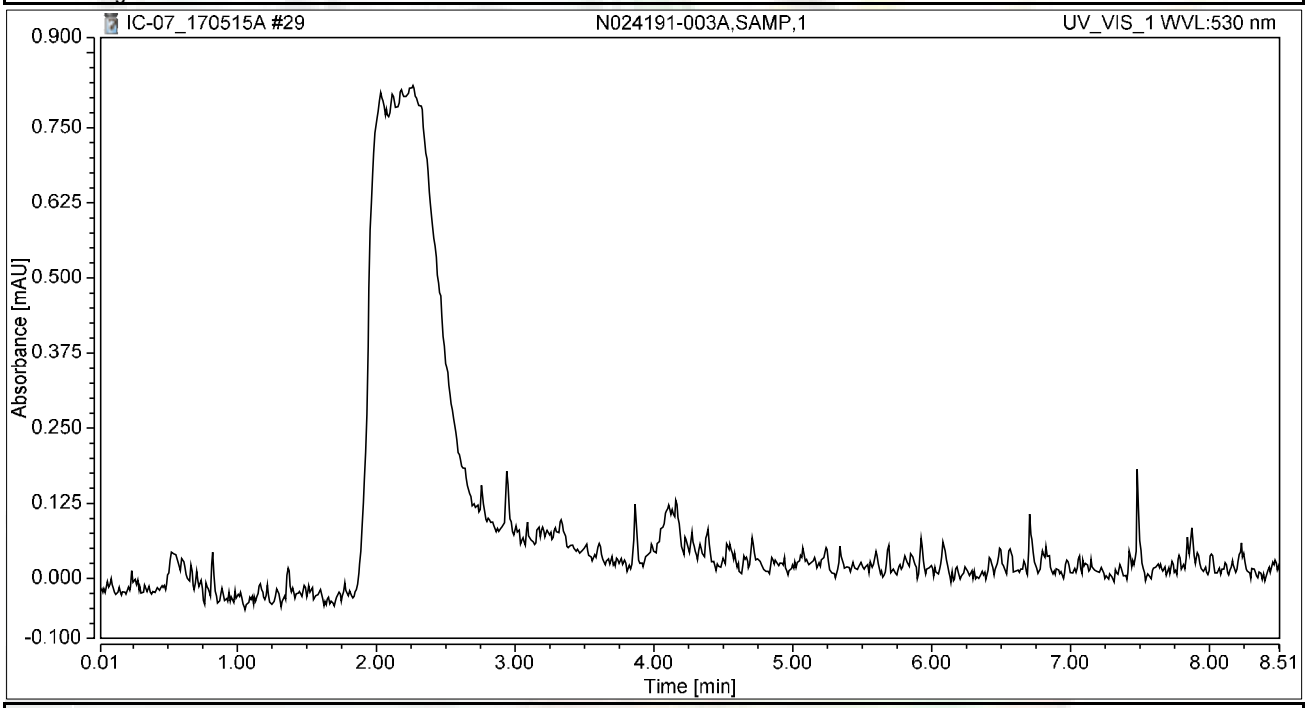
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-003A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

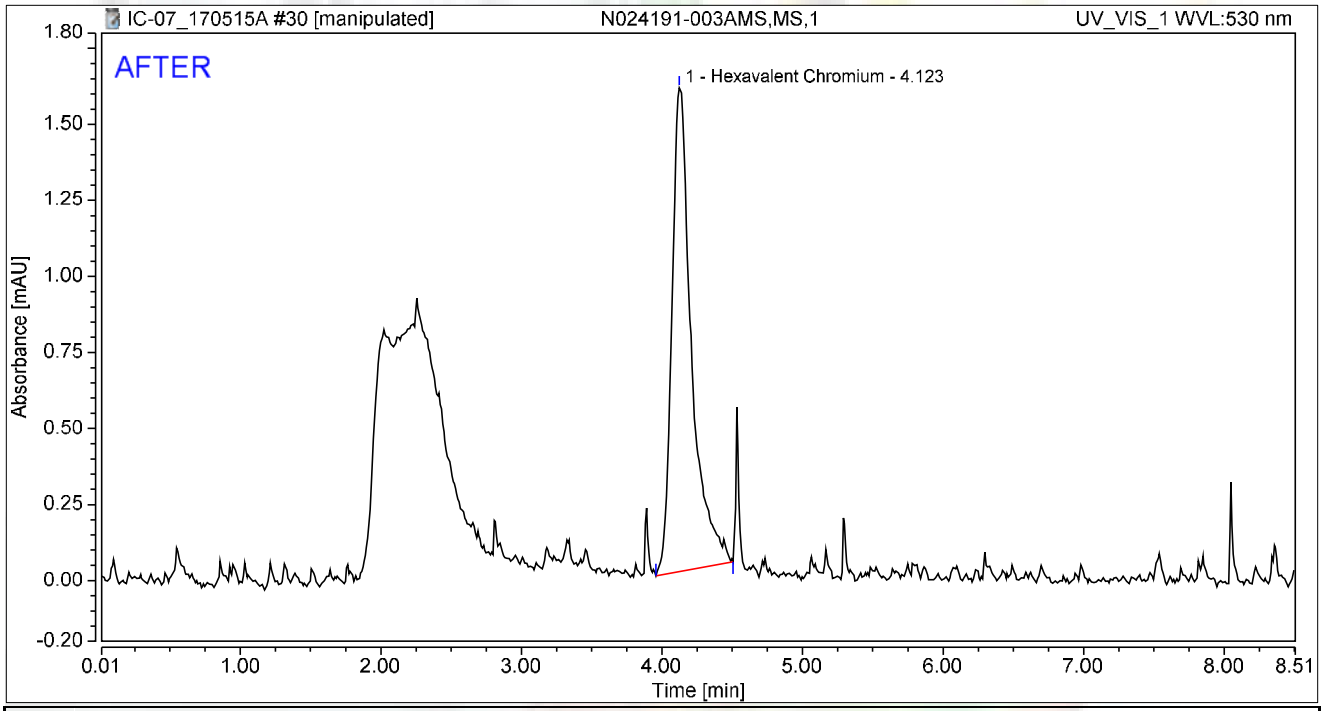
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.258	1.591	100.00	100.00	1.0576
Total:			**0.258**	**1.591**	**100.00**	**100.00**	

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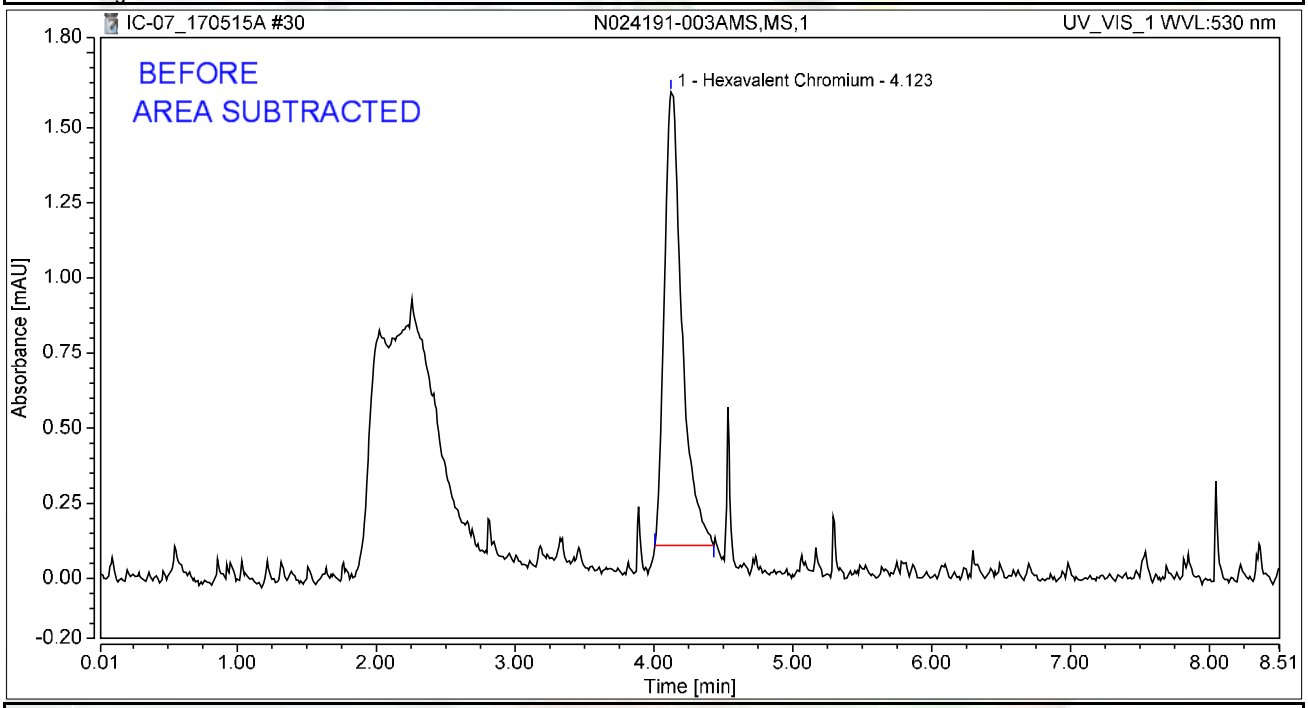
Chromatogram and Results

Injection Details

Injection Name:	**N024191-003AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.223	1.510	100.00	100.00	0.9131
Total:			**0.223**	**1.510**	**100.00**	**100.00**	

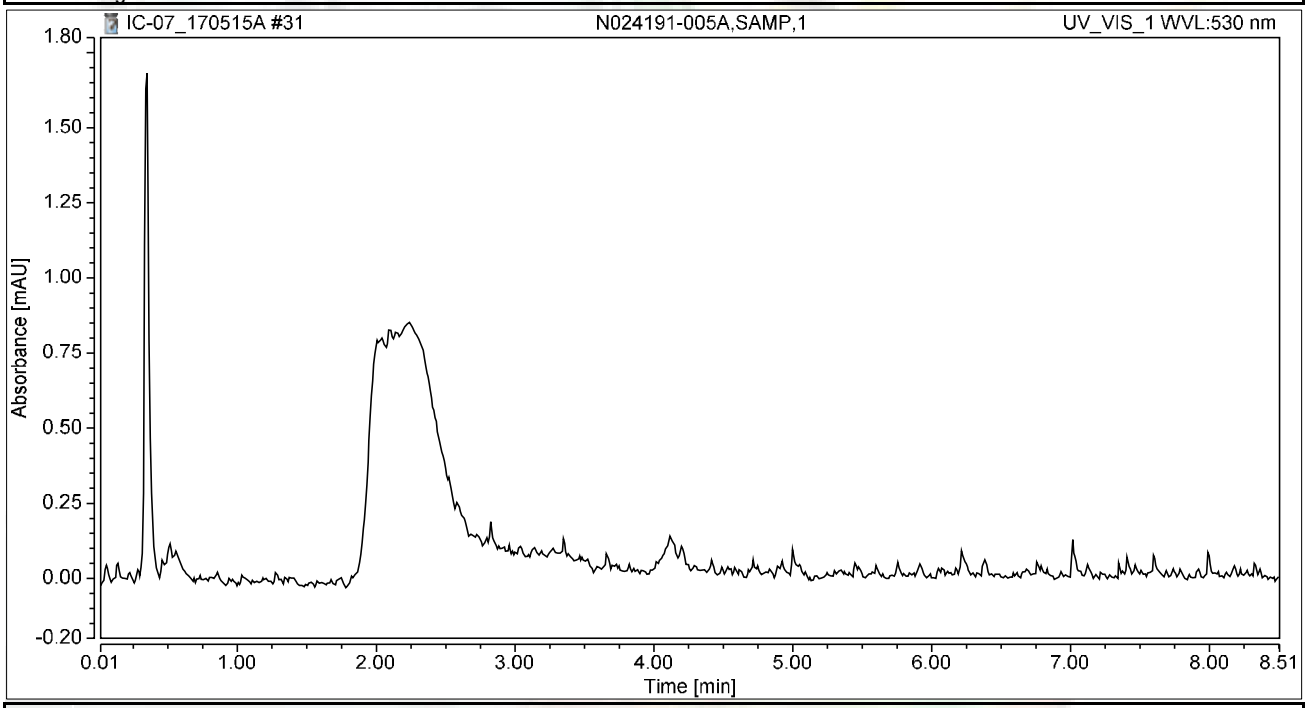
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-005A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

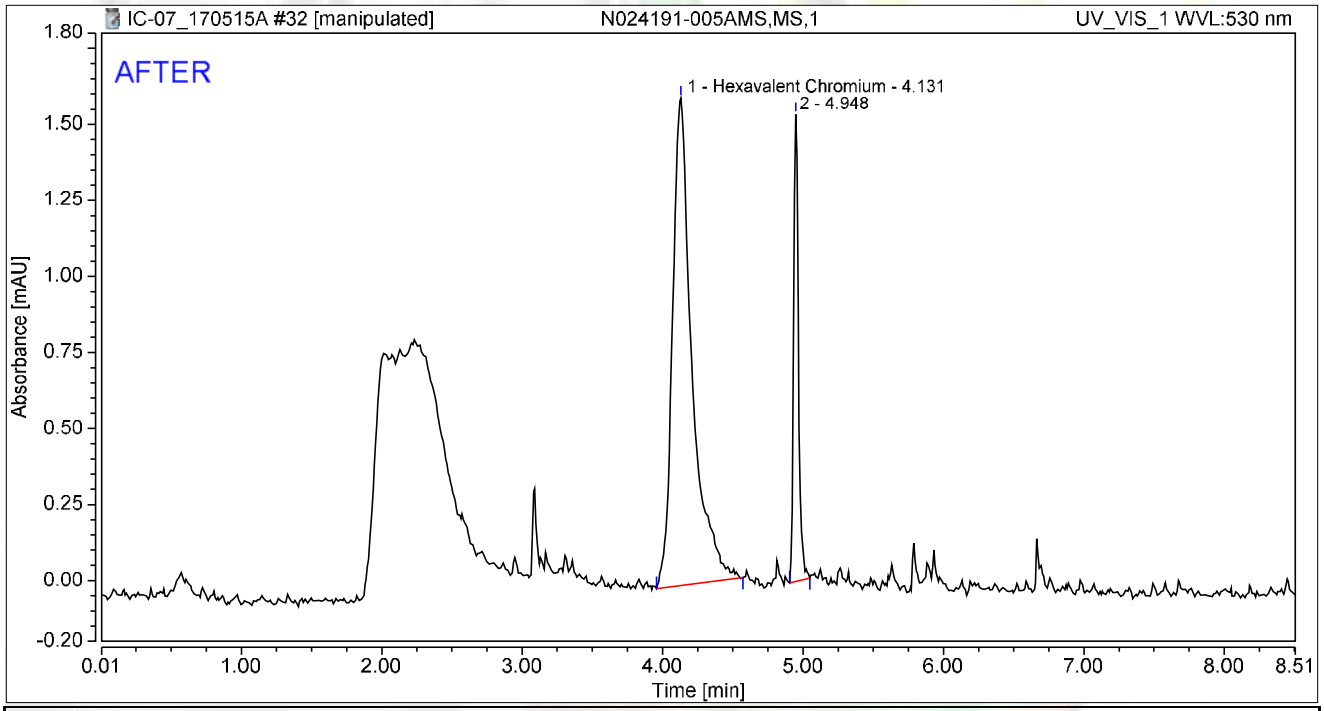
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.258	1.603	80.97	51.07	1.0589
2		4.948	0.061	1.535	19.03	48.93	n.a.
Total:			**0.319**	**3.138**	**100.00**	**100.00**	

rba 5/17/2017

Reviewed by: Nancy 5/25/2017
My first report/Integration

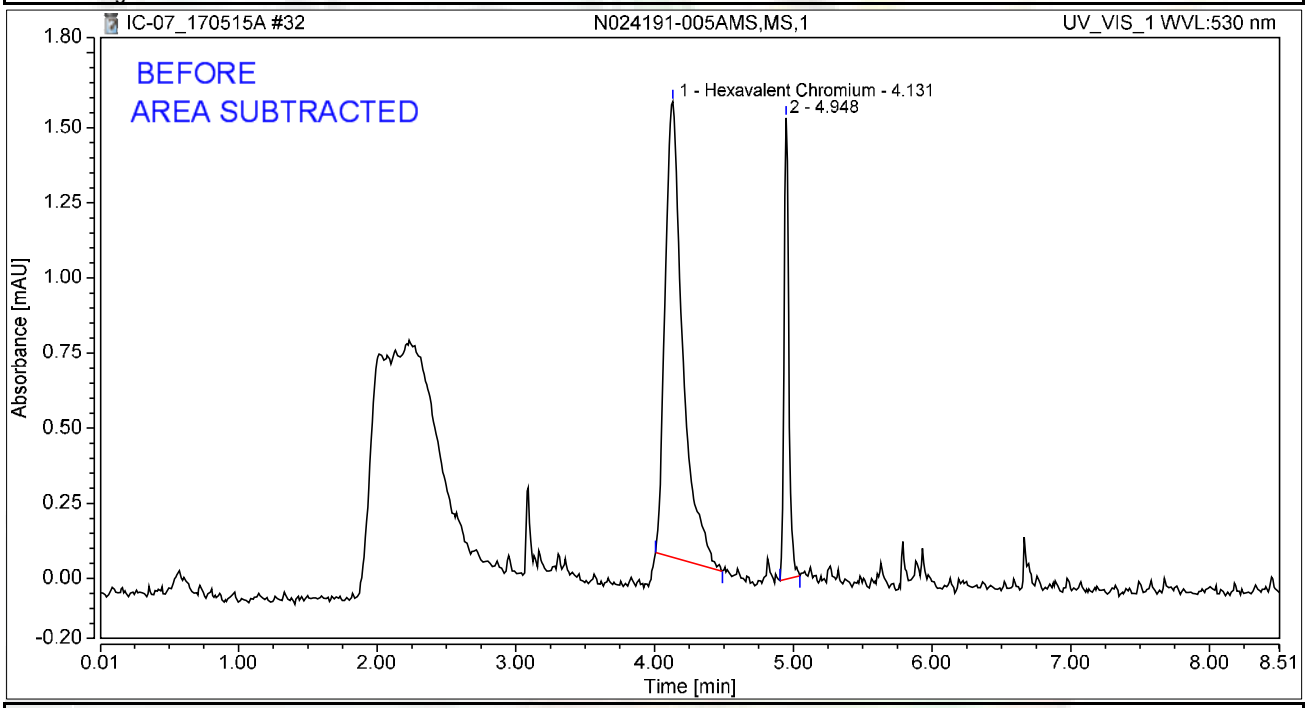
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024191-005AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:30**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.224	1.517	78.68	49.69	0.9189
2		4.948	0.061	1.535	21.32	50.31	n.a.
Total:			**0.285**	**3.052**	**100.00**	**100.00**	

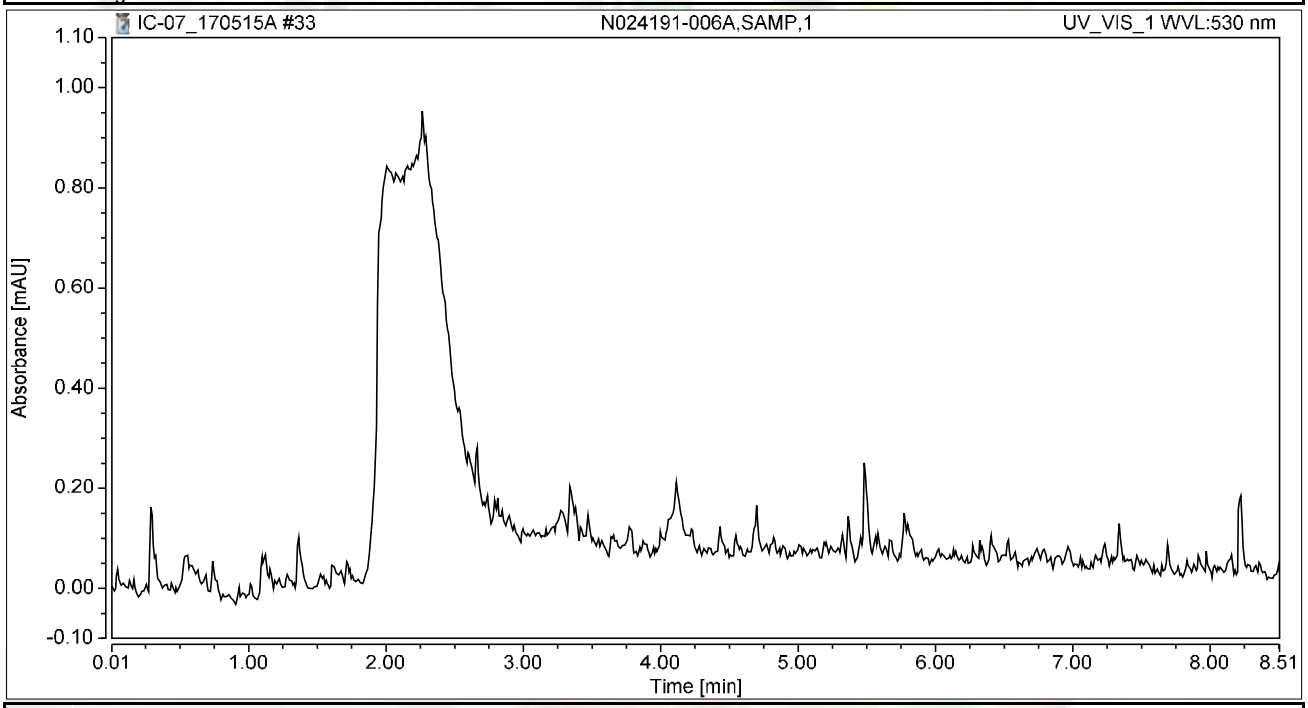
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-006A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

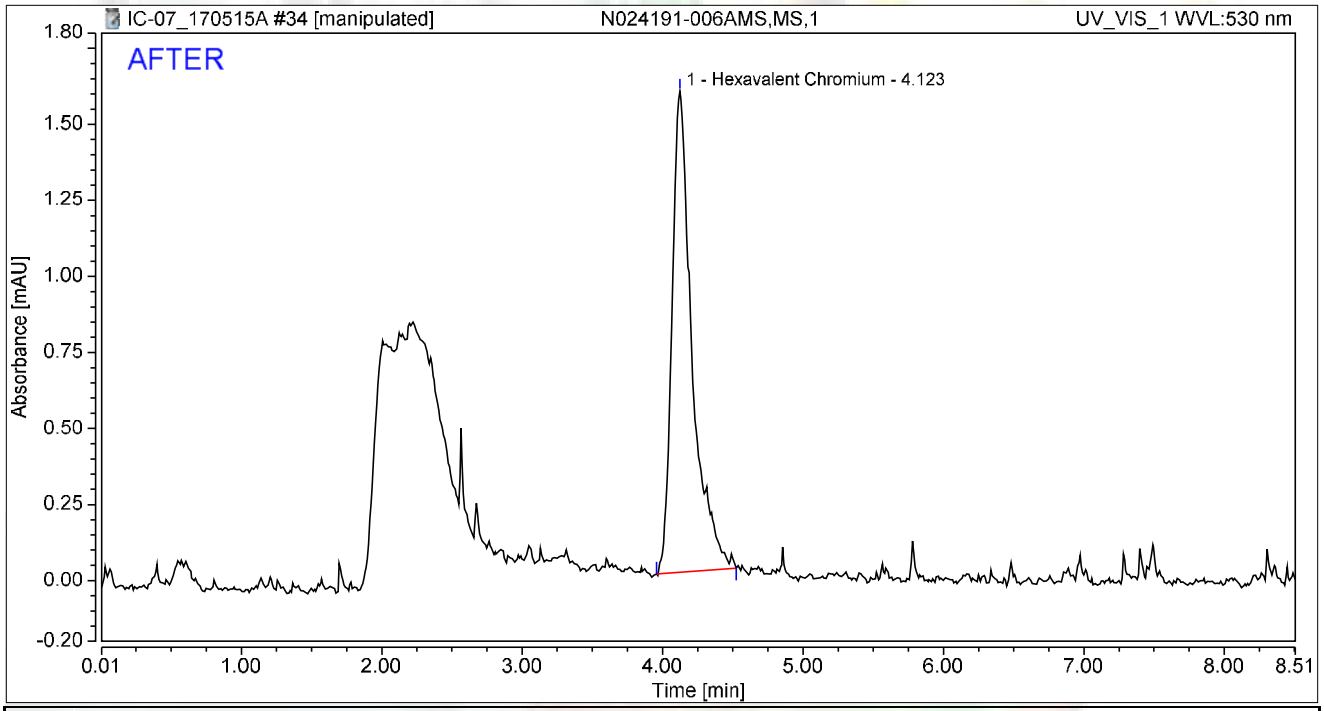
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.263	1.582	100.00	100.00	1.0765
Total:			**0.263**	**1.582**	**100.00**	**100.00**	

rba 5/17/2017

Reviewed
My first report/Integration
by: Nancy 5/25/2017

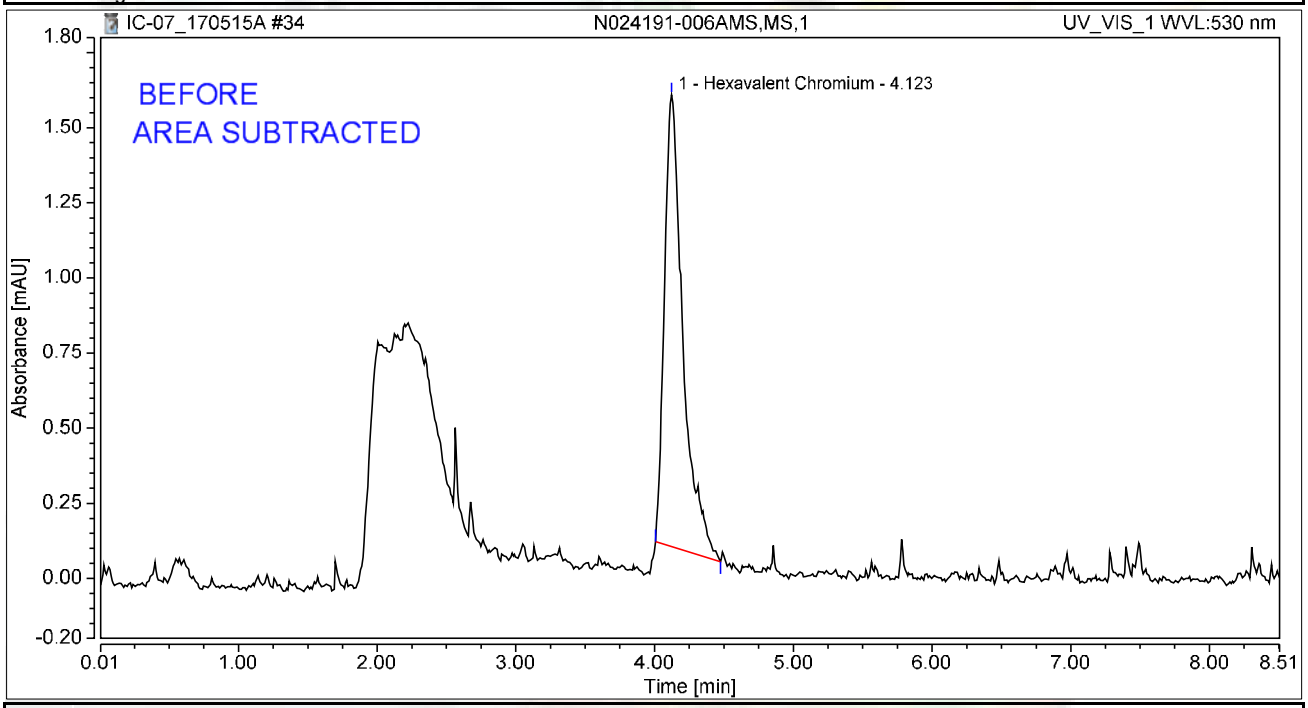
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024191-006AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**24**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.232	1.503	100.00	100.00	0.9525
Total:			**0.232**	**1.503**	**100.00**	**100.00**	

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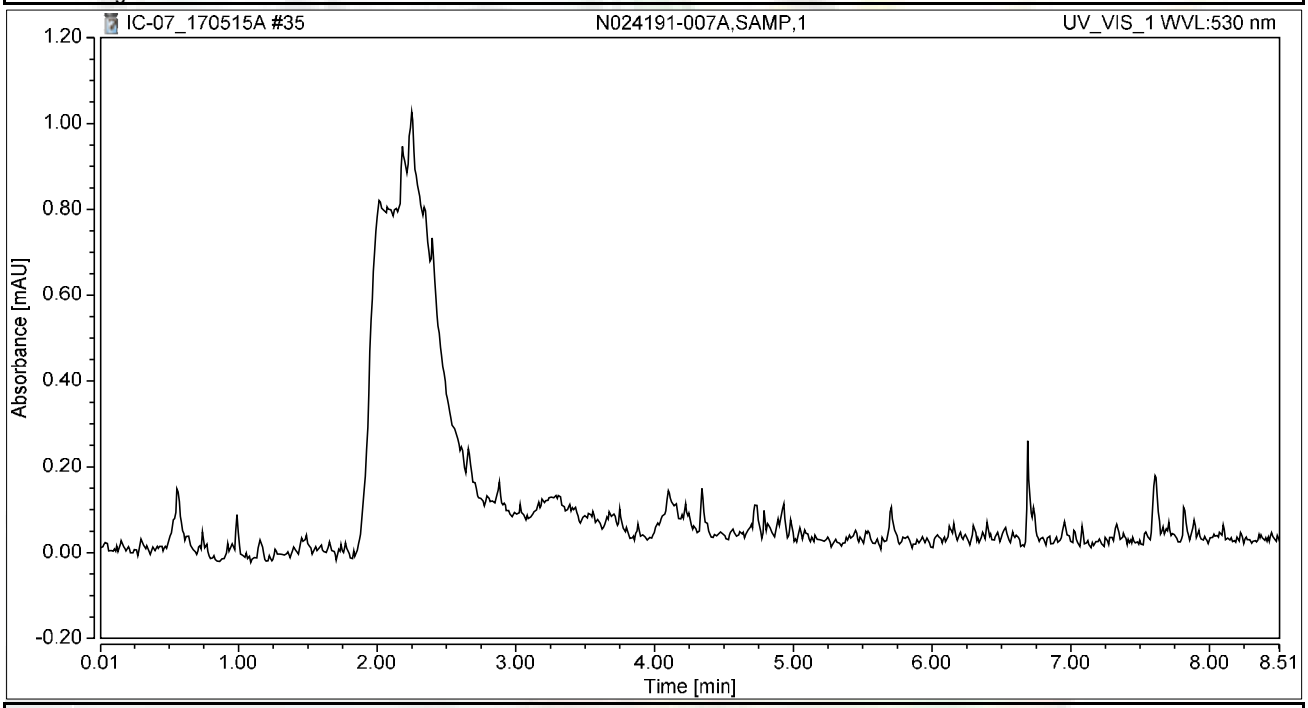
Chromatogram and Results

Injection Details

Injection Name:	**N024191-007A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 12:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

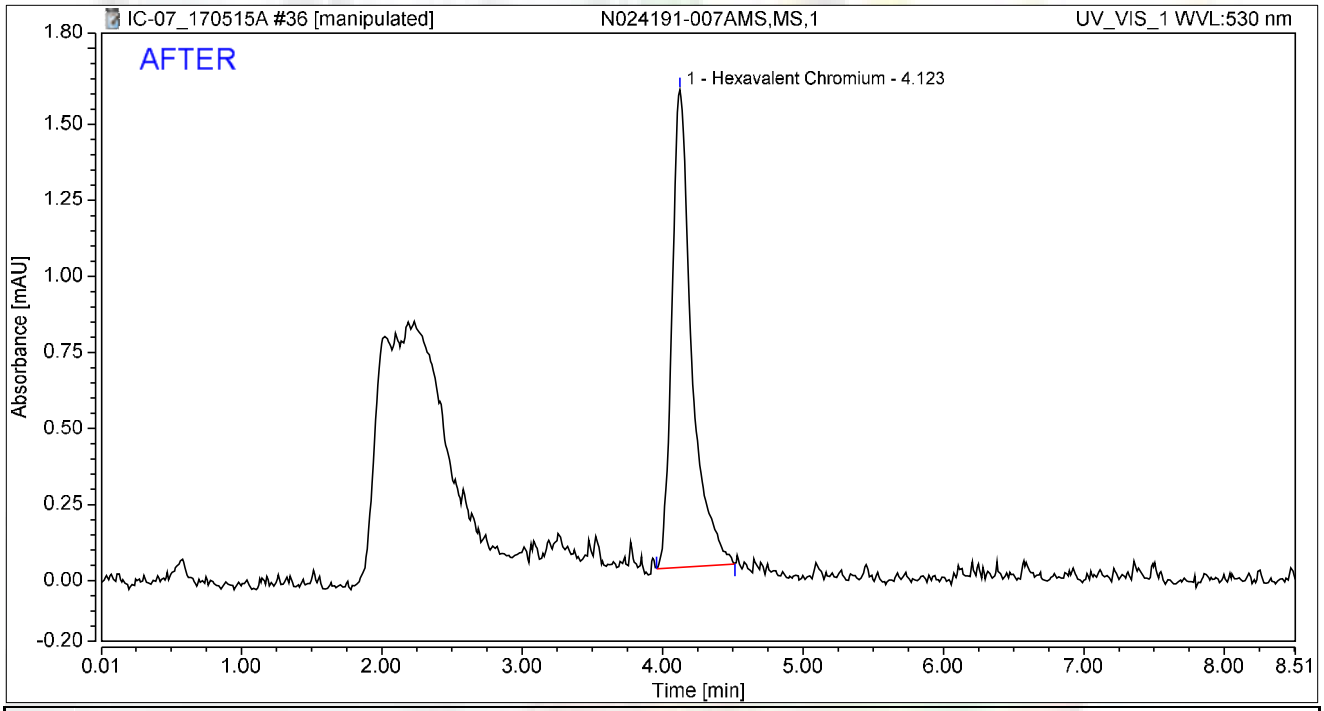
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.257	1.570	100.00	100.00	1.0536
Total:			**0.257**	**1.570**	**100.00**	**100.00**	

rba 5/17/2017

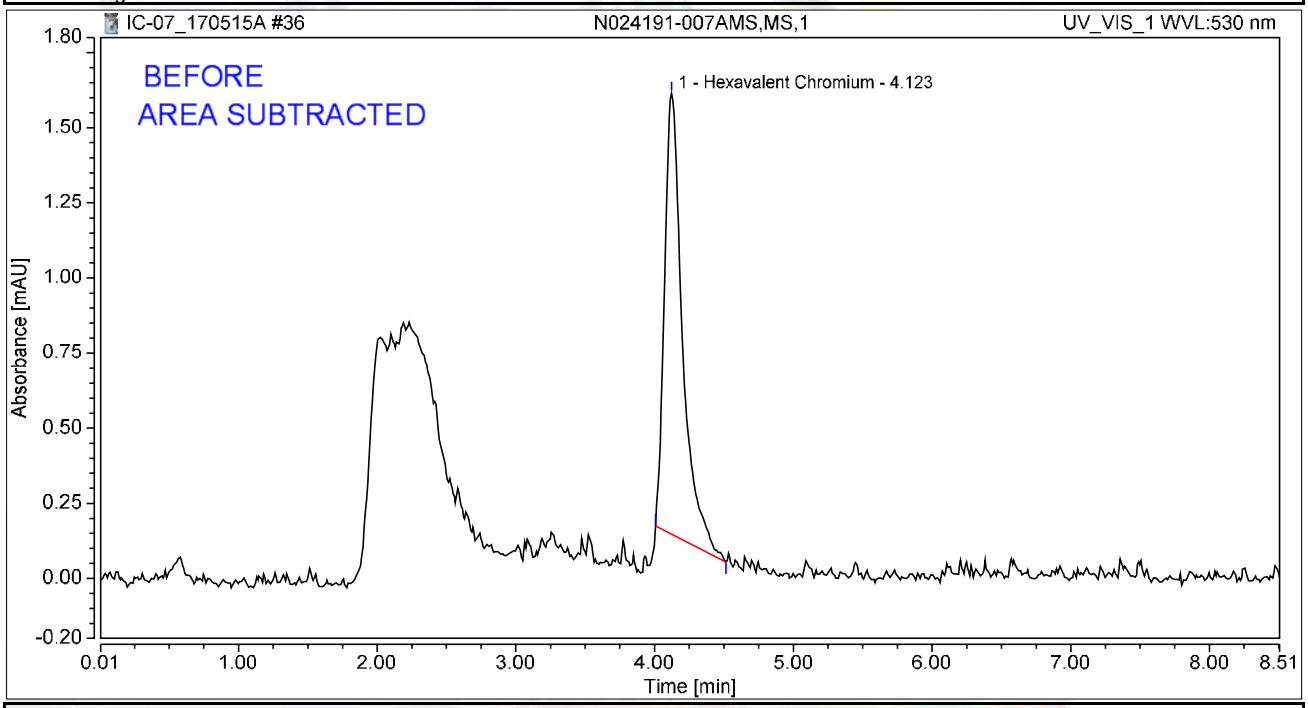
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-007AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.221	1.467	100.00	100.00	0.9057
Total:			**0.221**	**1.467**	**100.00**	**100.00**	

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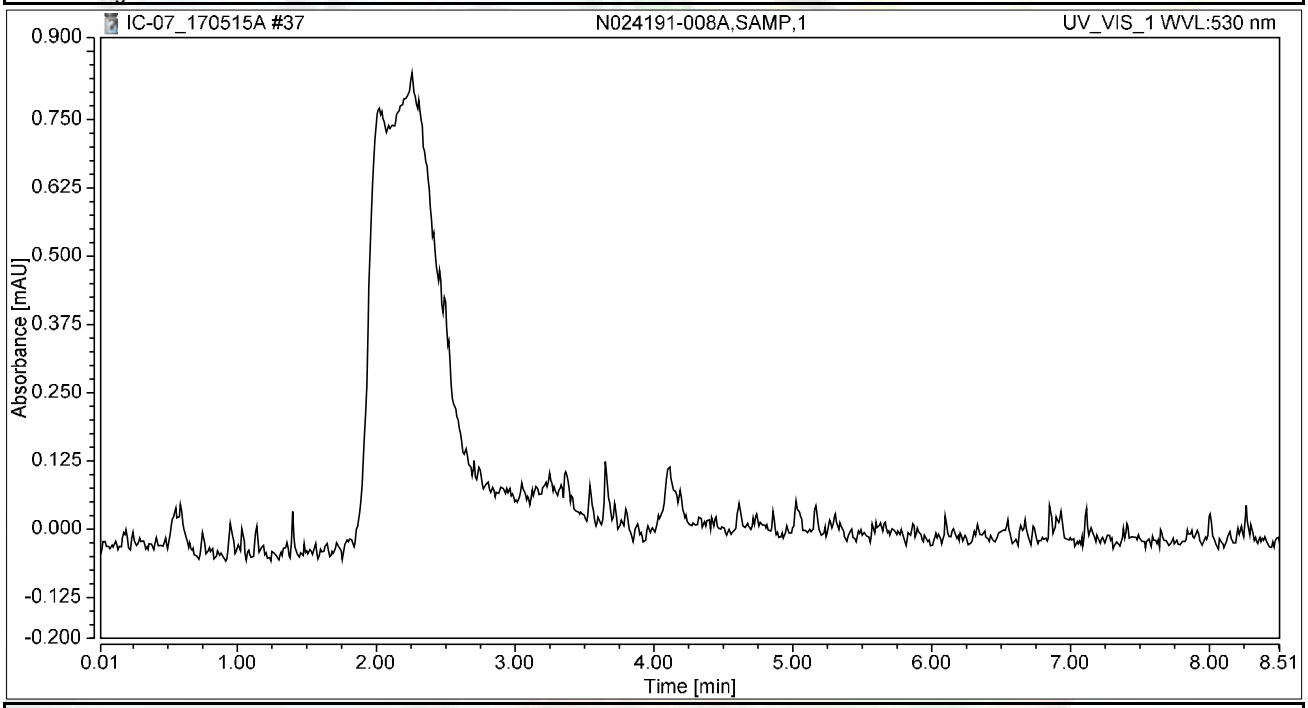
Chromatogram and Results

Injection Details

Injection Name:	**N024191-008A,SAMP,1**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

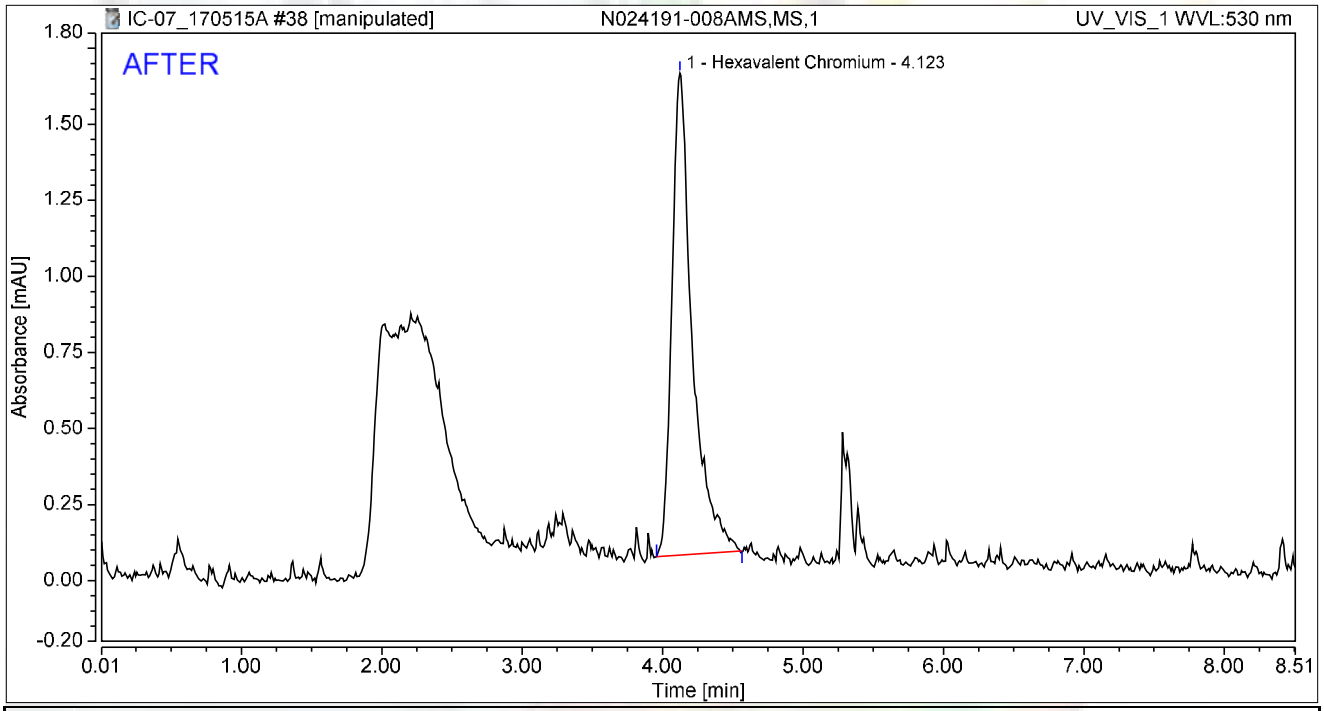
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.267	1.584	100.00	100.00	1.0954
Total:			**0.267**	**1.584**	**100.00**	**100.00**	

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My first report/Integration

Reviewed by: Nancy 5/25/2017

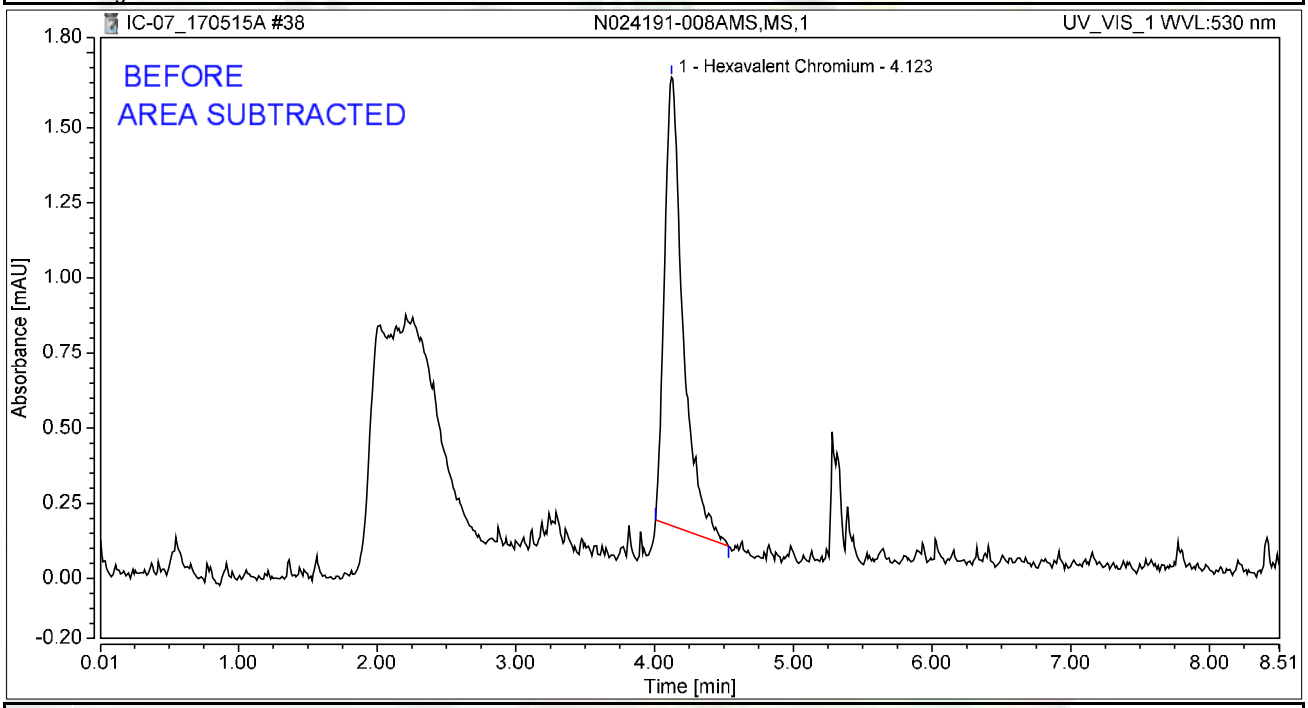
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024191-008AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.232	1.493	100.00	100.00	0.9509
Total:			**0.232**	**1.493**	**100.00**	**100.00**	

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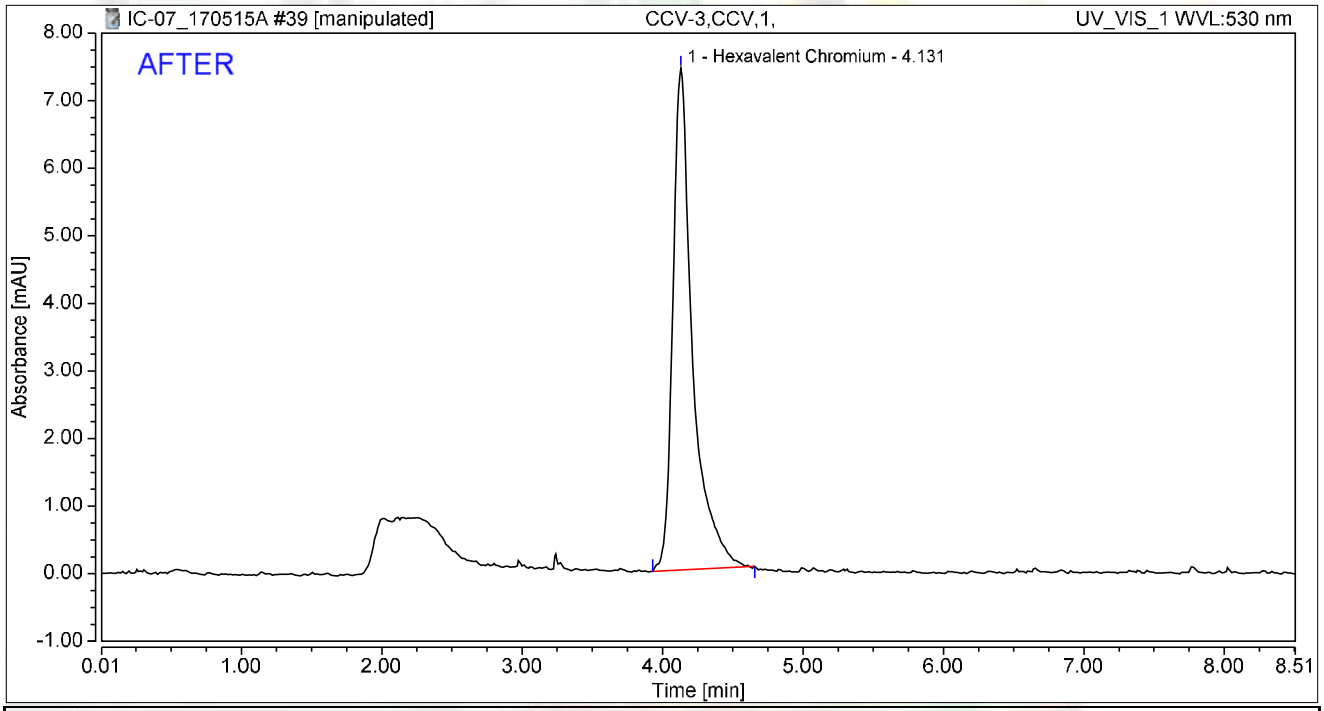
Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.207	7.425	100.00	100.00	4.9477
Total:			**1.207**	**7.425**	**100.00**	**100.00**	

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by nancy 5/25/2017

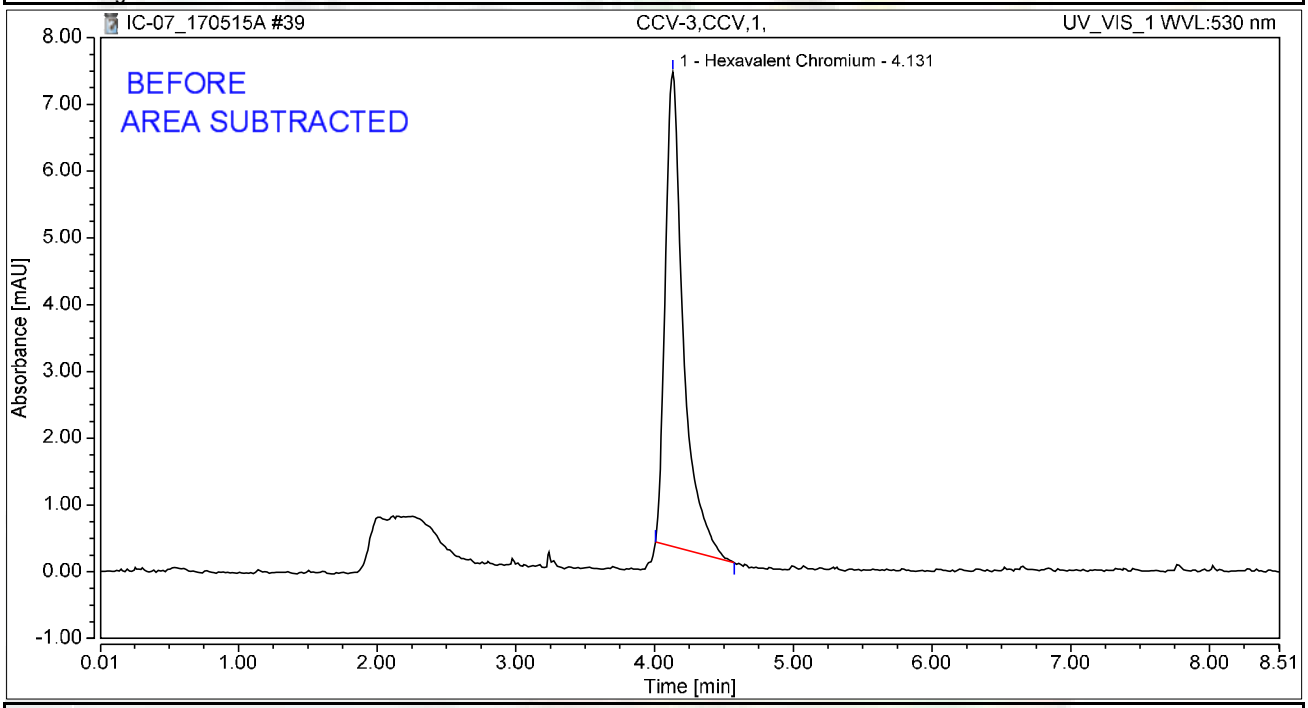
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**29**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:36**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.075	7.108	100.00	100.00	4.4086
Total:			**1.075**	**7.108**	**100.00**	**100.00**	

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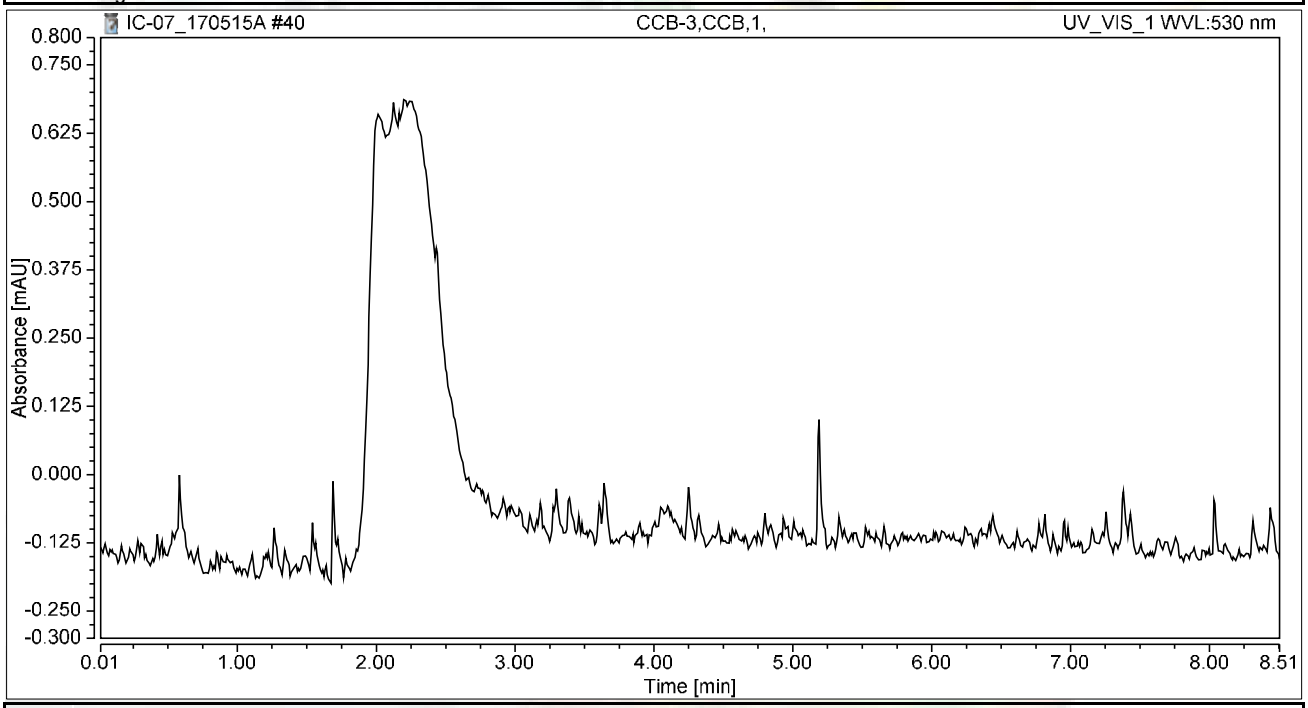
Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:45**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

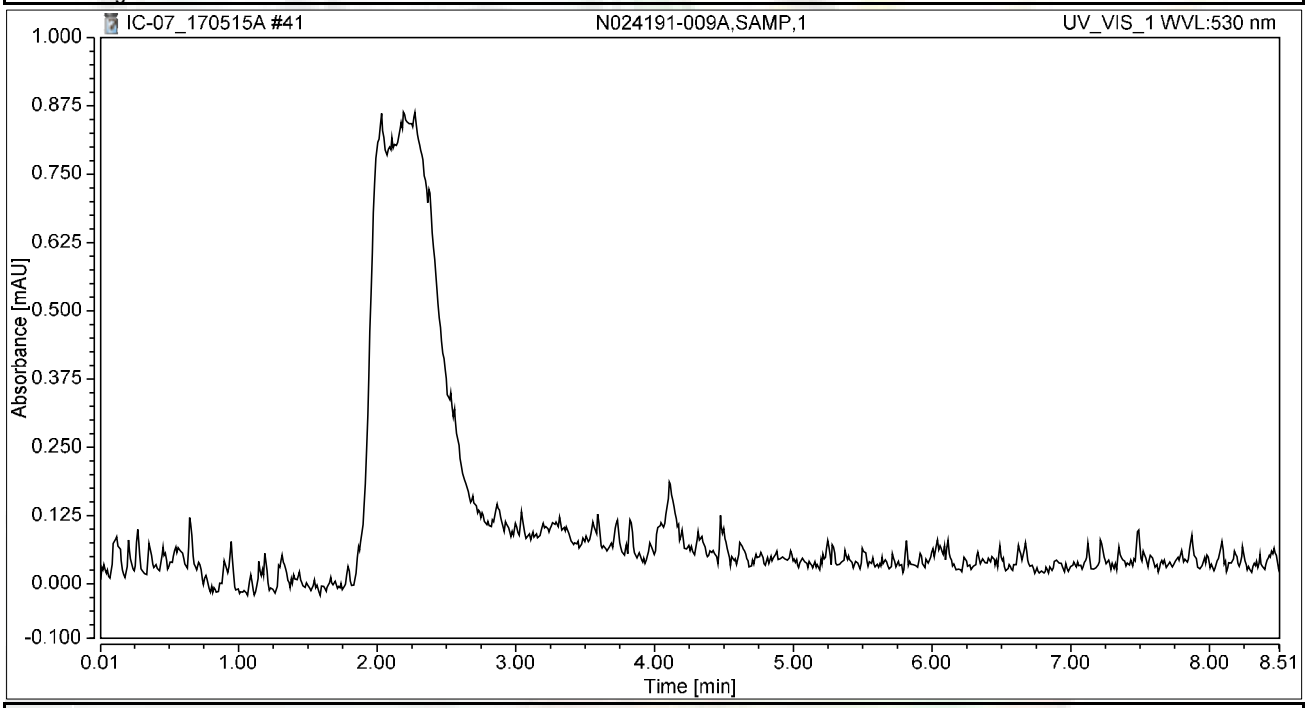
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-009A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 13:55**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

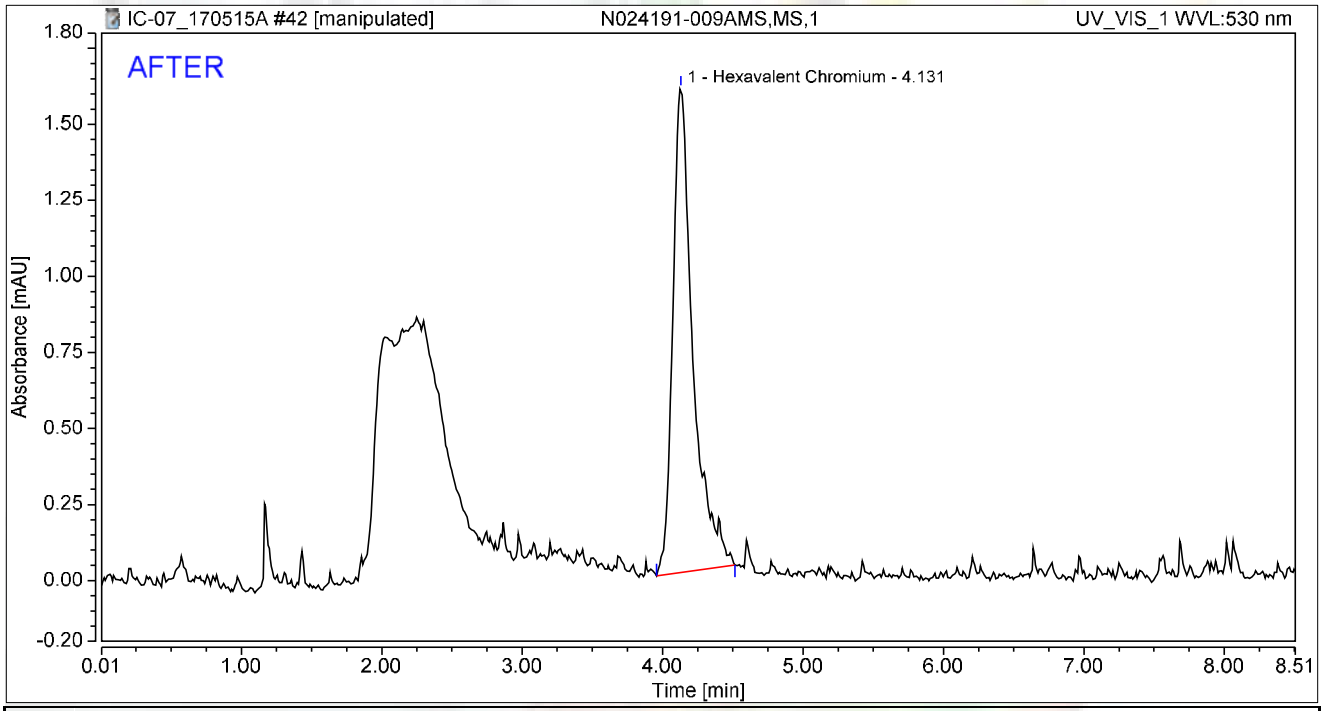
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.266	1.592	100.00	100.00	1.0895
Total:			**0.266**	**1.592**	**100.00**	**100.00**	

rba 5/17/2017

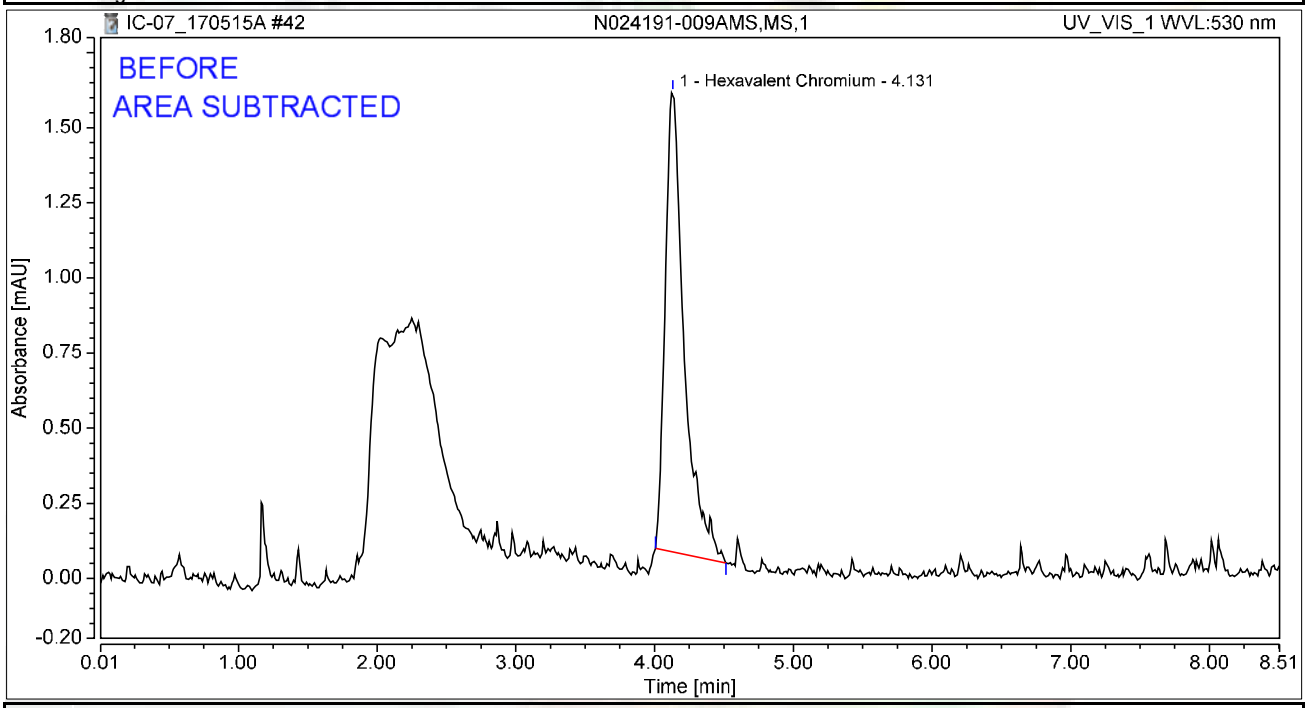
Reviewed by: Nancy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-009AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**32**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:04**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.243	1.531	100.00	100.00	0.9967
Total:			**0.243**	**1.531**	**100.00**	**100.00**	

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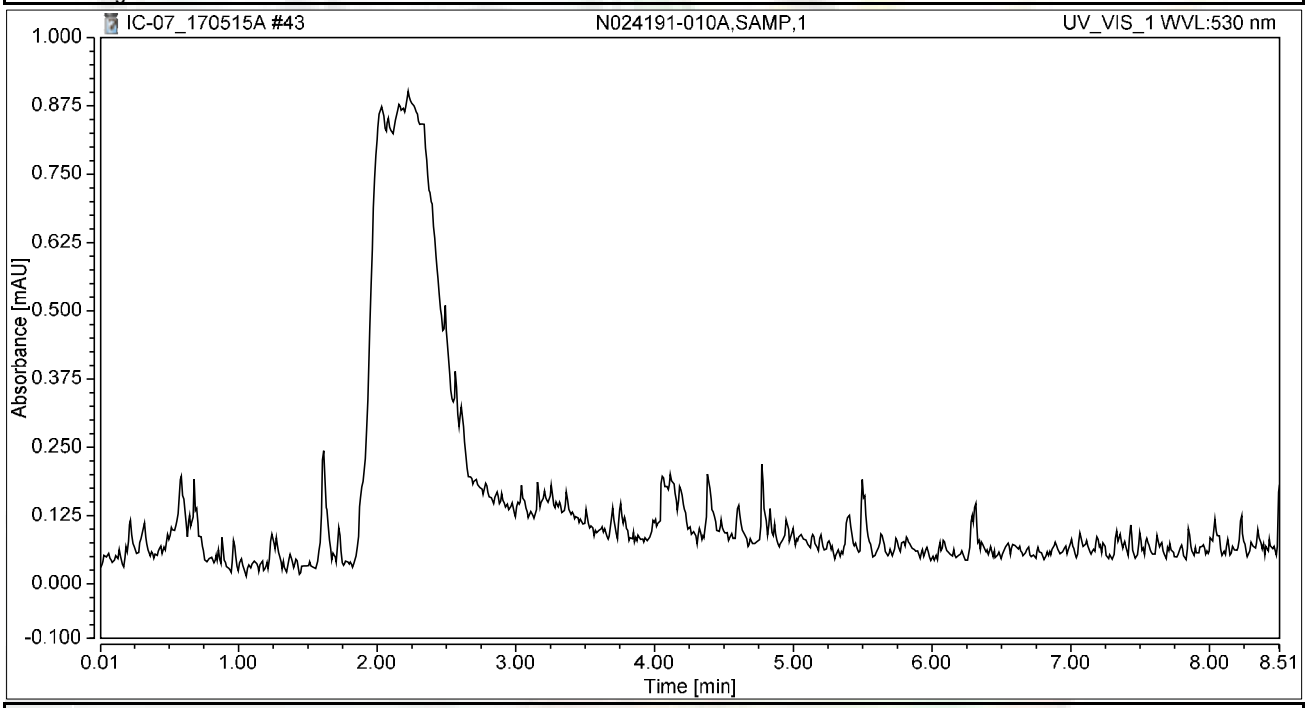
Chromatogram and Results

Injection Details

Injection Name:	**N024191-010A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**33**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:14**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

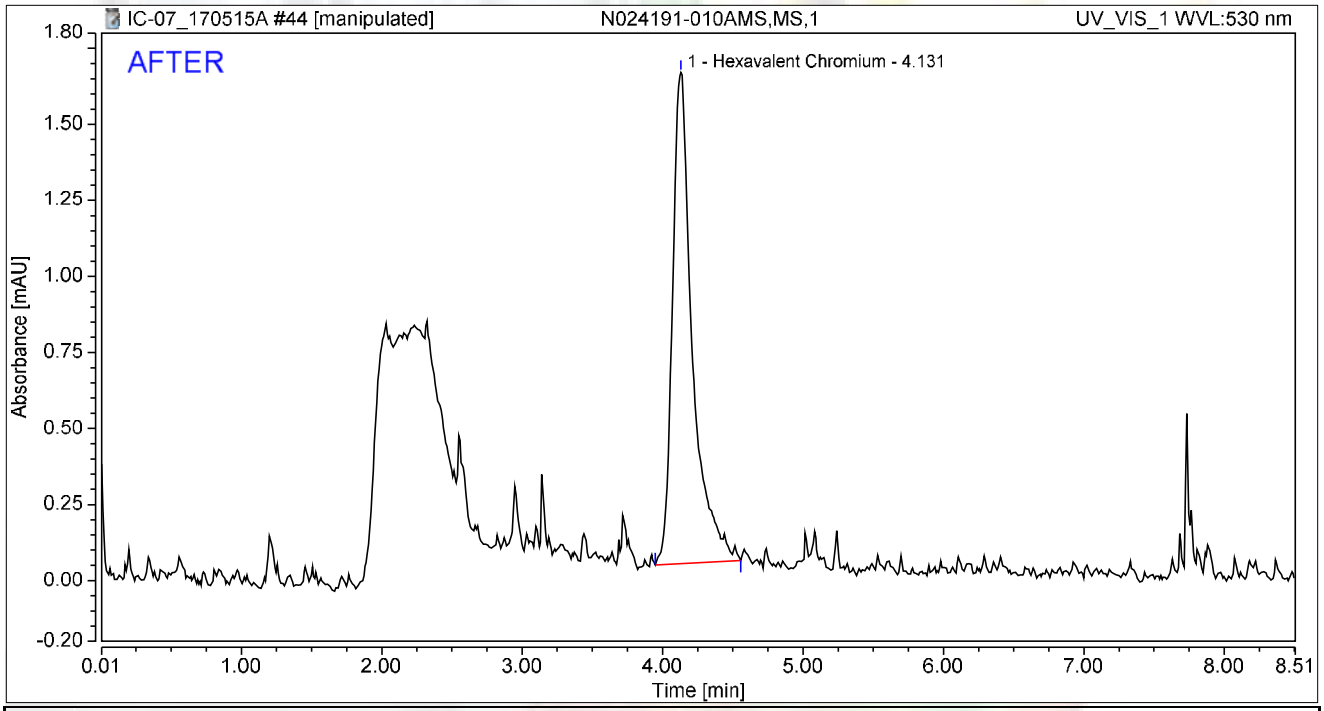
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.266	1.614	100.00	100.00	1.0900
Total:			**0.266**	**1.614**	**100.00**	**100.00**	

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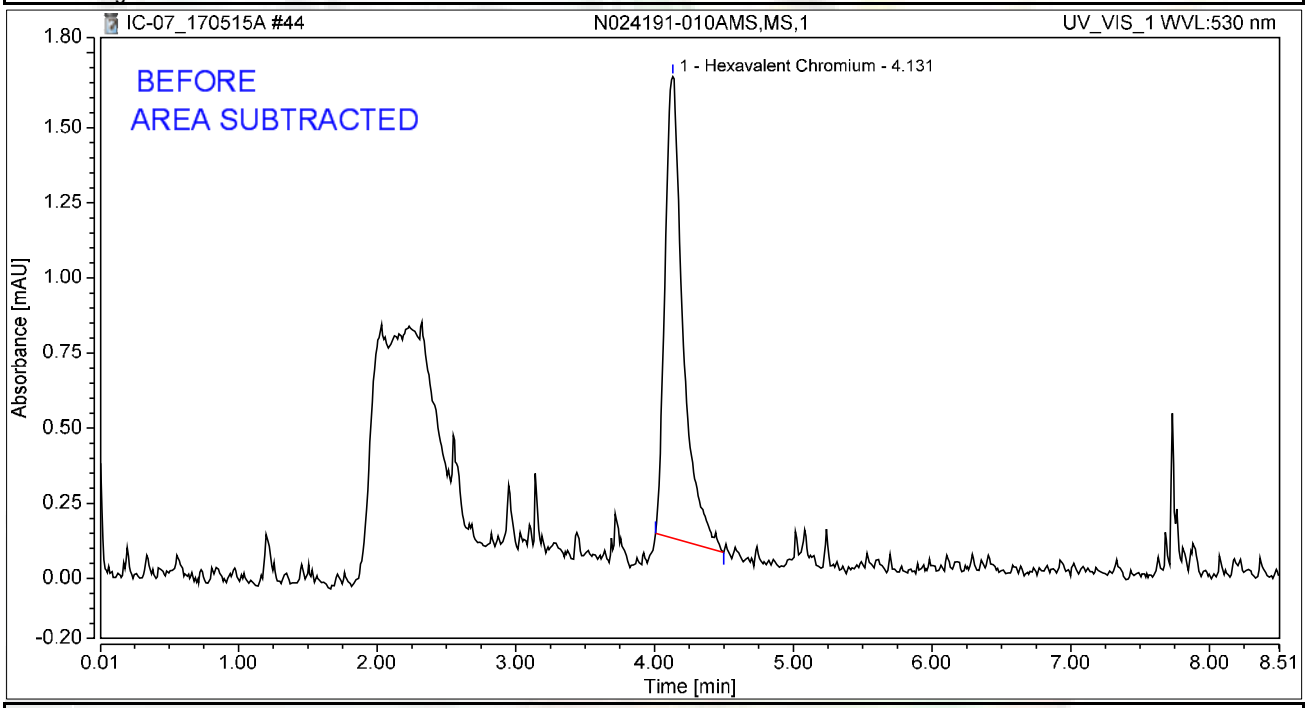
Chromatogram and Results

Injection Details

Injection Name:	**N024191-010AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**34**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:23**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.233	1.536	100.00	100.00	0.9564
Total:			**0.233**	**1.536**	**100.00**	**100.00**	

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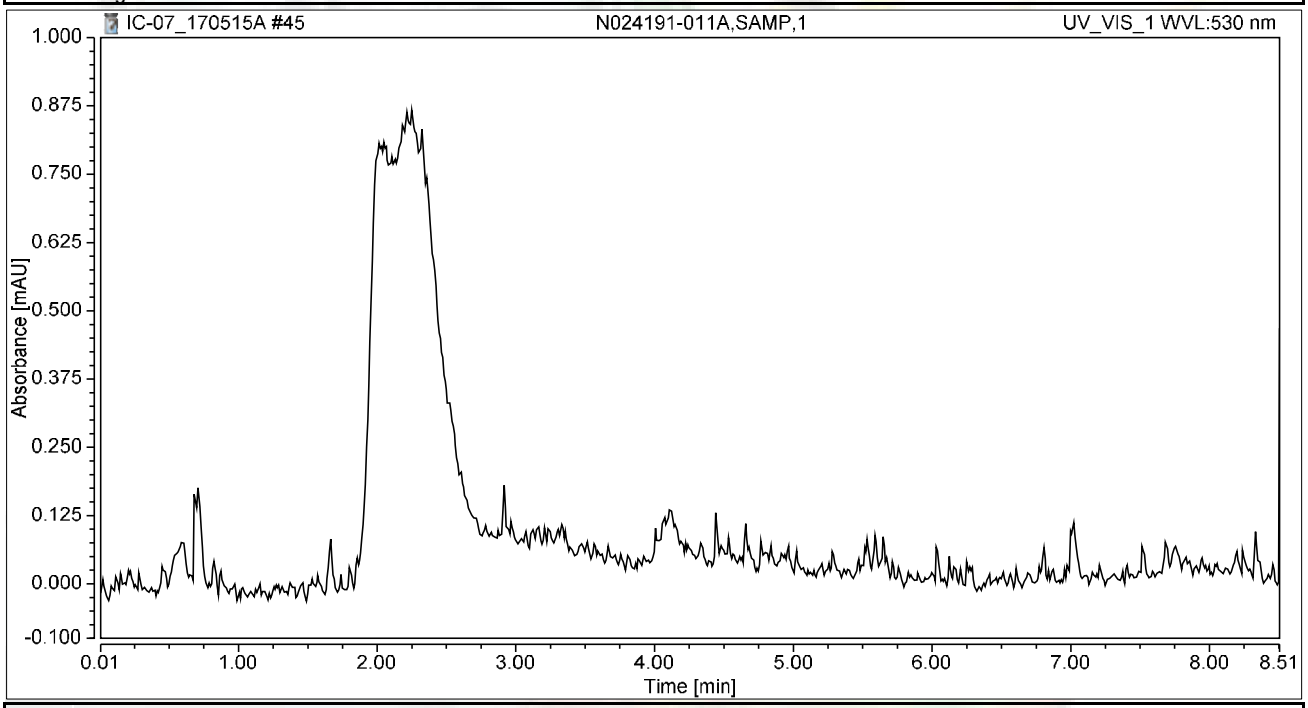
Chromatogram and Results

Injection Details

Injection Name:	**N024191-011A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**35**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

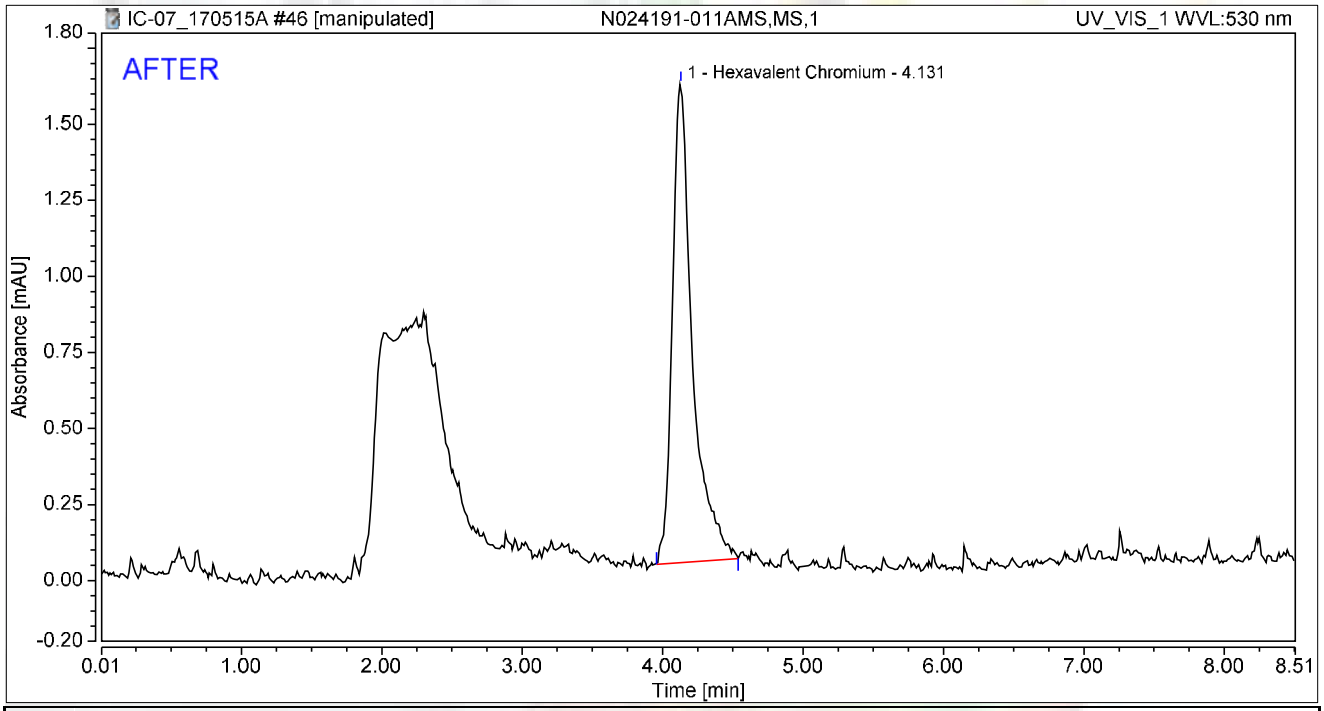
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.261	1.575	100.00	100.00	1.0717
Total:			**0.261**	**1.575**	**100.00**	**100.00**	

rba 5/17/2017

Reviewed
My list report/Integration
by Nancy 5/25/2017

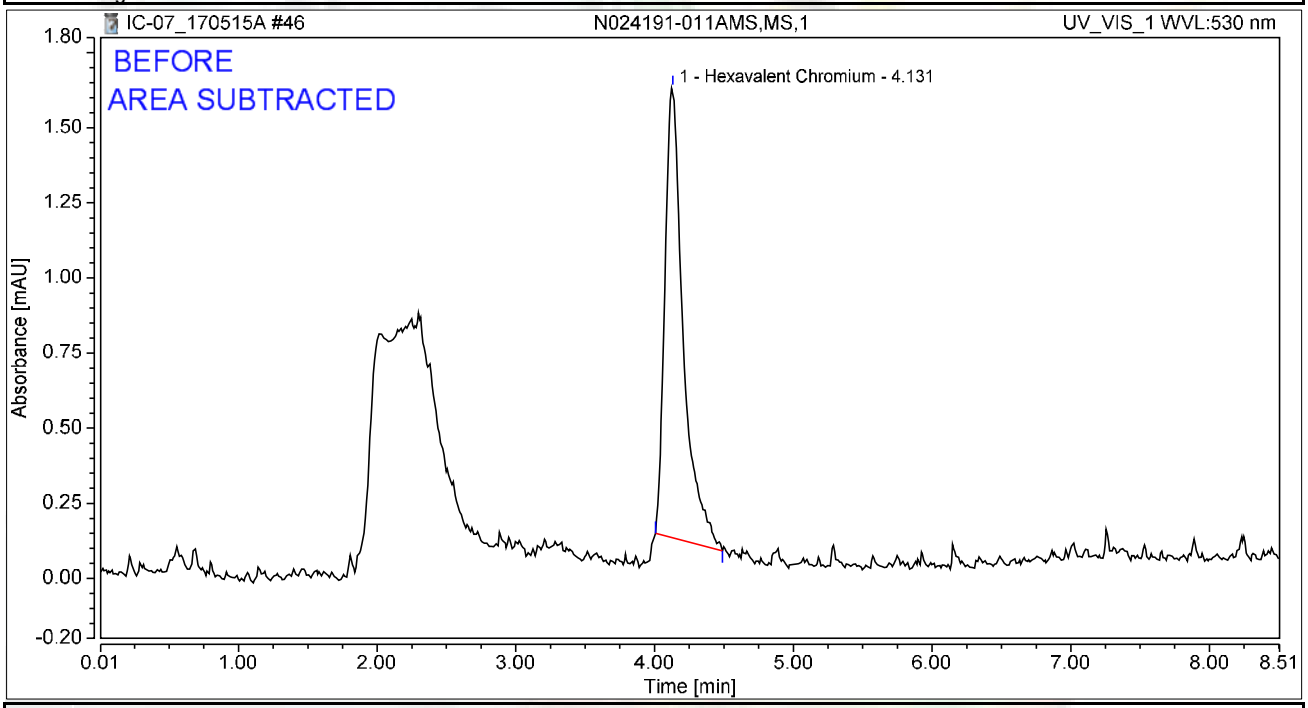
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024191-011AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**36**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:42**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.230	1.499	100.00	100.00	0.9421
Total:			**0.230**	**1.499**	**100.00**	**100.00**	

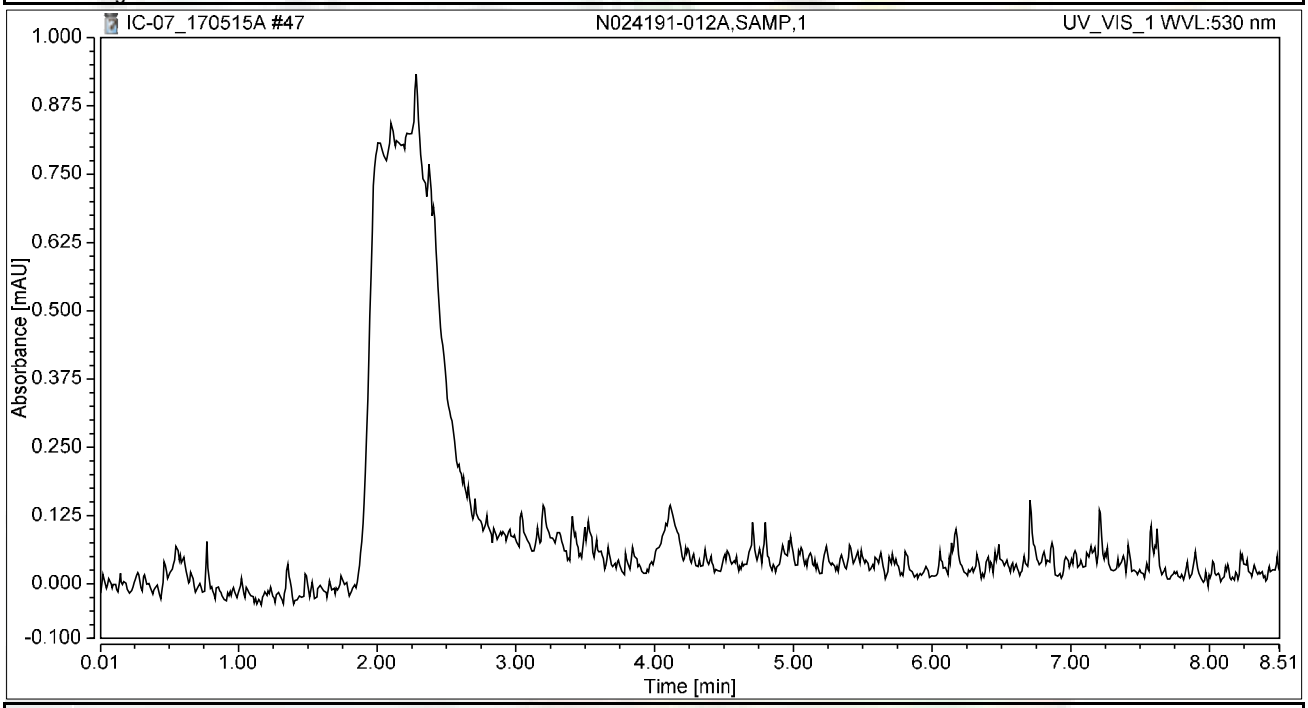
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-012A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**37**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 14:52**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

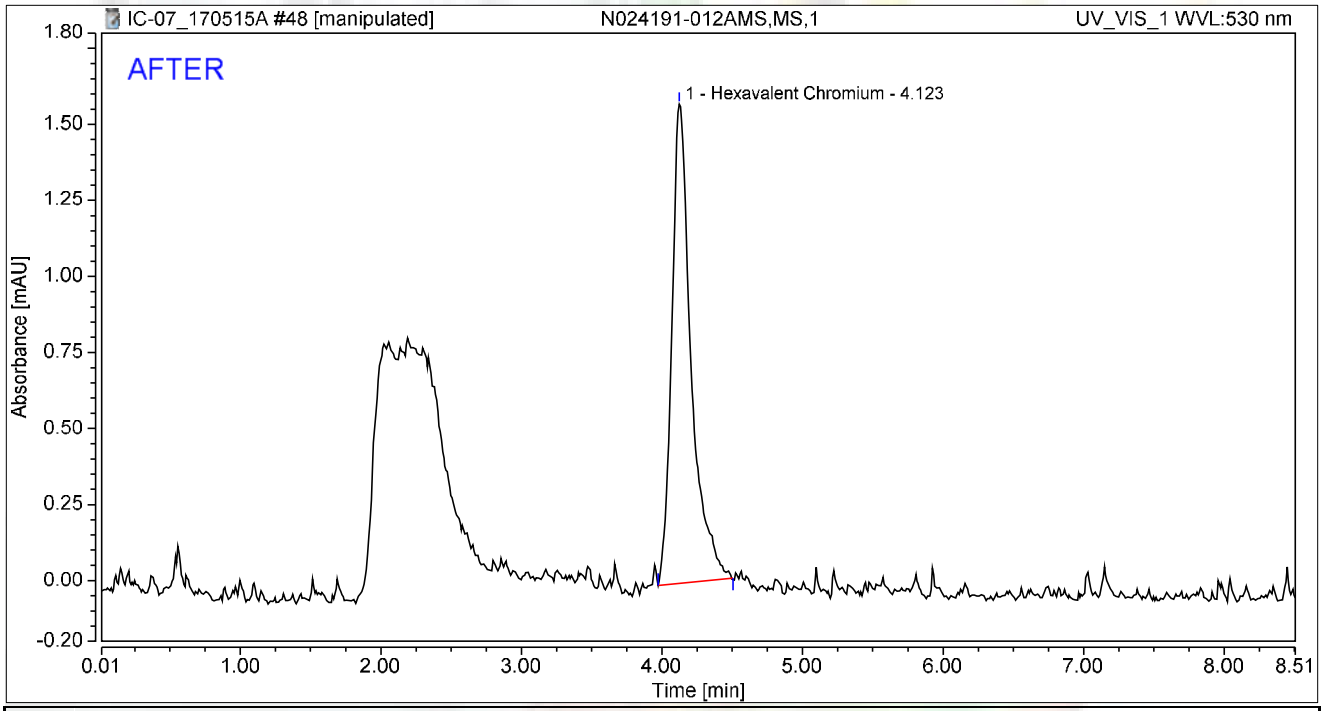
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-012AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.252	1.575	100.00	100.00	1.0315
Total:			**0.252**	**1.575**	**100.00**	**100.00**	

rba 5/17/2017

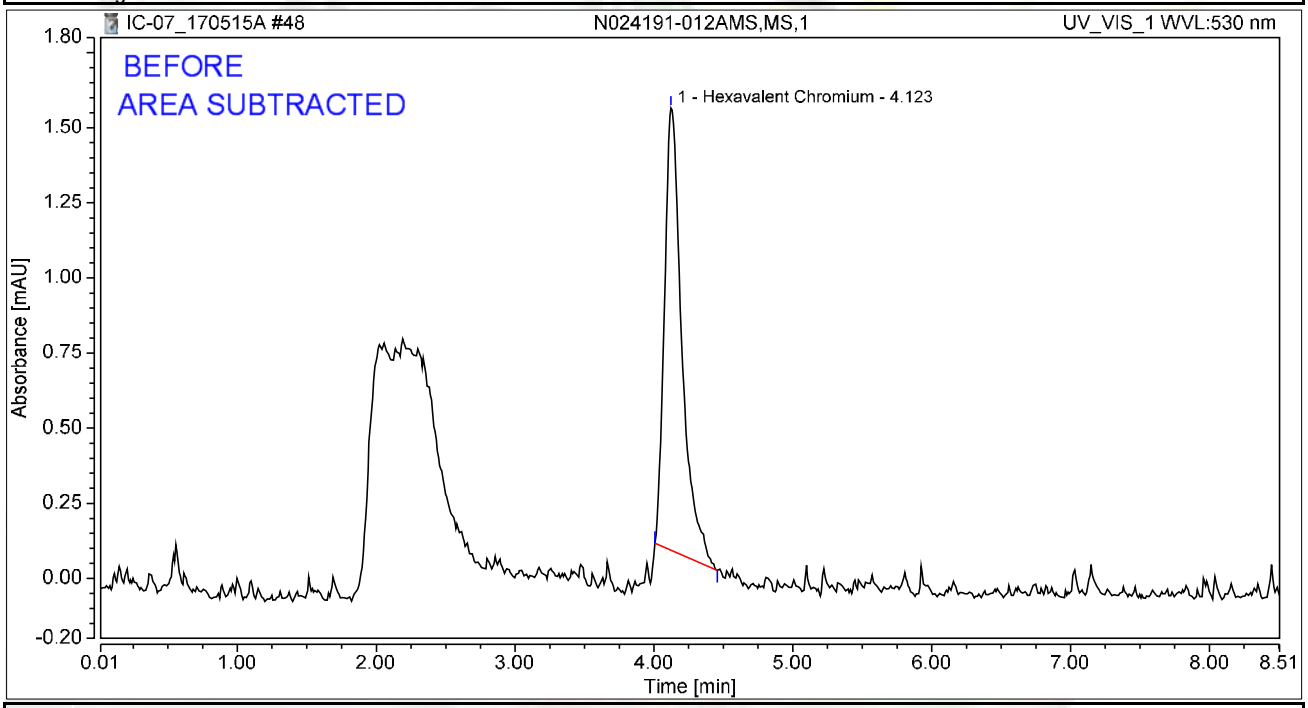
Reviewed by: Dr. Ivy 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-012AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**38**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:01**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.214	1.472	100.00	100.00	0.8792
Total:			**0.214**	**1.472**	**100.00**	**100.00**	

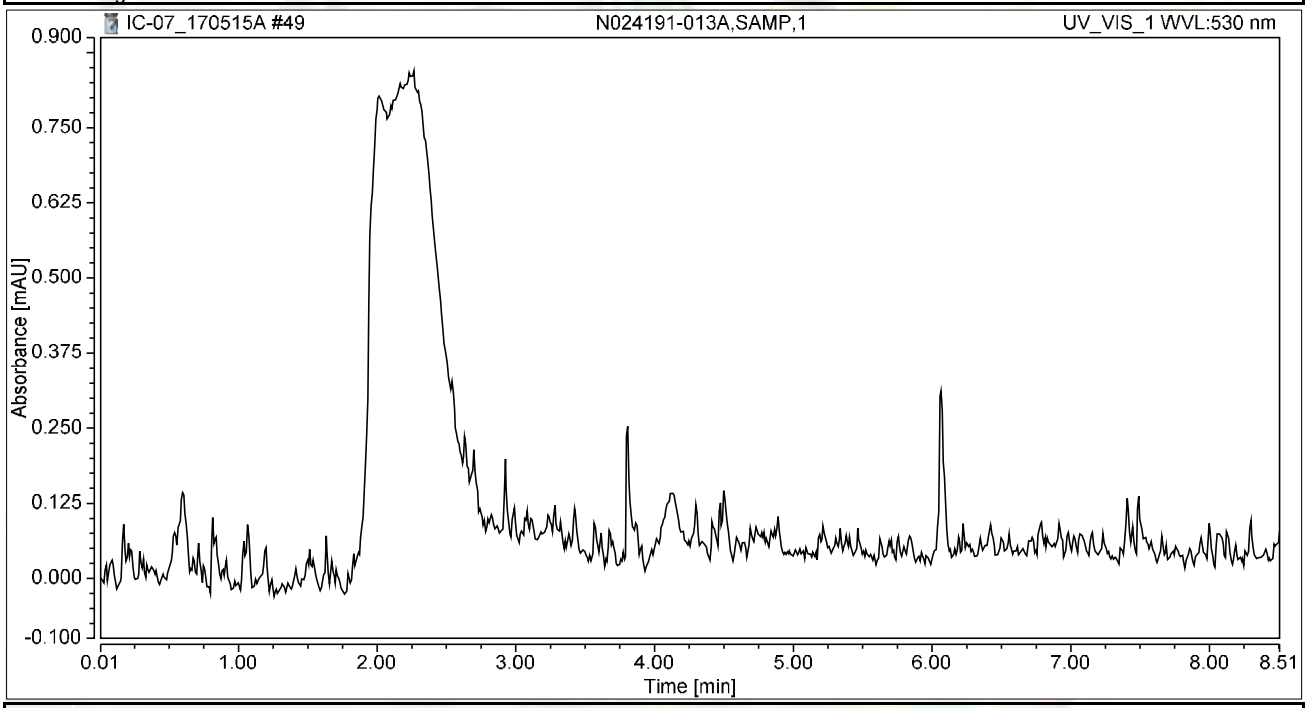
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-013A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**39**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:11**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

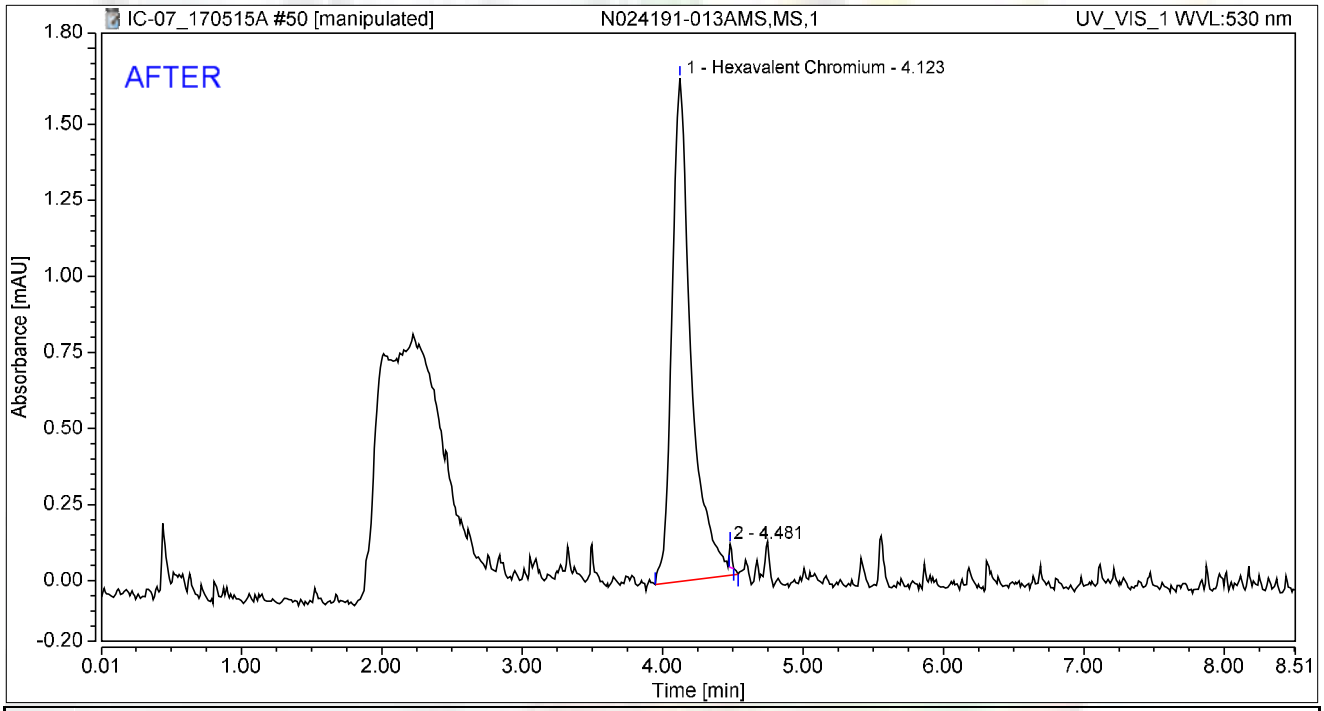
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.263	1.655	99.49	95.57	1.0798
2		4.481	0.001	0.077	0.51	4.43	n.a.
Total:			**0.265**	**1.731**	**100.00**	**100.00**	

rba 5/17/2017

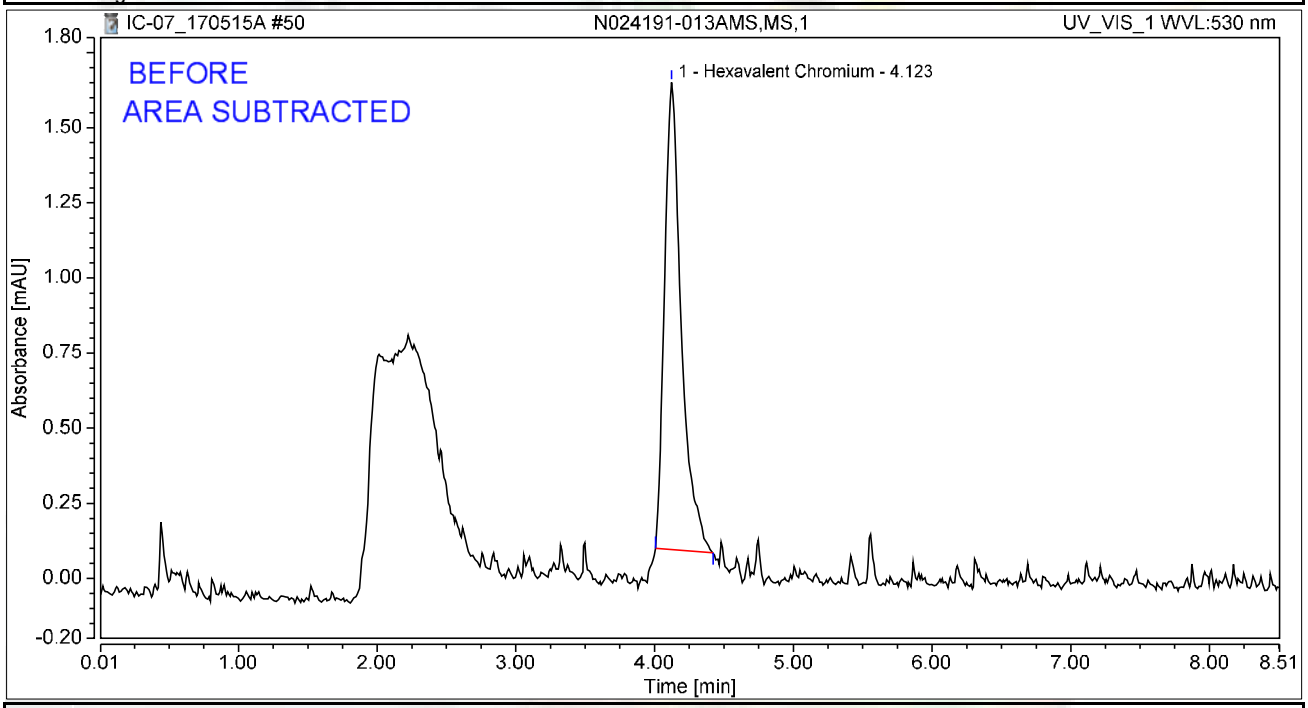
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-013AMS,MS,1**	*Run Time (min):*	**8.50**
Vial Number:	**40**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:20**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.123	0.218	1.555	100.00	100.00	0.8951
Total:			**0.218**	**1.555**	**100.00**	**100.00**	

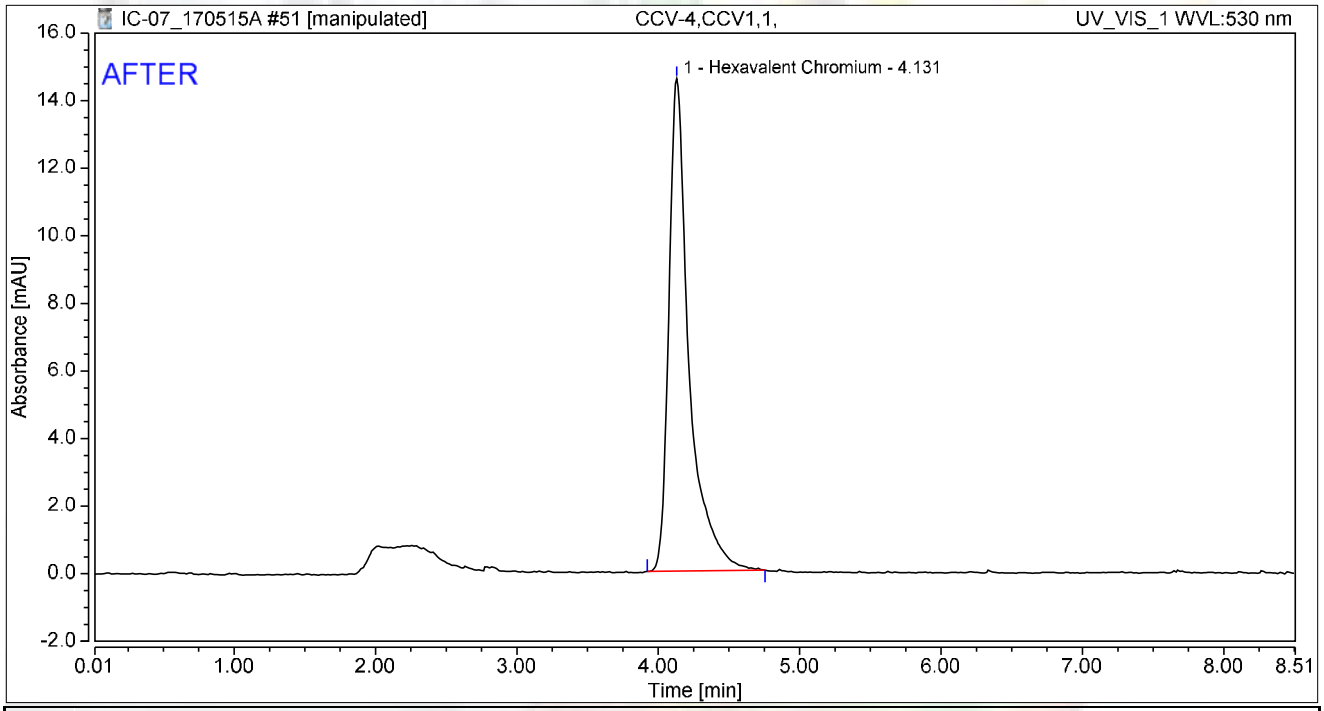
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.408	14.571	100.00	100.00	9.8741
Total:			**2.408**	**14.571**	**100.00**	**100.00**	

rba 5/17/2017

Reviewed by: 5/25/2017

My first report/Integration

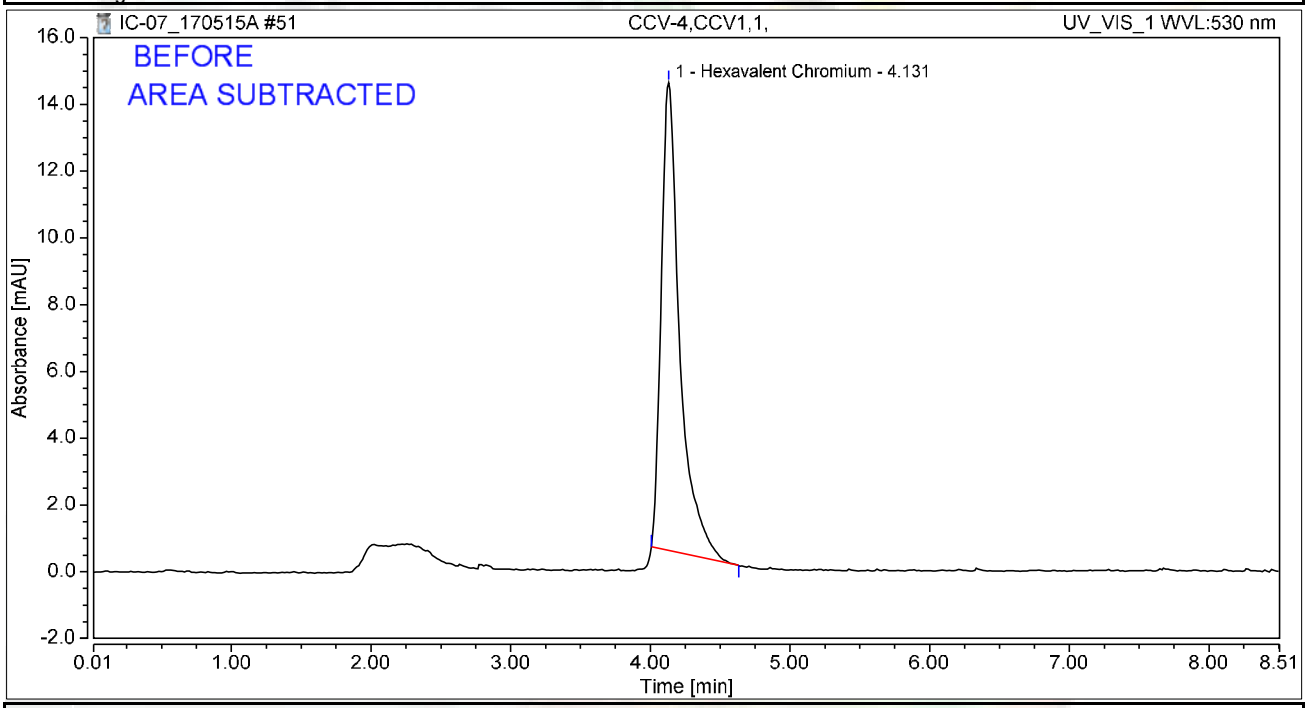
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**CCV-4,CCV1,1,**	*Run Time (min):*	**8.49**
Vial Number:	**41**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	2.160	14.024	100.00	100.00	8.8577
Total:			**2.160**	**14.024**	**100.00**	**100.00**	

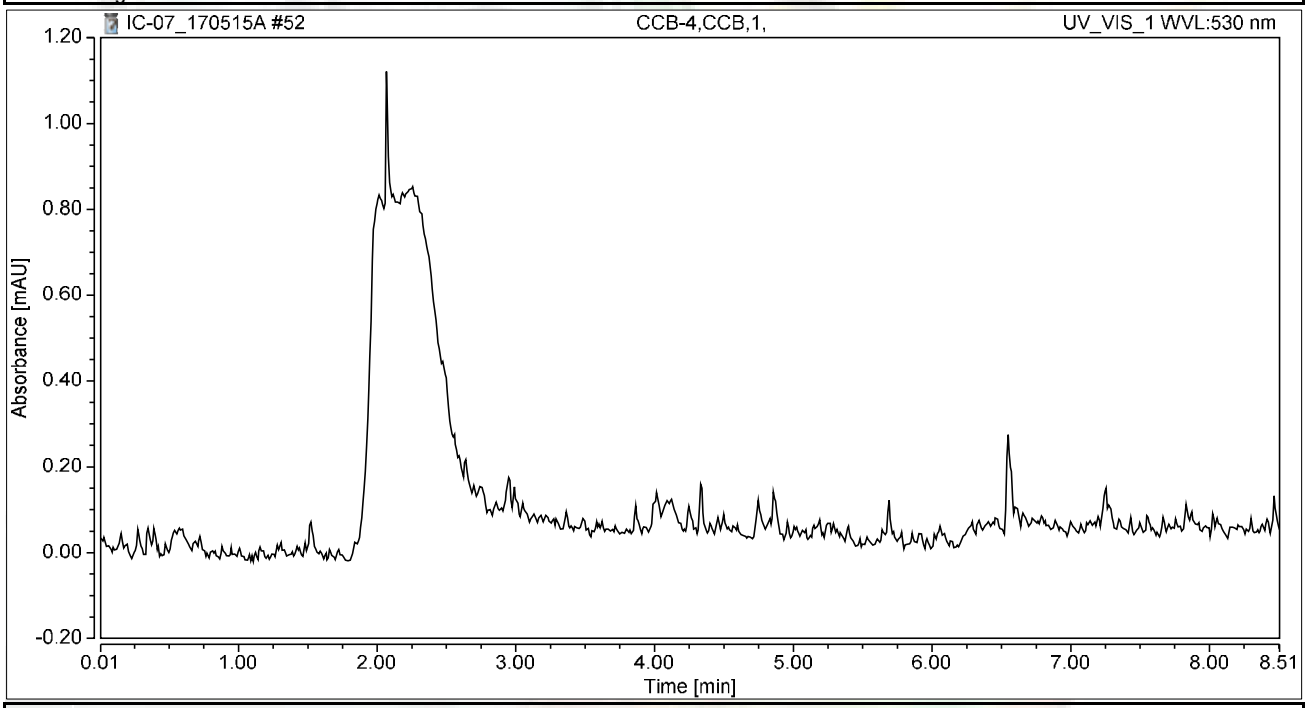
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-4,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**42**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

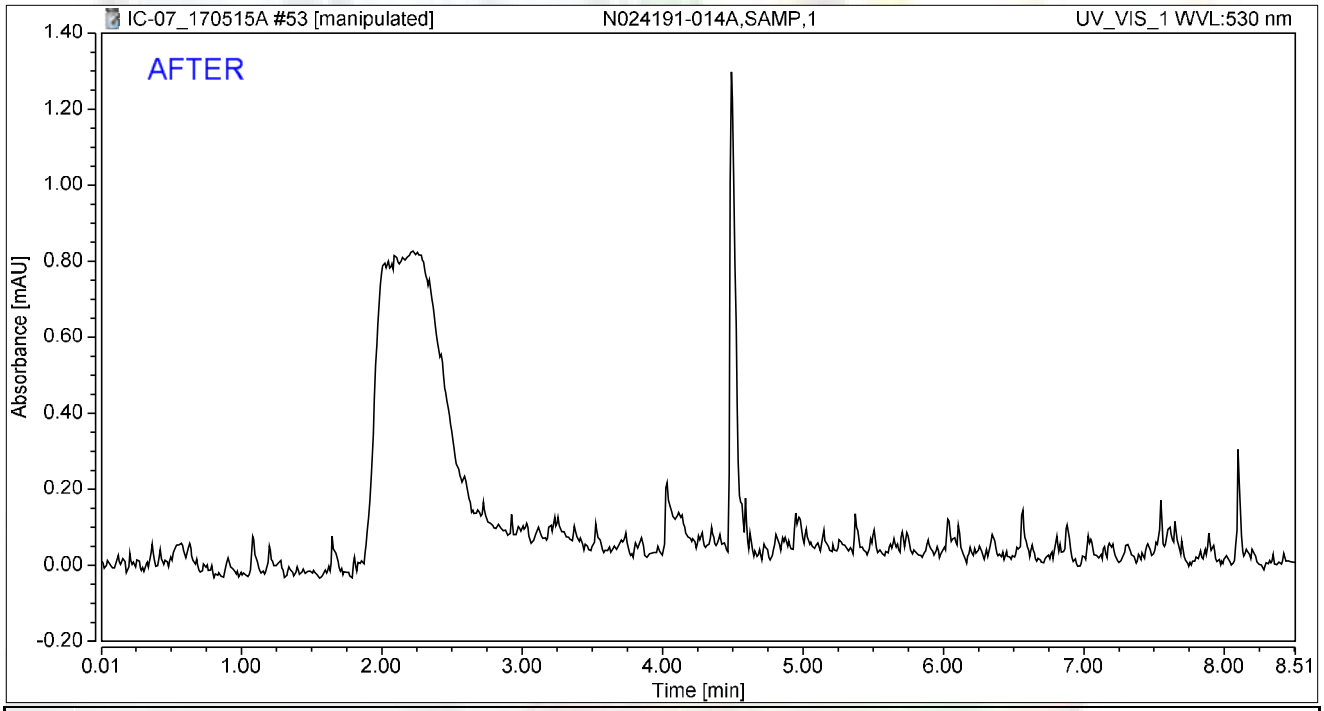
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024191-014A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

rba 5/17/2017

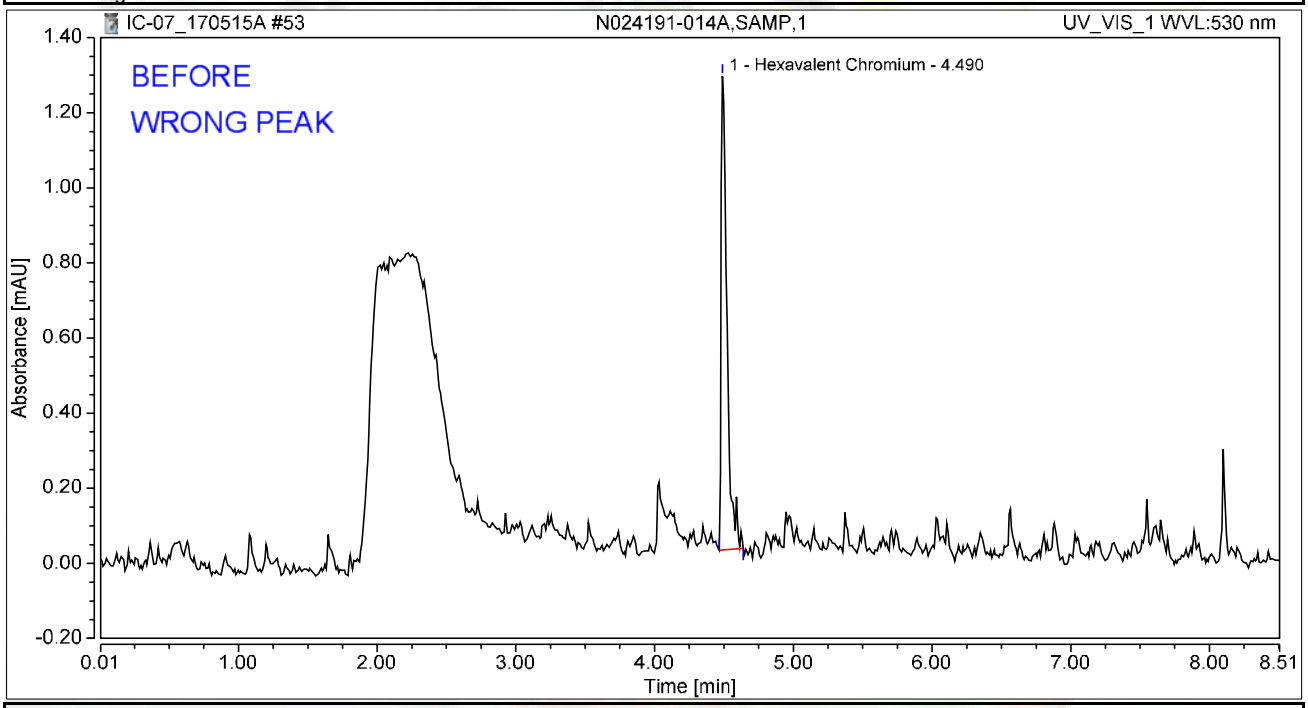
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-014A,SAMP,1**	*Run Time (min):*	**8.50**
Vial Number:	**43**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:48**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.490	0.062	1.262	100.00	100.00	0.2535
Total:			**0.062**	**1.262**	**100.00**	**100.00**	

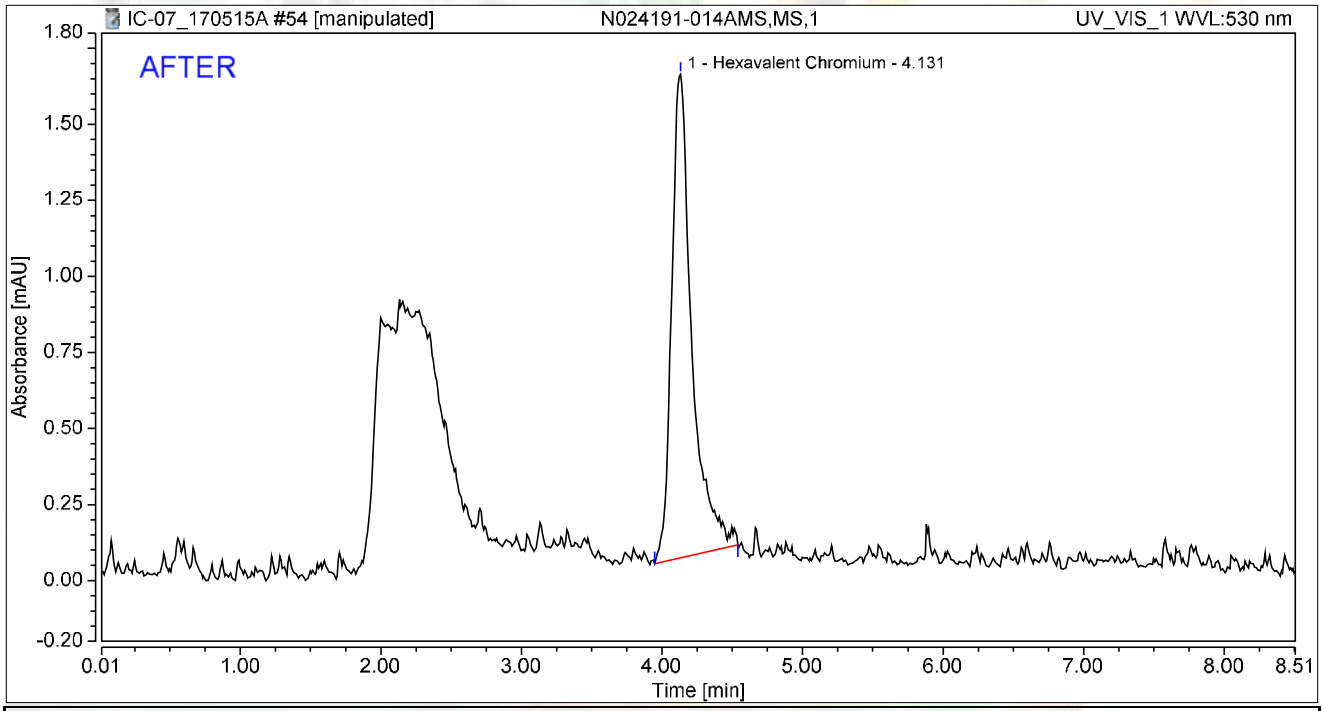
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-014AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.266	1.590	100.00	100.00	1.0898
Total:			**0.266**	**1.590**	**100.00**	**100.00**	

rba 5/17/2017

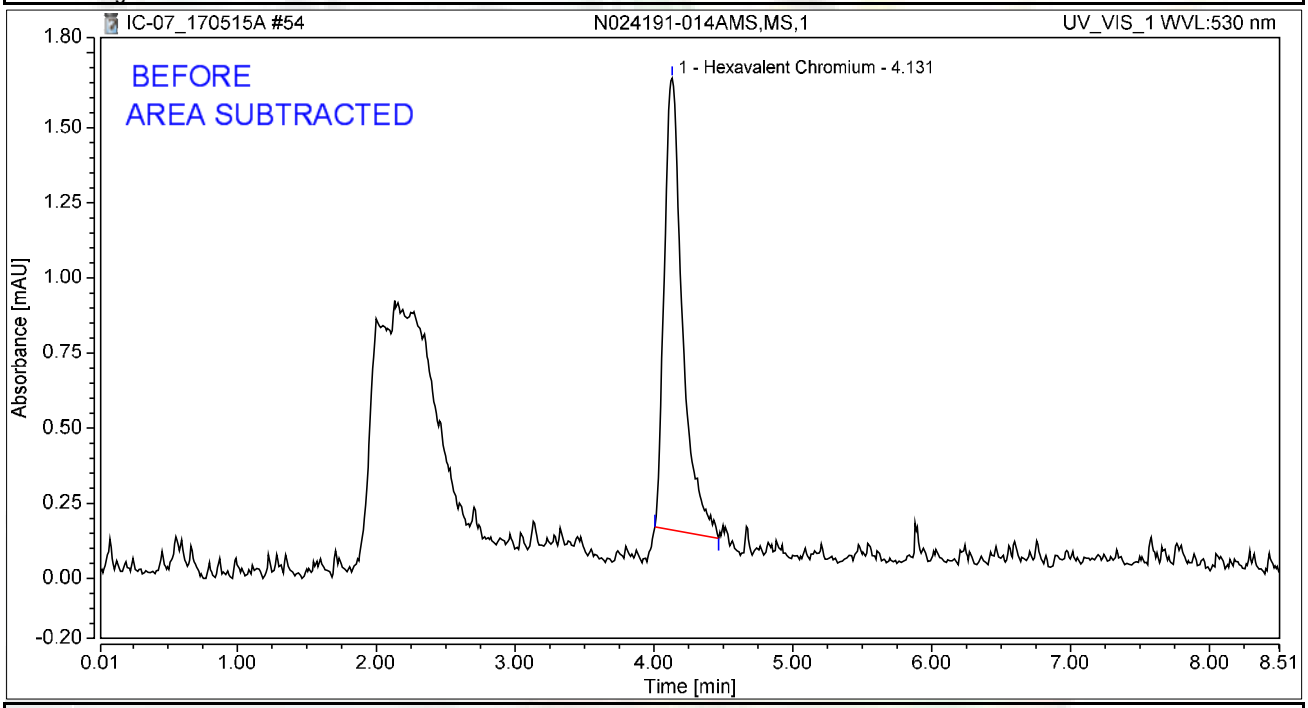
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024191-014AMS,MS,1**	*Run Time (min):*	**8.49**
Vial Number:	**44**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 15:58**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	0.229	1.504	100.00	100.00	0.9389
Total:			**0.229**	**1.504**	**100.00**	**100.00**	

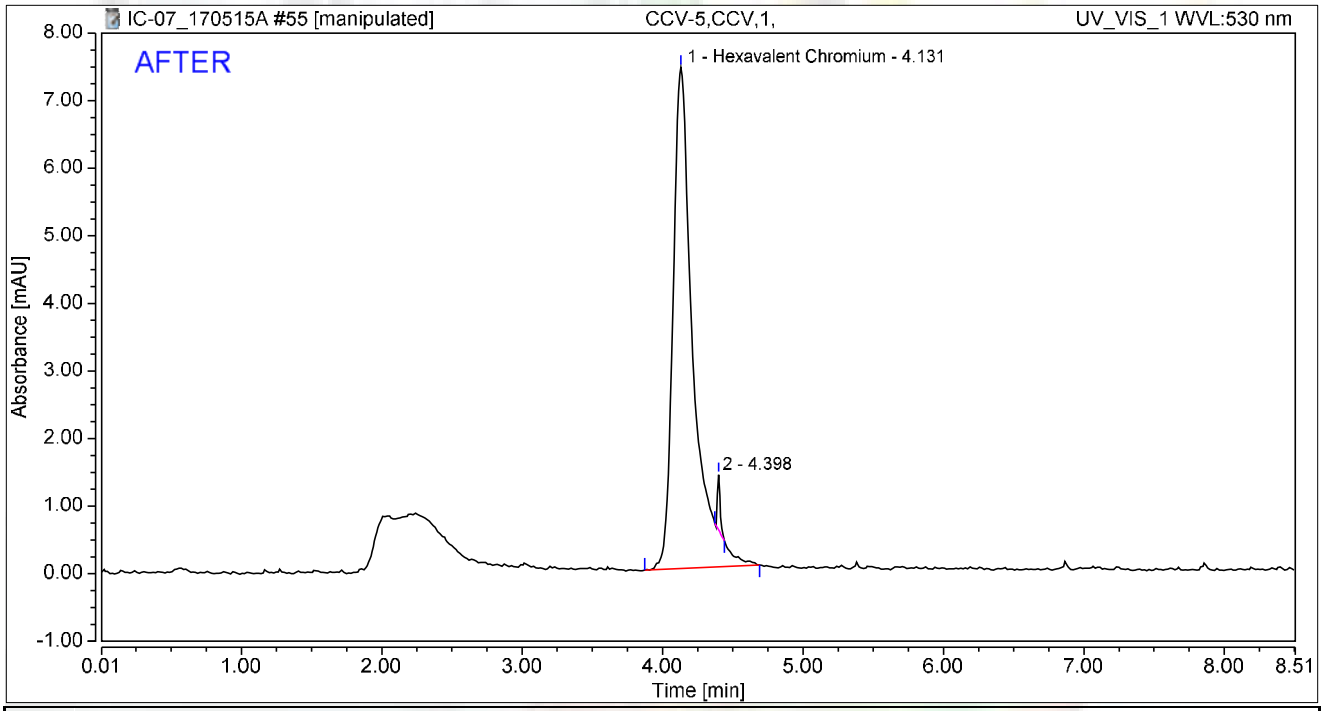
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.225	7.412	98.50	90.10	5.0233
2		4.398	0.019	0.815	1.50	9.90	n.a.
Total:			**1.244**	**8.227**	**100.00**	**100.00**	

rba 5/17/2017

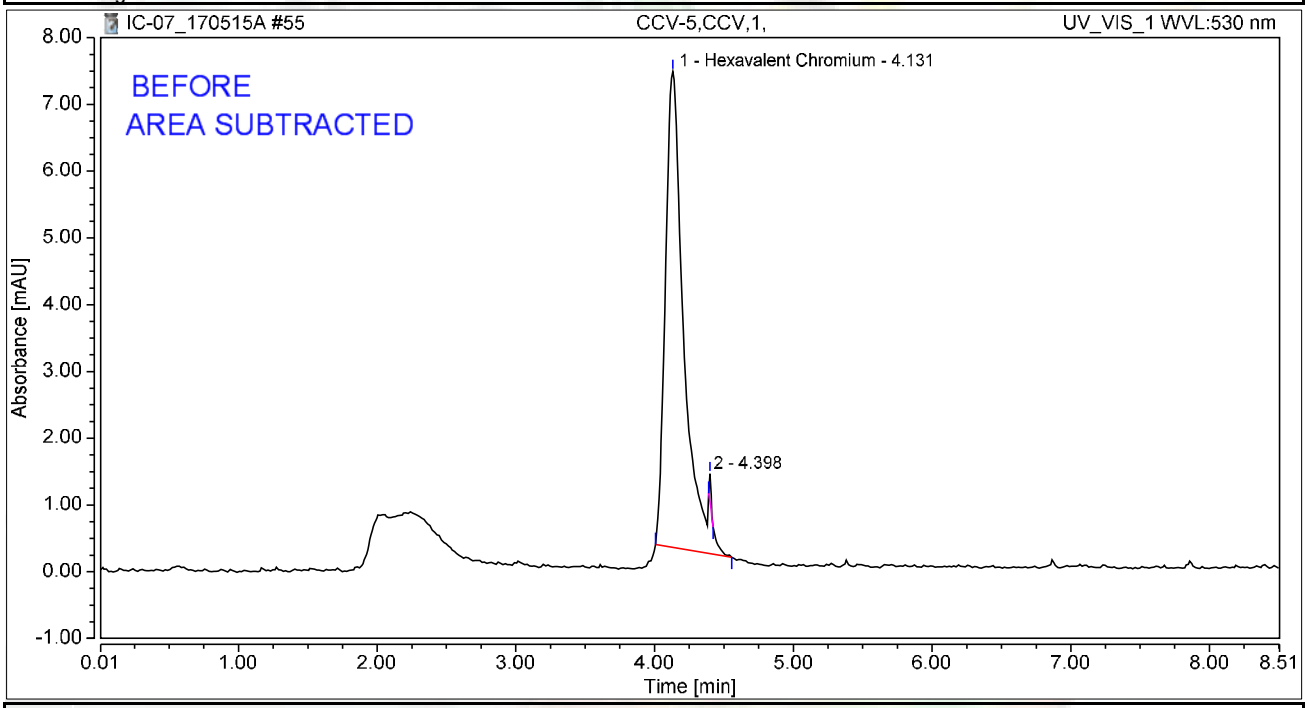
Reviewed by: 5/25/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-5,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**45**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 16:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.131	1.101	7.124	99.48	94.49	4.5153
2		4.398	0.006	0.416	0.52	5.51	n.a.
Total:			**1.107**	**7.539**	**100.00**	**100.00**	

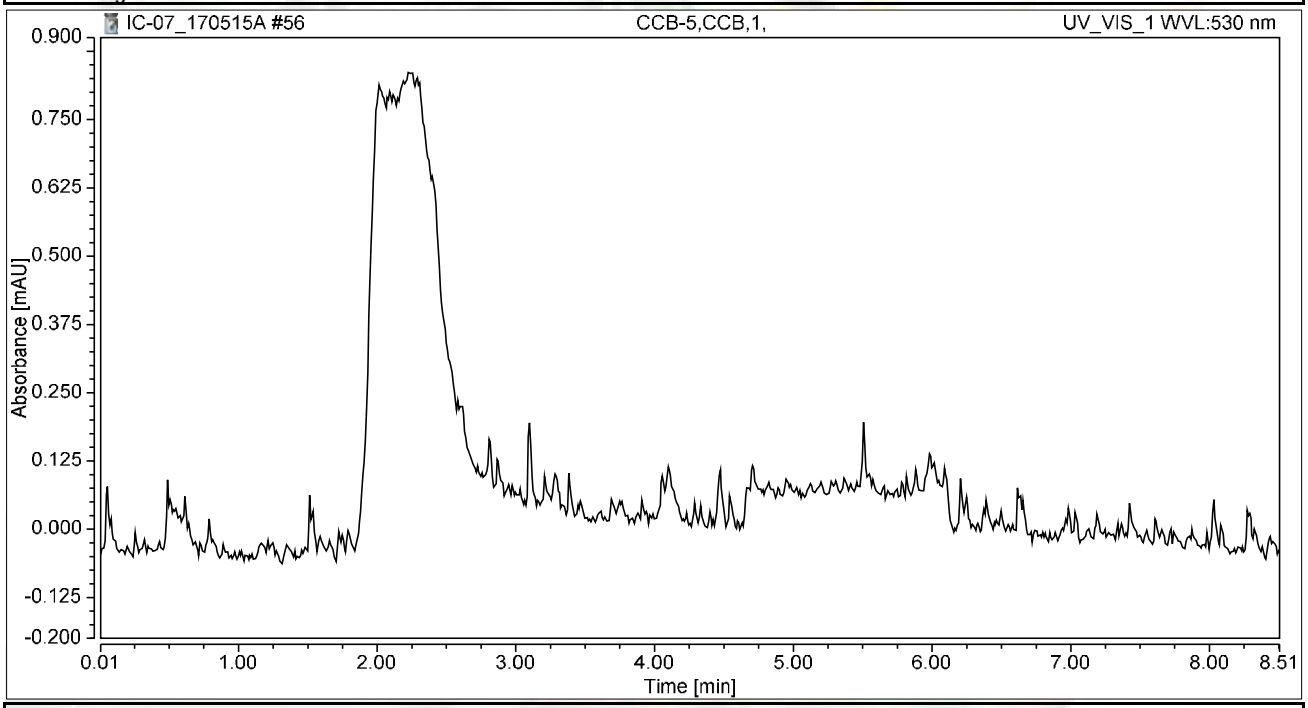
rba 5/17/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-5,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**46**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170425_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**15/May/17 16:17**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115409 **Analyst:** REB

ASSET #: N024191 **Date Analyzed:** 5/23/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value.	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
Sample Information						
8. All samples are within linear range.	X					
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer RB 05/25/17 Date: —

2nd Level Reviewer 5/25/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N024191-002E** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.4587*1

= 0.4587 mg/L

Reporting results in two significant figures:

Nitrate/Nitrite-N, mg/L = 0.46

RLB 05/25/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	ppm
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	-0.2
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	No
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

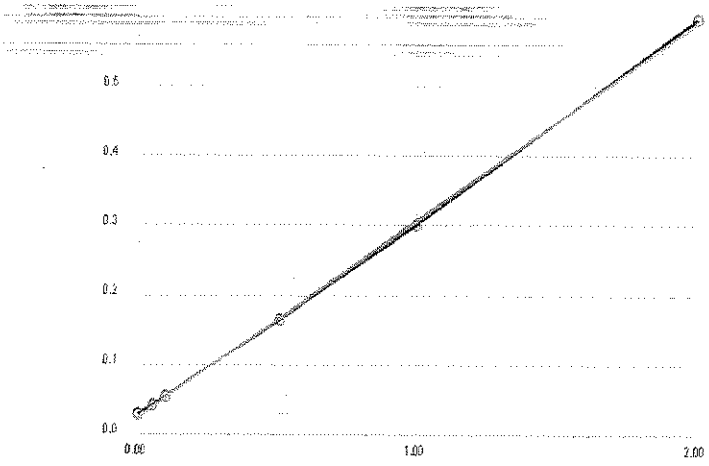
N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No

Formula	y = 0.2835x + 0.0252
Correlation	.999741

Calibrant	Energy	Set	Conc
1	0.0286	0.0000	0.0119
2	0.0417	0.0500	0.0581
3	0.0546	0.1000	0.1036
4	0.1640	0.5000	0.4894
5	0.3001	1.0000	0.9694
6	0.5973	2.0000	2.0176



Notes:

2% CuSO4- R170502D
R1 Buffer- R170502E
R2 Coloring reagent- R170517B

STD 1°- ISST160817E
STD 2°- ISST160211J

RB 05/24/17 **288**

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115409**
Client ID: **ICV**	Batch ID: **R115409**	TestNo: **SM4500-NO3**		Analysis Date: **5/23/2017**	SeqNo: **2653111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.488	0.050	0.5000	0	97.7	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115409**
Client ID: **CCV**	Batch ID: **R115409**	TestNo: **SM4500-NO3**		Analysis Date: **5/23/2017**	SeqNo: **2653123**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.503	0.050	0.5000	0	101	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115409**
Client ID: **CCV**	Batch ID: **R115409**	TestNo: **SM4500-NO3**		Analysis Date: **5/23/2017**	SeqNo: **2653135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.498	0.050	0.5000	0	99.6	90	110				

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115409**
Client ID: **CCV**	Batch ID: **R115409**	TestNo: **SM4500-NO3**		Analysis Date: **5/23/2017**	SeqNo: **2653142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.478	0.050	0.5000	0	95.6	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115409**
Client ID: **ICB**	Batch ID: **R115409**	TestNo: **SM4500-NO3**		Analysis Date: **5/23/2017**	SeqNo: **2653112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115409**
Client ID: **CCB**	Batch ID: **R115409**	TestNo: **SM4500-NO3**		Analysis Date: **5/23/2017**	SeqNo: **2653124**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.027	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115409**
Client ID: **CCB**	Batch ID: **R115409**	TestNo: **SM4500-NO3**		Analysis Date: **5/23/2017**	SeqNo: **2653136**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115409**
Client ID: **CCB**	Batch ID: **R115409**	TestNo: **SM4500-NO3**		Analysis Date: **5/23/2017**	SeqNo: **2653144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 05/23/17
Time Analyzed: 11:19 AM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170502E
Color reagent: R170517B
2% Copper Sulfate: R170502D
Ammonium Hydroxide: CINV-170424A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N024191-002E		8.07						
2)	N024191-003E		8.61						
3)	N024191-004E		8.37						
4)	N024191-005E		7.29						
5)	N024191-006E		8.51						
6)	N024191-007E		8.87						
7)	N024191-008E		6.64						
8)	N024191-009E		7.75						
9)	N024191-010E		6.38						
10)	N024191-011E		8.53						
11)	N024191-012E		8.46						
12)	N024191-013E		8.20						
13)	N024191-014E		6.79						
14)	N024198-001J		5.99						
15)	N024199-001J		8.25						
16)	N024223-001J		7.88						
17)	N024224-001J		8.70						
18)	N024225-001J		5.96						
19)	N024226-001J		8.20						
20)	N024227-001J		6.00						
21)									
22)									
23)									

Advanced Technology Laboratories, Inc.
Book # 1

RB 05/25/17

Advanced Technology Laboratories, Inc.

3151 W. Post Rd.
Las Vegas, NV. 89118
702-307-2659
702-307-2691
www.atl-labs.com

Time start: 05-23-2017 11:19
Time end: 05-23-2017 14:07

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	13:28:06	0.0299		0.0337
2	<BLANK>	13:29:06	0.0197		0.0308
3	<CAL1>	13:30:00	0.0119	[0]	0.0286
4	<CAL2>	13:30:56	0.0581	[0.05]	0.0417
5	<CAL3>	13:31:57	0.1036	[0.1]	0.0546
6	<CAL4>	13:32:51	0.4894	[0.5]	0.1640
7	<CAL5>	13:33:52	0.9694	[1]	0.3001
8	<CAL6>	13:34:48	2.0176	[2]	0.5973
9	,BLANK,BLANK,1,	13:35:43	0.0542		0.0406
10	,ICV,ICV,1,	13:36:43	0.4884		0.1637
11	,ICB,ICB,1,	13:37:39	0.0211		0.0312
12	,MB-H2O,MBLK,1,	13:38:34	0.0105		0.0282
13	,LCS-H2O,LCS,1,	13:39:34	0.4739		0.1596
14	,N024191-002E,SAMP,1,	13:40:30	0.4587		0.1553
15	,N024191-002EDUP,DUP,1,	13:41:25	0.4436		0.1510
16	,N024191-002EMS,MS,1,	13:42:27	0.9052		0.2819
17	,N024191-002EMSD,MSD,1,	13:43:21	0.9278		0.2883
18	,N024191-003E,SAMP,1,	13:44:17	0.4718		0.1590
19	,N024191-004E,SAMP,1,	13:45:18	0.4323		0.1478
20	,N024191-005E,SAMP,1,	13:46:12	0.4217		0.1448
21	,N024191-006E,SAMP,1,	13:47:08	0.4503		0.1529
22	,CCV-1,CCV,1,	13:48:09	0.5032		0.1679
23	,CCB-1,CCB,1,	13:49:05	0.0271		0.0329
24	,N024191-007E,SAMP,1,	13:50:05	0.1378		0.0643
25	,N024191-008E,SAMP,1,	13:51:00	0.1382		0.0644
26	,N024191-009E,SAMP,1,	13:51:50	0.4295		0.1470

RB 05/24/17

			EPA 353.2 NO3 as N ppm	Flags	OD
27	,N024191-010E,SAMP,1,	13:52:32	0.4411		0.1503
28	,N024191-011E,SAMP,1,	13:53:21	0.4344		0.1484
29	,N024191-012E,SAMP,1,	13:54:03	0.4492		0.1526
30	,N024191-013E,SAMP,1,	13:54:47	0.4252		0.1458
31	,N024191-014E,SAMP,1,	13:55:36	0.4577		0.1550
32	,N024198-001J,SAMP,1,	13:56:18	0.3007		0.1105
33	,N024199-001J,SAMP,1,	13:57:02	0.2443		0.0945
34	,CCV-2,CCV,1,	13:57:50	0.4982		0.1665
35	,CCB-2,CCB,1,	13:58:33	0.0154		0.0296
36	,N024223-001J,SAMP,1,	13:59:15	0.0260		0.0326
37	,N024224-001J,SAMP,1,	14:00:04	0.0077		0.0274
38	,N024225-001J,SAMP,1,	14:00:46	0.2422		0.0939
39	,N024226-001J,SAMP,1,	14:01:35	0.2503		0.0962
40	,N024227-001J,SAMP,1,	14:02:19	0.2612		0.0993
41	,BLANK,	14:03:01	0.0031		0.0261
42	,CCV-3,CCV,1,	14:03:50	0.4781		0.1608
43	,CCV-3,CCV,1, not used	14:04:32	0.5095		0.1697
44	,CCB-3,CCB,1,	14:05:15	0.0158		0.0297

RB 05/24/17

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EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62243
ASSET #: N024191

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/18/2017

Method:

[X] EPA 6010B / 200.7 Diss
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/25/2017 Date: —

2nd Level Reviewer 5/25/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N024191-003B** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.04384 * 1 * (25/25) * 1000

Iron , ug/L = 43.84

Reporting results in two significant figures,

Iron , ug/L = 44

% RSD SUMMARY

RSD SUMMARY: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	8.76	15	PASS
Standard1	ICAL	1	Fe	0.02	1.13	15	PASS
Standard2	ICAL	1	Fe	0.05	1.016	15	PASS
Standard3	ICAL	1	Fe	2	0.52	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.87	15	PASS
Standard6	ICAL	1	Fe	10	0.098	15	PASS
Standard7	ICAL	1	Fe	20	0.13	15	PASS
ICV	ICV	1	Fe	10.084	0.051	15	PASS
ICB	ICB	1	Fe	-0.00016	460.56	15	<PQL
LLICV	CCV1	1	Fe	0.021	1.55	20	PASS
ICSA1	ICSA	1	Fe	168.79	0.13	15	PASS
ICSAB1	ICSAB	1	Fe	182.2	0.89	15	PASS
CCV1	CCV	1	Fe	10.25	0.27	15	PASS
CCB1	CCB	1	Fe	0.0011	371.13	15	<PQL
CCB1	CCB	1	Fe	0.00035	432.56	15	<PQL
CCV2	CCV	1	Fe	10.22	0.31	15	PASS
CCB2	CCB	1	Fe	0.00091	173.55	15	<PQL
CCV3	CCV	1	Fe	11.15	10.2	15	PASS
CCV3	CCV	1	Fe	9.4	0.87	15	PASS
CCB3	CCB	1	Fe	-0.00056	199.98	15	<PQL
CCV4	CCV	1	Fe	8.97	0.51	15	PASS
CCV4	CCV	1	Fe	10.38	0.33	15	PASS
CCB4	CCB	1	Fe	-0.0013	74.41	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.71	20	PASS
ICSA2	ICSA	1	Fe	168.06	0.64	15	PASS
ICSAB2	ICSAB	1	Fe	183.24	0.35	15	PASS
MB-62243	MBLK	1	Fe	0.0034	25.11	15	<PQL
LCS-62243	LCS	1	Fe	0.11	1.63	15	PASS
N024182-004B	SAMP	1	Fe	0.011	8.46	15	PASS
N024182-004B	SAMP	5	Fe	-0.0024	12.38	15	PASS
N024182-004B-PS	PS	1	Fe	0.11	0.73	15	PASS
N024182-004B-MS	MS	1	Fe	0.1	0.23	15	PASS
N024182-004B-MSD	MSD	1	Fe	0.1	0.8	15	PASS
N024182-005B	SAMP	1	Fe	0.046	0.59	15	PASS
N024182-006B	SAMP	1	Fe	0.018	1.08	15	PASS
N024182-007B	SAMP	1	Fe	0.019	2.26	15	PASS
CCV5	CCV	1	Fe	10.38	0.51	15	PASS
CCB5	CCB	1	Fe	-0.0028	14.34	15	PASS
N024182-008B	SAMP	1	Fe	0.0079	11.35	15	PASS
N024182-011B	SAMP	1	Fe	0.0045	13.49	15	PASS
N024182-012B	SAMP	1	Fe	0.012	6.39	15	PASS

RSD SUMMARY: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
N024191-002B	SAMP	1	Fe	0.0041	13.99	15	PASS
N024191-003B	SAMP	1	Fe	0.044	0.59	15	PASS
N024191-004B	SAMP	1	Fe	0.00046	79.45	15	<PQL
N024191-005B	SAMP	1	Fe	-0.00081	95.6	15	<PQL
N024191-006B	SAMP	1	Fe	0.0016	32.77	15	<PQL
N024191-007B	SAMP	1	Fe	0.051	1.6	15	PASS
N024191-008B	SAMP	1	Fe	0.0046	12.16	15	PASS
CCV6	CCV	1	Fe	10.36	0.31	15	PASS
CCB6	CCB	1	Fe	-0.003	33.41	15	<PQL
N024191-009B	SAMP	1	Fe	0.00023	363.15	15	<PQL
N024191-010B	SAMP	1	Fe	0.0079	9.028	15	PASS
N024191-011B	SAMP	1	Fe	-0.00086	67.56	15	<PQL
N024191-012B	SAMP	1	Fe	0.0054	10.82	15	PASS
N024191-013B	SAMP	1	Fe	-0.00056	153.18	15	<PQL
N024191-014B	SAMP	1	Fe	-0.00015	342.27	15	<PQL
CCV7	CCV	1	Fe	10.33	0.55	15	PASS
CCB7	CCB	1	Fe	-0.0034	28.65	15	<PQL
LLCCV2	CCV2	1	Fe	0.019	1.0014	20	PASS
ICSA3	ICSA	1	Fe	167.41	0.47	15	PASS
ICSAB3	ICSAB	1	Fe	183.31	0.26	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170518A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-170306C
Standard3	MWST-170306F,5<50mL
Standard4	MWST-170306F,12.5<50mL
Standard5	MWST-170306F,15<40mL
Standard6	MWST-170306F,25<50mL
Standard7	MWST-170306F
ICV	MWST-170430G
CCV	MWST-170306F,25<50mL
ICSA/ICSAB	MWST-170228D/ MWST-170430H
Int. Std. (Y)	MSST-170404Q/R
PS Spike	MWST-170430J/-170430B;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/18/2017	04:19:29 AM
2	Standard1	ICAL	1	05/18/2017	04:23:47 AM
10	Standard2	ICAL	1	05/18/2017	04:28:36 AM
18	Standard3	ICAL	1	05/18/2017	04:33:27 AM
19	Standard4	ICAL	1	05/18/2017	04:38:16 AM
6	Standard5	ICAL	1	05/18/2017	04:43:05 AM
8	Standard6	ICAL	1	05/18/2017	04:47:54 AM
20	Standard7	ICAL	1	05/18/2017	04:52:18 AM
9	ICV	ICV	1	05/18/2017	04:57:41 AM
1	ICB	ICB	1	05/18/2017	05:03:06 AM
2	LLICV	CCV1	1	05/18/2017	05:07:25 AM
4	ICSA1	ICSA	1	05/18/2017	05:12:14 AM
5	ICSAB1	ICSAB	1	05/18/2017	05:18:16 AM
38	MB-62241	MBLK	1	05/18/2017	05:24:18 AM
39	LCS-62241	LCS	1	05/18/2017	05:28:37 AM
40	N024184-001C	SAMP	1	05/18/2017	05:33:35 AM
41	N024184-001C	SAMP	5	05/18/2017	05:38:25 AM
42	N024184-001C-PS	PS	1	05/18/2017	05:43:14 AM
43	N024184-001C-MS	MS	1	05/18/2017	05:48:05 AM
44	N024184-001C-MSD	MSD	1	05/18/2017	05:52:56 AM
45	N024184-002C	SAMP	1	05/18/2017	05:57:46 AM
46	N024184-003C	SAMP	1	05/18/2017	06:02:37 AM
47	N024184-004C	SAMP	1	05/18/2017	06:07:29 AM
8	CCV1	CCV	1	05/18/2017	06:12:20 AM
1	CCB1	CCB	1	05/18/2017	06:17:11 AM
36	CCB1	CCB	1	05/18/2017	06:24:45 AM
48	N024184-005C	SAMP	1	05/18/2017	06:29:06 AM
49	N024184-006C	SAMP	1	05/18/2017	06:33:58 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
50	N024184-007C	SAMP	1	05/18/2017	06:38:51 AM
51	N024184-008C	SAMP	1	05/18/2017	06:43:42 AM
52	N024184-009C	SAMP	1	05/18/2017	06:48:33 AM
53	N024184-010C	SAMP	1	05/18/2017	06:53:24 AM
54	N024184-011C	SAMP	1	05/18/2017	06:58:16 AM
55	N024184-012C	SAMP	1	05/18/2017	07:03:07 AM
56	N024184-013C	SAMP	1	05/18/2017	07:07:58 AM
57	MB-62242	MBLK	1	05/18/2017	07:12:49 AM
8	CCV2	CCV	1	05/18/2017	07:17:10 AM
36	CCB2	CCB	1	05/18/2017	07:22:02 AM
58	LCS-62242	LCS	1	05/18/2017	07:26:23 AM
59	N024191-002C	SAMP	1	05/18/2017	07:31:14 AM
60	N024191-002C	SAMP	5	05/18/2017	07:36:05 AM
61	N024191-002C-PS	PS	1	05/18/2017	07:40:56 AM
62	N024191-002C-MS	MS	1	05/18/2017	07:45:48 AM
63	N024191-002C-MSD	MSD	1	05/18/2017	07:50:40 AM
64	N024191-003C	SAMP	1	05/18/2017	07:55:32 AM
65	N024191-004C	SAMP	1	05/18/2017	08:00:24 AM
66	N024191-005C	SAMP	1	05/18/2017	08:05:15 AM
67	N024191-006C	SAMP	1	05/18/2017	08:10:07 AM
8	CCV3	CCV	1	05/18/2017	08:14:59 AM
8	CCV3	CCV	1	05/18/2017	08:19:04 AM
36	CCB3	CCB	1	05/18/2017	08:23:54 AM
68	N024191-007C	SAMP	1	05/18/2017	08:28:46 AM
69	N024191-008C	SAMP	1	05/18/2017	08:33:38 AM
70	N024191-009C	SAMP	1	05/18/2017	08:38:29 AM
71	N024191-010C	SAMP	1	05/18/2017	08:43:19 AM
72	N024191-011C	SAMP	1	05/18/2017	08:48:11 AM
73	N024191-012C	SAMP	1	05/18/2017	08:53:03 AM
74	N024191-013C	SAMP	1	05/18/2017	08:58:14 AM
75	N024191-014C	SAMP	1	05/18/2017	09:03:05 AM
43	N024184-001C-MS	MS	1	05/18/2017	09:07:55 AM
44	N024184-001C-MSD	MSD	1	05/18/2017	09:12:47 AM
8	CCV4	CCV	1	05/18/2017	09:17:37 AM
8	CCV4	CCV	1	05/18/2017	09:24:57 AM
36	CCB4	CCB	1	05/18/2017	09:30:48 AM
2	LLCCV1	CCV2	1	05/18/2017	09:35:09 AM
4	ICSA2	ICSA	1	05/18/2017	09:40:08 AM
5	ICSAB2	ICSAB	1	05/18/2017	09:46:09 AM
76	MB-62243	MBLK	1	05/18/2017	09:54:29 AM
77	LCS-62243	LCS	1	05/18/2017	09:58:51 AM
78	N024182-004B	SAMP	1	05/18/2017	10:03:42 AM
79	N024182-004B	SAMP	5	05/18/2017	10:08:33 AM
80	N024182-004B-PS	PS	1	05/18/2017	10:13:24 AM
81	N024182-004B-MS	MS	1	05/18/2017	10:18:16 AM
82	N024182-004B-MSD	MSD	1	05/18/2017	10:23:07 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
83	N024182-005B	SAMP	1	05/18/2017	10:27:58 AM
84	N024182-006B	SAMP	1	05/18/2017	10:32:50 AM
85	N024182-007B	SAMP	1	05/18/2017	10:37:43 AM
8	CCV5	CCV	1	05/18/2017	10:43:34 AM
36	CCB5	CCB	1	05/18/2017	10:49:25 AM
86	N024182-008B	SAMP	1	05/18/2017	10:53:47 AM
87	N024182-011B	SAMP	1	05/18/2017	10:58:38 AM
88	N024182-012B	SAMP	1	05/18/2017	11:04:29 AM
89	N024191-002B	SAMP	1	05/18/2017	11:09:21 AM
90	N024191-003B	SAMP	1	05/18/2017	11:14:12 AM
91	N024191-004B	SAMP	1	05/18/2017	11:19:03 AM
92	N024191-005B	SAMP	1	05/18/2017	11:23:54 AM
93	N024191-006B	SAMP	1	05/18/2017	11:28:46 AM
94	N024191-007B	SAMP	1	05/18/2017	11:33:38 AM
95	N024191-008B	SAMP	1	05/18/2017	11:38:30 AM
8	CCV6	CCV	1	05/18/2017	11:43:22 AM
36	CCB6	CCB	1	05/18/2017	11:49:12 AM
96	N024191-009B	SAMP	1	05/18/2017	11:53:33 AM
97	N024191-010B	SAMP	1	05/18/2017	11:58:25 AM
14	N024191-011B	SAMP	1	05/18/2017	12:03:17 PM
15	N024191-012B	SAMP	1	05/18/2017	12:08:06 PM
16	N024191-013B	SAMP	1	05/18/2017	12:12:56 PM
17	N024191-014B	SAMP	1	05/18/2017	12:17:45 PM
8	CCV7	CCV	1	05/18/2017	12:22:34 PM
36	CCB7	CCB	1	05/18/2017	12:28:25 PM
2	LLCCV2	CCV2	1	05/18/2017	12:32:46 PM
4	ICSA3	ICSA	1	05/18/2017	12:37:35 PM
5	ICSAB3	ICSAB	1	05/18/2017	12:43:36 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/15/2017 1:00:00 P**
Prep End Date: **5/15/2017 5:00:00 P**

Reviewed/ Date: 5/25/2017
Initials/ Date: for 5/25/2017

Prep Batch **62243** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62243	Aqueous		25	☐	0	0	25	1.000		
MB-62243	Aqueous		25	☐	0	0	25	1.000		
N024182-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N024182-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024182-004B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024182-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024182-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N024182-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024182-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N024182-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N024182-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-004B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8994	HYDROCHLORIC ACID
9001	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-170430B	ICP Solution B	LCS,MS,MSD	0.5
MWST-170430J	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/15/2017 1:00:00 P**
Prep End Date: **5/15/2017 5:00:00 P**

Reviewed/ Date: 5/25/2017

Initials/ Date: 5/25/2017

Prep Batch **62243** Prep Code: **3010_W_DISS** Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024191-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-011B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8994	HYDROCHLORIC ACID
9001	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-170430B	ICP Solution B	LCS,MS,MSD	0.5
MWST-170430J	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170518A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/18/2017	04:19:29 AM	Fe	273.953	206	0.00	mg/L	
Standard1	05/18/2017	04:23:47 AM	Fe	273.953	564	0.0200	mg/L	
Standard2	05/18/2017	04:28:36 AM	Fe	273.953	1875	0.050	mg/L	
Standard3	05/18/2017	04:33:27 AM	Fe	273.953	53835	2.000	mg/L	
Standard4	05/18/2017	04:38:16 AM	Fe	273.953	136480	5.000	mg/L	
Standard5	05/18/2017	04:43:05 AM	Fe	273.953	203957	7.500	mg/L	
Standard6	05/18/2017	04:47:54 AM	Fe	273.953	263460	10.000	mg/L	
Standard7	05/18/2017	04:52:18 AM	Fe	273.953	519335	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **ICV**	SampType: **ICV**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **ICV**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648784**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10083.544	20	10000	0	101	90	110				

Sample ID: **LLICV**	SampType: **CCV1**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **ZZZZZZ**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648786**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.958	20	20.00	0	105	80	120				

Sample ID: **CCV1**	SampType: **CCV**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCV**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648799**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10250.182	20	10000	0	103	90	110				

Sample ID: **CCV2**	SampType: **CCV**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCV**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648812**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10221.861	20	10000	0	102	90	110				

Sample ID: **CCV3**	SampType: **CCV**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCV**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648825**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9401.142	20	10000	0	94.0	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **CCV4**	SampType: **CCV**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCV**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648838**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10376.682	20	10000	0	104	90	110				

Sample ID: **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **ZZZZZZ**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648840**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.776	20	20.00	0	98.9	70	130				

Sample ID: **CCV5**	SampType: **CCV**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCV**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648853**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10380.492	20	10000	0	104	90	110				

Sample ID: **CCV6**	SampType: **CCV**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCV**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2649100**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10355.568	20	10000	0	104	90	110				

Sample ID: **CCV7**	SampType: **CCV**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCV**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2649108**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10329.569	20	10000	0	103	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **LLCCV2** SampType: **CCV2** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ZZZZZZ** Batch ID: **R115323** TestNo: **EPA 6010B** Analysis Date: **5/18/2017** SeqNo: **2649110**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	18.945	20	20.00	0	94.7	70	130				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **ICB**	SampType: **ICB**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **ICB**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648785**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.160481	20									

Sample ID: **CCB1**	SampType: **CCB**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCB**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648801**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.347	20									

Sample ID: **CCB2**	SampType: **CCB**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCB**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648813**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.912	20									

Sample ID: **CCB3**	SampType: **CCB**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCB**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648826**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.564682	20									

Sample ID: **CCB4**	SampType: **CCB**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCB**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648839**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.339913	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **CCB5**	SampType: **CCB**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCB**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-2.801993	20									

Sample ID: **CCB6**	SampType: **CCB**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCB**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2649101**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-3.03962	20									

Sample ID: **CCB7**	SampType: **CCB**	TestCode: **6010_WDPGE**	Units: **ug/L**	Prep Date:	RunNo: **115323**
Client ID: **CCB**	Batch ID: **R115323**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2649109**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-3.42557	20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **ICSA1** SampType: **ICSA** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ICSA** Batch ID: **R115323** TestNo: **EPA 6010B** Analysis Date: **5/18/2017** SeqNo: **2648787**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502572.383	50	500000	0	101	80	120				
Calcium	505404.031	500	500000	0	101	80	120				
Iron	168794.925	20	200000	0	84.4	80	120				
Magnesium	473295.313	100	500000	0	94.7	80	120				

Sample ID: **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ICSAB** Batch ID: **R115323** TestNo: **EPA 6010B** Analysis Date: **5/18/2017** SeqNo: **2648788**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556855.710	50	500000	0	111	80	120				
Calcium	557992.606	500	500000	0	112	80	120				
Iron	182196.372	20	200000	0	91.1	80	120				
Magnesium	517899.110	100	500000	0	104	80	120				

Sample ID: **ICSA2** SampType: **ICSA** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ICSA** Batch ID: **R115323** TestNo: **EPA 6010B** Analysis Date: **5/18/2017** SeqNo: **2648841**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511005.246	50	500000	0	102	80	120				
Calcium	518561.220	500	500000	0	104	80	120				
Iron	168055.784	20	200000	0	84.0	80	120				
Magnesium	474556.902	100	500000	0	94.9	80	120				

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ICSAB** Batch ID: **R115323** TestNo: **EPA 6010B** Analysis Date: **5/18/2017** SeqNo: **2648842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	567269.667	50	500000	0	113	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ICSAB** Batch ID: **R115323** TestNo: **EPA 6010B** Analysis Date: **5/18/2017** SeqNo: **2648842**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	573041.929	500	500000	0	115	80	120				
Iron	183240.534	20	200000	0	91.6	80	120				
Magnesium	523415.003	100	500000	0	105	80	120				

Sample ID: **ICSA3** SampType: **ICSA** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ICSA** Batch ID: **R115323** TestNo: **EPA 6010B** Analysis Date: **5/18/2017** SeqNo: **2649111**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	510830.459	50	500000	0	102	80	120				
Calcium	519750.766	500	500000	0	104	80	120				
Iron	167408.557	20	200000	0	83.7	80	120				

Sample ID: **ICSAB3** SampType: **ICSAB** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ICSAB** Batch ID: **R115323** TestNo: **EPA 6010B** Analysis Date: **5/18/2017** SeqNo: **2649112**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	569757.166	50	500000	0	114	80	120				
Calcium	575943.204	500	500000	0	115	80	120				
Iron	183310.268	20	200000	0	91.7	80	120				
Magnesium	523449.755	100	500000	0	105	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.011	101.08	65-125	PASS
Standard2	ICAL	1	1.029	102.94	65-125	PASS
Standard3	ICAL	1	1.0085	100.85	65-125	PASS
Standard4	ICAL	1	0.99	98.76	65-125	PASS
Standard5	ICAL	1	1.007	100.7	65-125	PASS
Standard6	ICAL	1	1.0001	100.01	65-125	PASS
Standard7	ICAL	1	1.0061	100.61	65-125	PASS
ICV	ICV	1	1.0078	100.78	65-125	PASS
ICB	ICB	1	1.043	104.26	65-125	PASS
LLICV	CCV1	1	1.058	105.75	65-125	PASS
ICSA1	ICSA	1	0.95	95.06	65-125	PASS
ICSAB1	ICSAB	1	0.87	86.85	65-125	PASS
CCV1	CCV	1	1.051	105.09	65-125	PASS
CCB1	CCB	1	0.73	72.81	65-125	PASS
CCB1	CCB	1	1.059	105.91	65-125	PASS
CCV2	CCV	1	1.09	108.98	65-125	PASS
CCB2	CCB	1	1.095	109.54	65-125	PASS
CCV3	CCV	1	1.021	102.11	65-125	PASS
CCV3	CCV	1	1.016	101.64	65-125	PASS
CCB3	CCB	1	1.041	104.1	65-125	PASS
CCV4	CCV	1	1.067	106.72	65-125	PASS
CCV4	CCV	1	1.037	103.71	65-125	PASS
CCB4	CCB	1	1.075	107.46	65-125	PASS
LLCCV1	CCV2	1	1.11	110.89	65-125	PASS
ICSA2	ICSA	1	1	99.61	65-125	PASS
ICSAB2	ICSAB	1	0.91	90.98	65-125	PASS
MB-62243	MBLK	1	1.067	106.73	65-125	PASS
LCS-62243	LCS	1	0.98	98.23	65-125	PASS
N024182-004B	SAMP	1	1.036	103.61	65-125	PASS
N024182-004B	SAMP	5	1.067	106.67	65-125	PASS
N024182-004B-PS	PS	1	1.033	103.33	65-125	PASS
N024182-004B-MS	MS	1	1.057	105.68	65-125	PASS
N024182-004B-MSD	MSD	1	1.056	105.58	65-125	PASS
N024182-005B	SAMP	1	1.059	105.88	65-125	PASS
N024182-006B	SAMP	1	1.037	103.68	65-125	PASS
N024182-007B	SAMP	1	1.037	103.72	65-125	PASS
CCV5	CCV	1	1.035	103.49	65-125	PASS
CCB5	CCB	1	1.059	105.87	65-125	PASS
N024182-008B	SAMP	1	1.039	103.93	65-125	PASS
N024182-011B	SAMP	1	1.042	104.19	65-125	PASS

INTERNAL STANDARD: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
N024182-012B	SAMP	1	1.058	105.85	65-125	PASS
N024191-002B	SAMP	1	1.048	104.75	65-125	PASS
N024191-003B	SAMP	1	1.046	104.55	65-125	PASS
N024191-004B	SAMP	1	1.066	106.61	65-125	PASS
N024191-005B	SAMP	1	1.047	104.67	65-125	PASS
N024191-006B	SAMP	1	1.058	105.77	65-125	PASS
N024191-007B	SAMP	1	1.043	104.28	65-125	PASS
N024191-008B	SAMP	1	1.079	107.9	65-125	PASS
CCV6	CCV	1	1.046	104.59	65-125	PASS
CCB6	CCB	1	1.066	106.65	65-125	PASS
N024191-009B	SAMP	1	1.07	107	65-125	PASS
N024191-010B	SAMP	1	1.044	104.41	65-125	PASS
N024191-011B	SAMP	1	1.057	105.7	65-125	PASS
N024191-012B	SAMP	1	1.075	107.45	65-125	PASS
N024191-013B	SAMP	1	1.031	103.1	65-125	PASS
N024191-014B	SAMP	1	1.03	103.02	65-125	PASS
CCV7	CCV	1	1.058	105.81	65-125	PASS
CCB7	CCB	1	1.087	108.71	65-125	PASS
LLCCV2	CCV2	1	1.13	112.84	65-125	PASS
ICSA3	ICSA	1	1.013	101.27	65-125	PASS
ICSAB3	ICSAB	1	0.92	91.78	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N024191
Test Method: EPA 6010B
Analysis Date: 5/18/2017

Matrix: Groundwater
Batch No.: 62243

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024182-004B DT 5x	Iron	ug/L	0	NA	11.3907	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID: **N024182-004B-PS** SampType: **PS** TestCode: **6010_WDPGE** Units: **ug/L** Prep Date: RunNo: **115323**
Client ID: **ZZZZZZ** Batch ID: **62243** TestNo: **EPA 6010B** **EPA 3010A** Analysis Date: **5/18/2017** SeqNo: **2648847**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	107.438	20	100.0	11.39	96.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6010B

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62242
ASSET #: N024191

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 5/18/2017

Method:

[X] EPA 6010B / 200.7 TOTAL
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.		X				
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented			X			
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/25/2017 Date:
2nd Level Reviewer 5/25/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Iron concentration, in ug/L , in the original sample as follows:

Iron , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N024191-002C** , the concentration ir ug/L is calculated as follows:

Iron , ug/L = 0.01863 * 1 * (25/25) * 1000

Iron , ug/L = 18.63

Reporting results in two significant figures,

Iron , ug/L = 19

Since PQL of Iron , in ug/L = 20

Iron , ug/L = ND

% RSD SUMMARY

RSD SUMMARY: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Fe	0	8.76	15	PASS
Standard1	ICAL	1	Fe	0.02	1.13	15	PASS
Standard2	ICAL	1	Fe	0.05	1.016	15	PASS
Standard3	ICAL	1	Fe	2	0.52	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.87	15	PASS
Standard6	ICAL	1	Fe	10	0.098	15	PASS
Standard7	ICAL	1	Fe	20	0.13	15	PASS
ICV	ICV	1	Fe	10.084	0.051	15	PASS
ICB	ICB	1	Fe	-0.00016	460.56	15	<PQL
LLICV	CCV1	1	Fe	0.021	1.55	20	PASS
ICSA1	ICSA	1	Fe	168.79	0.13	15	PASS
ICSAB1	ICSAB	1	Fe	182.2	0.89	15	PASS
CCV1	CCV	1	Fe	10.25	0.27	15	PASS
CCB1	CCB	1	Fe	0.0011	371.13	15	<PQL
CCB1	CCB	1	Fe	0.00035	432.56	15	<PQL
MB-62242	MBLK	1	Fe	-0.0058	3.41	15	PASS
CCV2	CCV	1	Fe	10.22	0.31	15	PASS
CCB2	CCB	1	Fe	0.00091	173.55	15	<PQL
LCS-62242	LCS	1	Fe	0.1	0.47	15	PASS
N024191-002C	SAMP	1	Fe	0.019	2.6	15	PASS
N024191-002C	SAMP	5	Fe	-0.00067	50.13	15	<PQL
N024191-002C-PS	PS	1	Fe	0.12	0.45	15	PASS
N024191-002C-MS	MS	1	Fe	0.12	0.43	15	PASS
N024191-002C-MSD	MSD	1	Fe	0.12	0.24	15	PASS
N024191-003C	SAMP	1	Fe	0.017	3.78	15	PASS
N024191-004C	SAMP	1	Fe	0.021	1.12	15	PASS
N024191-005C	SAMP	1	Fe	0.082	0.88	15	PASS
N024191-006C	SAMP	1	Fe	0.014	2.14	15	PASS
CCV3	CCV	1	Fe	11.15	10.2	15	PASS
CCV3	CCV	1	Fe	9.4	0.87	15	PASS
CCB3	CCB	1	Fe	-0.00056	199.98	15	<PQL
N024191-007C	SAMP	1	Fe	6.93	0.79	15	PASS
N024191-008C	SAMP	1	Fe	2.56	0.73	15	PASS
N024191-009C	SAMP	1	Fe	0.023	3.00087	15	PASS
N024191-010C	SAMP	1	Fe	0.018	2.45	15	PASS
N024191-011C	SAMP	1	Fe	0.024	1.69	15	PASS
N024191-012C	SAMP	1	Fe	0.016	0.72	15	PASS
N024191-013C	SAMP	1	Fe	0.022	2.36	15	PASS
N024191-014C	SAMP	1	Fe	0.019	4.26	15	PASS
CCV4	CCV	1	Fe	8.97	0.51	15	PASS
CCV4	CCV	1	Fe	10.38	0.33	15	PASS

RSD SUMMARY: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CCB4	CCB	1	Fe	-0.0013	74.41	15	<PQL
LLCCV1	CCV2	1	Fe	0.02	1.71	20	PASS
ICSA2	ICSA	1	Fe	168.06	0.64	15	PASS
ICSAB2	ICSAB	1	Fe	183.24	0.35	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170518A

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-161109A,0.5<50mL
Standard2	MWST-170306C
Standard3	MWST-170306F,5<50mL
Standard4	MWST-170306F,12.5<50mL
Standard5	MWST-170306F,15<40mL
Standard6	MWST-170306F,25<50mL
Standard7	MWST-170306F
ICV	MWST-170430G
CCV	MWST-170306F,25<50mL
ICSA/ICSAB	MWST-170228D/ MWST-170430H
Int. Std. (Y)	MSST-170404Q/R
PS Spike	MWST-170430J/-170430B;MWST-161201F

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	05/18/2017	04:19:29 AM
2	Standard1	ICAL	1	05/18/2017	04:23:47 AM
10	Standard2	ICAL	1	05/18/2017	04:28:36 AM
18	Standard3	ICAL	1	05/18/2017	04:33:27 AM
19	Standard4	ICAL	1	05/18/2017	04:38:16 AM
6	Standard5	ICAL	1	05/18/2017	04:43:05 AM
8	Standard6	ICAL	1	05/18/2017	04:47:54 AM
20	Standard7	ICAL	1	05/18/2017	04:52:18 AM
9	ICV	ICV	1	05/18/2017	04:57:41 AM
1	ICB	ICB	1	05/18/2017	05:03:06 AM
2	LLICV	CCV1	1	05/18/2017	05:07:25 AM
4	ICSA1	ICSA	1	05/18/2017	05:12:14 AM
5	ICSAB1	ICSAB	1	05/18/2017	05:18:16 AM
38	MB-62241	MBLK	1	05/18/2017	05:24:18 AM
39	LCS-62241	LCS	1	05/18/2017	05:28:37 AM
40	N024184-001C	SAMP	1	05/18/2017	05:33:35 AM
41	N024184-001C	SAMP	5	05/18/2017	05:38:25 AM
42	N024184-001C-PS	PS	1	05/18/2017	05:43:14 AM
43	N024184-001C-MS	MS	1	05/18/2017	05:48:05 AM
44	N024184-001C-MSD	MSD	1	05/18/2017	05:52:56 AM
45	N024184-002C	SAMP	1	05/18/2017	05:57:46 AM
46	N024184-003C	SAMP	1	05/18/2017	06:02:37 AM
47	N024184-004C	SAMP	1	05/18/2017	06:07:29 AM
8	CCV1	CCV	1	05/18/2017	06:12:20 AM
1	CCB1	CCB	1	05/18/2017	06:17:11 AM
36	CCB1	CCB	1	05/18/2017	06:24:45 AM
48	N024184-005C	SAMP	1	05/18/2017	06:29:06 AM
49	N024184-006C	SAMP	1	05/18/2017	06:33:58 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
50	N024184-007C	SAMP	1	05/18/2017	06:38:51 AM
51	N024184-008C	SAMP	1	05/18/2017	06:43:42 AM
52	N024184-009C	SAMP	1	05/18/2017	06:48:33 AM
53	N024184-010C	SAMP	1	05/18/2017	06:53:24 AM
54	N024184-011C	SAMP	1	05/18/2017	06:58:16 AM
55	N024184-012C	SAMP	1	05/18/2017	07:03:07 AM
56	N024184-013C	SAMP	1	05/18/2017	07:07:58 AM
57	MB-62242	MBLK	1	05/18/2017	07:12:49 AM
8	CCV2	CCV	1	05/18/2017	07:17:10 AM
36	CCB2	CCB	1	05/18/2017	07:22:02 AM
58	LCS-62242	LCS	1	05/18/2017	07:26:23 AM
59	N024191-002C	SAMP	1	05/18/2017	07:31:14 AM
60	N024191-002C	SAMP	5	05/18/2017	07:36:05 AM
61	N024191-002C-PS	PS	1	05/18/2017	07:40:56 AM
62	N024191-002C-MS	MS	1	05/18/2017	07:45:48 AM
63	N024191-002C-MSD	MSD	1	05/18/2017	07:50:40 AM
64	N024191-003C	SAMP	1	05/18/2017	07:55:32 AM
65	N024191-004C	SAMP	1	05/18/2017	08:00:24 AM
66	N024191-005C	SAMP	1	05/18/2017	08:05:15 AM
67	N024191-006C	SAMP	1	05/18/2017	08:10:07 AM
8	CCV3	CCV	1	05/18/2017	08:14:59 AM
8	CCV3	CCV	1	05/18/2017	08:19:04 AM
36	CCB3	CCB	1	05/18/2017	08:23:54 AM
68	N024191-007C	SAMP	1	05/18/2017	08:28:46 AM
69	N024191-008C	SAMP	1	05/18/2017	08:33:38 AM
70	N024191-009C	SAMP	1	05/18/2017	08:38:29 AM
71	N024191-010C	SAMP	1	05/18/2017	08:43:19 AM
72	N024191-011C	SAMP	1	05/18/2017	08:48:11 AM
73	N024191-012C	SAMP	1	05/18/2017	08:53:03 AM
74	N024191-013C	SAMP	1	05/18/2017	08:58:14 AM
75	N024191-014C	SAMP	1	05/18/2017	09:03:05 AM
43	N024184-001C-MS	MS	1	05/18/2017	09:07:55 AM
44	N024184-001C-MSD	MSD	1	05/18/2017	09:12:47 AM
8	CCV4	CCV	1	05/18/2017	09:17:37 AM
8	CCV4	CCV	1	05/18/2017	09:24:57 AM
36	CCB4	CCB	1	05/18/2017	09:30:48 AM
2	LLCCV1	CCV2	1	05/18/2017	09:35:09 AM
4	ICSA2	ICSA	1	05/18/2017	09:40:08 AM
5	ICSAB2	ICSAB	1	05/18/2017	09:46:09 AM
76	MB-62243	MBLK	1	05/18/2017	09:54:29 AM
77	LCS-62243	LCS	1	05/18/2017	09:58:51 AM
78	N024182-004B	SAMP	1	05/18/2017	10:03:42 AM
79	N024182-004B	SAMP	5	05/18/2017	10:08:33 AM
80	N024182-004B-PS	PS	1	05/18/2017	10:13:24 AM
81	N024182-004B-MS	MS	1	05/18/2017	10:18:16 AM
82	N024182-004B-MSD	MSD	1	05/18/2017	10:23:07 AM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
83	N024182-005B	SAMP	1	05/18/2017	10:27:58 AM
84	N024182-006B	SAMP	1	05/18/2017	10:32:50 AM
85	N024182-007B	SAMP	1	05/18/2017	10:37:43 AM
8	CCV5	CCV	1	05/18/2017	10:43:34 AM
36	CCB5	CCB	1	05/18/2017	10:49:25 AM
86	N024182-008B	SAMP	1	05/18/2017	10:53:47 AM
87	N024182-011B	SAMP	1	05/18/2017	10:58:38 AM
88	N024182-012B	SAMP	1	05/18/2017	11:04:29 AM
89	N024191-002B	SAMP	1	05/18/2017	11:09:21 AM
90	N024191-003B	SAMP	1	05/18/2017	11:14:12 AM
91	N024191-004B	SAMP	1	05/18/2017	11:19:03 AM
92	N024191-005B	SAMP	1	05/18/2017	11:23:54 AM
93	N024191-006B	SAMP	1	05/18/2017	11:28:46 AM
94	N024191-007B	SAMP	1	05/18/2017	11:33:38 AM
95	N024191-008B	SAMP	1	05/18/2017	11:38:30 AM
8	CCV6	CCV	1	05/18/2017	11:43:22 AM
36	CCB6	CCB	1	05/18/2017	11:49:12 AM
96	N024191-009B	SAMP	1	05/18/2017	11:53:33 AM
97	N024191-010B	SAMP	1	05/18/2017	11:58:25 AM
14	N024191-011B	SAMP	1	05/18/2017	12:03:17 PM
15	N024191-012B	SAMP	1	05/18/2017	12:08:06 PM
16	N024191-013B	SAMP	1	05/18/2017	12:12:56 PM
17	N024191-014B	SAMP	1	05/18/2017	12:17:45 PM
8	CCV7	CCV	1	05/18/2017	12:22:34 PM
36	CCB7	CCB	1	05/18/2017	12:28:25 PM
2	LLCCV2	CCV2	1	05/18/2017	12:32:46 PM
4	ICSA3	ICSA	1	05/18/2017	12:37:35 PM
5	ICSAB3	ICSAB	1	05/18/2017	12:43:36 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/15/2017 1:00:00 P**
Prep End Date: **5/15/2017 5:00:00 P**
Prep Batch **62242** Prep Code: **3010_W**

Reviewed/ Date: 5/25/2017
Initials/ Date: for 5/25/2017
Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62242	Aqueous		25	☐	0	0	25	1.000		
MB-62242	Aqueous		25	☐	0	0	25	1.000		
N024191-002C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-002C-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-003C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-004C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-005C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-006C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-007C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-008C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-009C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-010C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-011C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8994	HYDROCHLORIC ACID
9001	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-170430B	ICP Solution B	LCS,MS,MSD	0.5
MWST-170430J	ICP Solution A	LCS,MS,MSD	0.5

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/15/2017 1:00:00 P**
Prep End Date: **5/15/2017 5:00:00 P**

Reviewed/ Date: 5/25/2017
Initials/ Date: 5/25/2017

Prep Batch **62242** Prep Code: **3010_W** Technician: **Mark Gesmundo**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024191-012C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-013C	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-014C	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8994	HYDROCHLORIC ACID
9001	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
MWST-161201F	ICP Solution C	LCS,MS,MSD	0.5
MWST-170430B	ICP Solution B	LCS,MS,MSD	0.5
MWST-170430J	ICP Solution A	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170518A

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Iron								
CalBlk	05/18/2017	04:19:29 AM	Fe	273.953	206	0.00	mg/L	
Standard1	05/18/2017	04:23:47 AM	Fe	273.953	564	0.0200	mg/L	
Standard2	05/18/2017	04:28:36 AM	Fe	273.953	1875	0.050	mg/L	
Standard3	05/18/2017	04:33:27 AM	Fe	273.953	53835	2.000	mg/L	
Standard4	05/18/2017	04:38:16 AM	Fe	273.953	136480	5.000	mg/L	
Standard5	05/18/2017	04:43:05 AM	Fe	273.953	203957	7.500	mg/L	
Standard6	05/18/2017	04:47:54 AM	Fe	273.953	263460	10.000	mg/L	
Standard7	05/18/2017	04:52:18 AM	Fe	273.953	519335	20.000	mg/L	0.9999

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648681**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10083.544	20	10000	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ZZZZZZ**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648683**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	20.958	20	20.00	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10250.182	20	10000	0	103	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648709**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10221.861	20	10000	0	102	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648761**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	9401.142	20	10000	0	94.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCV**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648774**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	10376.682	20	10000	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ZZZZZZ**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648776**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	19.776	20	20.00	0	98.9	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648682**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.160481	20									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.347	20									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648710**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	0.912	20									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648762**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-0.564682	20									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **CCB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648775**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	-1.339913	20									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSA**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648684**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	502572.383	50	500000	0	101	80	120				
Calcium	505404.031	500	500000	0	101	80	120				
Iron	168794.925	20	200000	0	84.4	80	120				
Magnesium	473295.313	100	500000	0	94.7	80	120				

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSAB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648685**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	556855.710	50	500000	0	111	80	120				
Calcium	557992.606	500	500000	0	112	80	120				
Iron	182196.372	20	200000	0	91.1	80	120				
Magnesium	517899.110	100	500000	0	104	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSA**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648777**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	511005.246	50	500000	0	102	80	120				
Calcium	518561.220	500	500000	0	104	80	120				
Iron	168055.784	20	200000	0	84.0	80	120				
Magnesium	474556.902	100	500000	0	94.9	80	120				

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSAB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	567269.667	50	500000	0	113	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID: **ICSAB**	Batch ID: **R115320**	TestNo: **EPA 6010B**		Analysis Date: **5/18/2017**	SeqNo: **2648778**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	573041.929	500	500000	0	115	80	120				
Iron	183240.534	20	200000	0	91.6	80	120				
Magnesium	523415.003	100	500000	0	105	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.011	101.08	65-125	PASS
Standard2	ICAL	1	1.029	102.94	65-125	PASS
Standard3	ICAL	1	1.0085	100.85	65-125	PASS
Standard4	ICAL	1	0.99	98.76	65-125	PASS
Standard5	ICAL	1	1.007	100.7	65-125	PASS
Standard6	ICAL	1	1.0001	100.01	65-125	PASS
Standard7	ICAL	1	1.0061	100.61	65-125	PASS
ICV	ICV	1	1.0078	100.78	65-125	PASS
ICB	ICB	1	1.043	104.26	65-125	PASS
LLICV	CCV1	1	1.058	105.75	65-125	PASS
ICSA1	ICSA	1	0.95	95.06	65-125	PASS
ICSAB1	ICSAB	1	0.87	86.85	65-125	PASS
CCV1	CCV	1	1.051	105.09	65-125	PASS
CCB1	CCB	1	0.73	72.81	65-125	PASS
CCB1	CCB	1	1.059	105.91	65-125	PASS
MB-62242	MBLK	1	1.096	109.58	65-125	PASS
CCV2	CCV	1	1.09	108.98	65-125	PASS
CCB2	CCB	1	1.095	109.54	65-125	PASS
LCS-62242	LCS	1	1.0018	100.18	65-125	PASS
N024191-002C	SAMP	1	1.07	107	65-125	PASS
N024191-002C	SAMP	5	1.083	108.29	65-125	PASS
N024191-002C-PS	PS	1	1.073	107.3	65-125	PASS
N024191-002C-MS	MS	1	1.056	105.65	65-125	PASS
N024191-002C-MSD	MSD	1	1.064	106.41	65-125	PASS
N024191-003C	SAMP	1	1.063	106.34	65-125	PASS
N024191-004C	SAMP	1	1.076	107.62	65-125	PASS
N024191-005C	SAMP	1	1.075	107.52	65-125	PASS
N024191-006C	SAMP	1	1.077	107.73	65-125	PASS
CCV3	CCV	1	1.021	102.11	65-125	PASS
CCV3	CCV	1	1.016	101.64	65-125	PASS
CCB3	CCB	1	1.041	104.1	65-125	PASS
N024191-007C	SAMP	1	1.031	103.14	65-125	PASS
N024191-008C	SAMP	1	1.041	104.12	65-125	PASS
N024191-009C	SAMP	1	1.07	106.96	65-125	PASS
N024191-010C	SAMP	1	1.031	103.13	65-125	PASS
N024191-011C	SAMP	1	1.039	103.93	65-125	PASS
N024191-012C	SAMP	1	1.062	106.21	65-125	PASS
N024191-013C	SAMP	1	1.056	105.6	65-125	PASS
N024191-014C	SAMP	1	1.054	105.35	65-125	PASS
CCV4	CCV	1	1.067	106.72	65-125	PASS

INTERNAL STANDARD: 170518A

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CCV4	CCV	1	1.037	103.71	65-125	PASS
CCB4	CCB	1	1.075	107.46	65-125	PASS
LLCCV1	CCV2	1	1.11	110.89	65-125	PASS
ICSA2	ICSA	1	1	99.61	65-125	PASS
ICSAB2	ICSAB	1	0.91	90.98	65-125	PASS

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Water

Dilution Test Summary

Work Order No.: N024191
Test Method: EPA 6010B
Analysis Date: 5/18/2017

Matrix: Groundwater
Batch No.: 62242

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Fe. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024191-002C DT 5X	Iron	ug/L	0	NA	18.63217	100.00%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WPGEPPB

Sample ID	**N024191-002C-PS**	SampType: **PS**	TestCode: **6010_WPGE**	Units: **ug/L**	Prep Date:	RunNo: **115320**
Client ID:	**ZZZZZZ**	Batch ID: **62242**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **5/18/2017**	SeqNo: **2648753**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Iron	118.535	20	100.0	18.63	99.9	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62222
ASSET #: N024191

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/18/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of Se in N024191-002B (sample reference), 006B, 011B & 014B is failed > 15%. Se for rerun.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/25/2017 Date:

2nd Level Reviewer 5/25/2017 Date:

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62222
ASSET #: N024191

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 5/24/2017

Method:

[ ] EPA 6010B / 200.7
[ ] EPA 7470A / 7471A/245.1
[X] EPA 6020 / 200.8
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)		X				
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.			X			
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .			X			
24. LCS compounds within control limits.			X			
25. MS/MSD, RPD's are within control limits			X			
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%RSD of Se in STD2 failed > 20%. However %RSD of LLICV passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 5/25/2017 Date:

2nd Level Reviewer 5/25/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Arsenic concentration, in ug/L in the original sample as follows:

Arsenic , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N024191-002B** , the concentration in ug/L is calculated as follows:

Arsenic , ug/L = 2.24161 * 1 * (25/25)

Arsenic , ug/L = 2.24161

Reporting results in two significant figures,

Arsenic , ug/L = 2.2

% RSD SUMMARY

PERCENT RSD SUMMARY: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.1	5.91	15	PASS	0.098	10.56	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.52	1.79	15	PASS	0.48	1.032	15	PASS
Std3-5/50 ppb	ICAL	1	5.13	1.43	15	PASS	5.021	1.89	15	PASS
Std4-10/100 ppb	ICAL	1	10.12	2.12	15	PASS	10.096	1.78	15	PASS
Std5-20/200 ppb	ICAL	1	20.39	0.81	15	PASS	20.36	1.73	15	PASS
Std6-40/400 ppb	ICAL	1	40.18	0.56	15	PASS	39.86	0.61	15	PASS
Std7-100/1000 ppb	ICAL	1	99.83	0.92	15	PASS	100.02	1.032	15	PASS
Std8-200/2000 ppb	ICAL	1	226.72	0.94	15	PASS	199.98	0.86	15	PASS
ICV	ICV	1	102.81	0.56	15	PASS	10.093	3.058	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LLICV	CCV1	1	1.17	2.31	20	PASS	1.094	1.25	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	0.058	26.57	15	<PQL
ICSAB1	ICSAB	1	21.13	1.78	15	PASS	19.14	0.91	15	PASS
LLICV	CCV1	1	1.2	3.34	20	PASS	1.074	1.94	20	PASS
CCV1	CCV	1	20.82	0.39	15	PASS	20.32	1.36	15	PASS
CCB1	CCB	1	0.0073	59.47	15	<PQL	<0.000	N/A	15	<PQL
CCV2	CCV	1	20.42	0.85	15	PASS	20.25	1.82	15	PASS
CCB2	CCB	1	0.011	22.38	15	<PQL	0.00093	468.35	15	<PQL
MB-62222	MBLK	1	<0.000	N/A	15	<PQL	0.003	92.63	15	<PQL
LCS-62222	LCS	1	104.9	0.45	15	PASS	10.047	0.77	15	PASS
N024191-002B	SAMP	1	117.78	0.65	15	PASS	0.057	42.28	15	<PQL
N024191-002B	SAMP	5	24.95	0.69	15	PASS	0.0059	125.69	15	<PQL
CCV3	CCV	1	20.36	0.93	15	PASS	20.39	1.19	15	PASS
CCB3	CCB	1	0.011	62.54	15	<PQL	<0.000	N/A	15	<PQL
N024191-002B-PS	PS	1	245.53	1.1	15	PASS	9.83	0.81	15	PASS
N024191-002B-MS	MS	1	247.94	0.39	15	PASS	9.63	1.57	15	PASS
N024191-002B-MSD	MSD	1	246.67	1.21	15	PASS	9.63	0.91	15	PASS
N024191-003B	SAMP	1	114.25	0.1	15	PASS	0.087	26.73	15	<PQL
N024191-004B	SAMP	1	121.037	0.55	15	PASS	0.043	22.31	15	<PQL
N024191-005B	SAMP	1	116.41	0.38	15	PASS	0.1	4.99	15	PASS
N024191-006B	SAMP	1	114.68	0.33	15	PASS	0.04	38.65	15	<PQL
N024191-007B	SAMP	1	137.79	0.24	15	PASS	0.023	36.7	15	<PQL
N024191-008B	SAMP	1	139.32	0.67	15	PASS	0.04	25.13	15	<PQL
N024191-009B	SAMP	1	118.56	0.76	15	PASS	0.074	13.98	15	PASS
CCV4	CCV	1	20.13	0.51	15	PASS	20.89	1.31	15	PASS
CCB4	CCB	1	0.0041	84.14	15	<PQL	<0.000	N/A	15	<PQL
N024191-010B	SAMP	1	111.44	0.37	15	PASS	0.044	51.76	15	<PQL
N024191-011B	SAMP	1	118.17	0.94	15	PASS	0.03	7.073	15	PASS
N024191-012B	SAMP	1	112.83	0.56	15	PASS	0.077	12.83	15	PASS
N024191-013B	SAMP	1	117.44	0.21	15	PASS	0.044	11.54	15	PASS

PERCENT RSD SUMMARY: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	137 Ba [3]				52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024191-014B	SAMP	1	115.074	0.53	15	PASS	0.069	27.37	15	<PQL
CCV5	CCV	1	19.76	1.49	15	PASS	21.35	0.75	15	PASS
CCB5	CCB	1	0.0072	48.00084	15	<PQL	0.0029	193	15	<PQL
N024191-002B	SAMP	25	4.53	0.94	15	PASS	<0.000	N/A	15	<PQL
N024191-002B-PS	PS	5	47.072	0.67	15	PASS	2.25	1.95	15	PASS
N024191-002B-MS	MS	5	46.77	0.51	15	PASS	2.25	5.5	15	PASS
N024191-002B-MSD	MSD	5	46.87	1.13	15	PASS	2.25	2.67	15	PASS
CCV6	CCV	1	19.71	2.25	15	PASS	21.27	2.29	15	PASS
CCB6	CCB	1	0.02	31.28	15	<PQL	0.025	60.32	15	<PQL
LLCCV1	CCV2	1	1.2	3.027	20	PASS	1.11	4.46	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	0.093	21.13	15	<PQL
ICSAB2	ICSAB	1	22.84	0.6	15	PASS	19.79	1.088	15	PASS

PERCENT RSD SUMMARY: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.091	13.88	15	PASS	0.1	4.54	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.49	1.55	15	PASS	0.56	7.12	15	PASS
Std3-5/50 ppb	ICAL	1	4.94	3.18	15	PASS	5.12	6.79	15	PASS
Std4-10/100 ppb	ICAL	1	9.91	1.88	15	PASS	9.9	2.065	15	PASS
Std5-20/200 ppb	ICAL	1	20.18	1.073	15	PASS	20.34	2.26	15	PASS
Std6-40/400 ppb	ICAL	1	39.37	1.4	15	PASS	40.22	1.9	15	PASS
Std7-100/1000 ppb	ICAL	1	99.48	1.15	15	PASS	98.96	1.21	15	PASS
Std8-200/2000 ppb	ICAL	1	200.38	0.95	15	PASS	200.45	0.93	15	PASS
ICV	ICV	1	100.66	2.51	15	PASS	10.026	0.75	15	PASS
ICB	ICB	1	<0.000	N/A	15	<PQL	0.022	45.83	15	<PQL
LLICV	CCV1	1	0.56	0.93	20	PASS	0.11	24.49	20	NR!
ICSA1	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	22.91	0.23	15	PASS	20.52	0.64	15	PASS
LLICV	CCV1	1	0.52	7.67	20	PASS	0.093	8.64	20	PASS
CCV1	CCV	1	20.17	1.41	15	PASS	19.96	0.46	15	PASS
CCB1	CCB	1	0.018	26.39	15	<PQL	0.00002	67561.074	15	<PQL
CCV2	CCV	1	20.27	0.87	15	PASS	19.74	0.77	15	PASS
CCB2	CCB	1	0.0016	134.58	15	<PQL	0.0044	265.76	15	<PQL
MB-62222	MBLK	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
LCS-62222	LCS	1	100.12	1.27	15	PASS	9.69	0.066	15	PASS
N024191-002B	SAMP	1	<0.000	N/A	15	<PQL	2.24	1.42	15	PASS
N024191-002B	SAMP	5	<0.000	N/A	15	<PQL	0.47	10.043	15	PASS
CCV3	CCV	1	19.95	1.44	15	PASS	19.88	1.22	15	PASS
CCB3	CCB	1	0.013	68.67	15	<PQL	<0.000	N/A	15	<PQL
N024191-002B-PS	PS	1	94.055	1.38	15	PASS	11.93	1.48	15	PASS
N024191-002B-MS	MS	1	94.98	0.61	15	PASS	12.096	2.67	15	PASS
N024191-002B-MSD	MSD	1	93.18	0.58	15	PASS	12.28	1.66	15	PASS
N024191-003B	SAMP	1	<0.000	N/A	15	<PQL	2.13	6.077	15	PASS
N024191-004B	SAMP	1	1.64	10.82	15	PASS	2.16	9.43	15	PASS
N024191-005B	SAMP	1	<0.000	N/A	15	<PQL	2.055	5.39	15	PASS
N024191-006B	SAMP	1	<0.000	N/A	15	<PQL	2.012	2.87	15	PASS
N024191-007B	SAMP	1	119.65	1.29	15	PASS	2.12	0.88	15	PASS
N024191-008B	SAMP	1	115.66	0.95	15	PASS	2.094	0.85	15	PASS
N024191-009B	SAMP	1	<0.000	N/A	15	<PQL	2.18	2.37	15	PASS
CCV4	CCV	1	20.38	0.79	15	PASS	20.31	2.76	15	PASS
CCB4	CCB	1	0.0011	845.25	15	<PQL	<0.000	N/A	15	<PQL
N024191-010B	SAMP	1	<0.000	N/A	15	<PQL	2.03	5.32	15	PASS
N024191-011B	SAMP	1	<0.000	N/A	15	<PQL	2.15	6.75	15	PASS
N024191-012B	SAMP	1	<0.000	N/A	15	<PQL	2.1	6.73	15	PASS
N024191-013B	SAMP	1	<0.000	N/A	15	<PQL	2.11	1.41	15	PASS

PERCENT RSD SUMMARY: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]				75 As [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024191-014B	SAMP	1	<0.000	N/A	15	<PQL	2.26	3.64	15	PASS
CCV5	CCV	1	20.5	0.76	15	PASS	20.14	3.091	15	PASS
CCB5	CCB	1	0.0061	22.34	15	<PQL	<0.000	N/A	15	<PQL
N024191-002B	SAMP	25	<0.000	N/A	15	<PQL	0.077	50.39	15	<PQL
N024191-002B-PS	PS	5	21.71	1.13	15	PASS	2.74	9.047	15	PASS
N024191-002B-MS	MS	5	21.66	2.27	15	PASS	2.69	4.51	15	PASS
N024191-002B-MSD	MSD	5	21.7	1.81	15	PASS	2.71	4.88	15	PASS
CCV6	CCV	1	20.21	2.48	15	PASS	19.92	2.19	15	PASS
CCB6	CCB	1	0.0059	101.55	15	<PQL	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	0.53	2.41	20	PASS	0.12	14.34	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	23.4	1.19	15	PASS	20.24	1.72	15	PASS

PERCENT RSD SUMMARY: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.11	49.021	15	<PQL	0.1	17.78	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.48	19.64	15	<PQL	0.52	8.76	15	PASS
Std3-5/50 ppb	ICAL	1	4.95	6.92	15	PASS	4.72	7.16	15	PASS
Std4-10/100 ppb	ICAL	1	9.76	9.22	15	PASS	9.76	5.79	15	PASS
Std5-20/200 ppb	ICAL	1	19.54	4.26	15	PASS	20.67	0.22	15	PASS
Std6-40/400 ppb	ICAL	1	40.83	2.75	15	PASS	39.76	5.79	15	PASS
Std7-100/1000 ppb	ICAL	1	99.0082	0.98	15	PASS	103.54	0.1	15	PASS
Std8-200/2000 ppb	ICAL	1	200.39	1.73	15	PASS	211.96	0.6	15	PASS
ICV	ICV	1	10.29	3.15	15	PASS	10.91	1.99	15	PASS
ICB	ICB	1	0.033	119.22	15	<PQL	0.21	7.65	15	PASS
LLICV	CCV1	1	0.44	15.26	20	PASS	0.52	6.34	20	PASS
ICSA1	ICSA	1	0.0079	310.28	15	<PQL	0.044	20.95	15	<PQL
ICSAB1	ICSAB	1	18.29	2.37	15	PASS	23.086	1.59	15	PASS
LLICV	CCV1	1	0.46	31.27	20	<PQL	0.52	3.93	20	PASS
CCV1	CCV	1	19.86	2.56	15	PASS	18.54	0.93	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL	0.089	19.7	15	<PQL
CCV2	CCV	1	19.83	1.4	15	PASS	18.42	0.85	15	PASS
CCB2	CCB	1	0.00037	3095.59	15	<PQL	0.11	11.2	15	PASS
MB-62222	MBLK	1	<0.000	0	15	PASS	0.0087	87.97	15	<PQL
LCS-62222	LCS	1	9.72	2.00012	15	PASS	9.41	1.13	15	PASS
N024191-002B	SAMP	1	1.41	15.22	15	NR!	5.36	0.82	15	PASS
N024191-002B	SAMP	5	0.3	40.15	15	<PQL	1.018	3.25	15	PASS
CCV3	CCV	1	21.74	3.023	15	PASS	20.31	2.18	15	PASS
CCB3	CCB	1	0.0088	295.42	15	<PQL	0.084	7.76	15	PASS
N024191-002B-PS	PS	1	10.87	6.23	15	PASS	16.46	1.22	15	PASS
N024191-002B-MS	MS	1	10.95	1.85	15	PASS	16.77	1.53	15	PASS
N024191-002B-MSD	MSD	1	10.97	6.64	15	PASS	16.69	0.13	15	PASS
N024191-003B	SAMP	1	1.5	9.71	15	PASS	5.22	2.25	15	PASS
N024191-004B	SAMP	1	1.59	10.05	15	PASS	5.4	1.42	15	PASS
N024191-005B	SAMP	1	1.43	7.8	15	PASS	5.2	0.69	15	PASS
N024191-006B	SAMP	1	1.47	20.56	15	NR!	5.097	1.2	15	PASS
N024191-007B	SAMP	1	0.92	10.34	15	PASS	6.53	3.16	15	PASS
N024191-008B	SAMP	1	0.83	14.31	15	PASS	6.62	1.33	15	PASS
N024191-009B	SAMP	1	1.59	5.27	15	PASS	5.25	1.16	15	PASS
CCV4	CCV	1	20.65	2.14	15	PASS	20.36	0.79	15	PASS
CCB4	CCB	1	0.04	57.74	15	<PQL	0.091	27.57	15	<PQL
N024191-010B	SAMP	1	1.45	14.19	15	PASS	5.045	2.036	15	PASS
N024191-011B	SAMP	1	1.82	18.84	15	NR!	5.33	1.087	15	PASS
N024191-012B	SAMP	1	1.61	6.27	15	PASS	5.041	1.79	15	PASS
N024191-013B	SAMP	1	1.42	13.75	15	PASS	5.23	3.9	15	PASS

PERCENT RSD SUMMARY: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]				95 Mo [2]			
			Conc. [ppb]	RSD	Criteria	Comment	Conc. [ppb]	RSD	Criteria	Comment
N024191-014B	SAMP	1	1.51	15.99	15	NR!	5.09	0.62	15	PASS
CCV5	CCV	1	21.24	7.95	15	PASS	20.19	2.097	15	PASS
CCB5	CCB	1	0.029	52.93	15	<PQL	0.086	22.3	15	<PQL
N024191-002B	SAMP	25	0.054	54.33	15	<PQL	0.18	6.35	15	PASS
N024191-002B-PS	PS	5	2.59	5.21	15	PASS	3.44	2.23	15	PASS
N024191-002B-MS	MS	5	3.093	17.83	15	NR!	3.42	2.53	15	PASS
N024191-002B-MSD	MSD	5	2.52	4.45	15	PASS	3.4	1.75	15	PASS
CCV6	CCV	1	20.82	1.92	15	PASS	20.17	0.97	15	PASS
CCB6	CCB	1	<0.000	0	15	PASS	0.024	29.14	15	<PQL
LLCCV1	CCV2	1	0.53	14.25	20	PASS	0.51	5.94	20	PASS
ICSA2	ICSA	1	0.00072	1678.8	15	<PQL	0.031	17.54	15	<PQL
ICSAB2	ICSAB	1	18.98	4.46	15	PASS	23.16	1.2	15	PASS

PERCENT RSD SUMMARY: 170524A

Instrument ID: ICPMS-02

Sample Name	Type	DF	78 Se [1]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.089	52.8	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.59	20.79	15	NR!
Std3-5/50 ppb	ICAL	1	4.95	12.12	15	PASS
Std4-10/100 ppb	ICAL	1	9.8	5.1	15	PASS
Std5-20/200 ppb	ICAL	1	19.86	3.52	15	PASS
Std6-40/400 ppb	ICAL	1	39.56	2.8	15	PASS
Std7-100/1000 ppb	ICAL	1	99.064	1.53	15	PASS
Std8-200/2000 ppb	ICAL	1	200.58	0.43	15	PASS
ICV	ICV	1	10.037	3.24	15	PASS
ICB	ICB	1	0.028	132.44	15	<PQL
LLICV	CCV1	1	0.42	8.23	20	PASS
ICSA1	ICSA	1	0.02	124.58	15	<PQL
ICSAB1	ICSAB	1	18.77	3.76	15	PASS
LLICV	CCV1	1	0.37	23.12	20	<PQL
N024191-002B	SAMP	1	1.49	9.88	15	PASS
N024191-006B	SAMP	1	1.46	4.11	15	PASS
N024191-011B	SAMP	1	1.49	4.46	15	PASS
N024191-014B	SAMP	1	1.51	8.7	15	PASS
N024191-002B	SAMP	1	1.63	13.7	15	PASS
N024191-006B	SAMP	1	1.48	5.53	15	PASS
N024191-011B	SAMP	1	1.64	13.45	15	PASS
N024191-014B	SAMP	1	1.5	4.65	15	PASS
CCV1	CCV	1	19.77	1.87	15	PASS
CCB1	CCB	1	0.008	86.64	15	<PQL
LLCCV1	CCV2	1	0.38	14.69	20	PASS
ICSA2	ICSA	1	0.011	99.32	15	<PQL
ICSAB2	ICSAB	1	18.51	8.13	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170518A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518001.D	RINSE	RINSE	1	05/18/17 12:03 PM
A0518002.D	Cal Blank	IBLK	1	05/18/17 12:09 PM
A0518003.D	Std1-0.1/1 ppb	ICAL	1	05/18/17 12:14 PM
A0518004.D	Std2-0.5/5 ppb	ICAL	1	05/18/17 12:20 PM
A0518005.D	Std3-5/50 ppb	ICAL	1	05/18/17 12:25 PM
A0518006.D	Std4-10/100 ppb	ICAL	1	05/18/17 12:31 PM
A0518007.D	Std5-20/200 ppb	ICAL	1	05/18/17 12:37 PM
A0518008.D	Std6-40/400 ppb	ICAL	1	05/18/17 12:42 PM
A0518009.D	Std7-100/1000 ppb	ICAL	1	05/18/17 12:48 PM
A0518010.D	Std8-200/2000 ppb	ICAL	1	05/18/17 12:53 PM
A0518011.D	ICV	ICV	1	05/18/17 12:59 PM
A0518012.D	ICB	ICB	1	05/18/17 1:05 PM
A0518013.D	LLICV	CCV1	1	05/18/17 1:11 PM
A0518014.D	ICSA1	ICSA	1	05/18/17 1:17 PM
A0518015.D	ICSAB1	ICSAB	1	05/18/17 1:23 PM
A0518016.D	LLICV	CCV1	1	05/18/17 1:29 PM
A0518017.D	N024089-015B	SAMP	1	05/18/17 1:34 PM
A0518018.D	N024089-015A	SAMP	1	05/18/17 1:40 PM
A0518019.D	N024160-002B	SAMP	1	05/18/17 1:50 PM
A0518020.D	N024160-002A	SAMP	1	05/18/17 1:56 PM
A0518021.D	N024160-082B	SAMP	1	05/18/17 2:02 PM
A0518022.D	N024160-008A	SAMP	1	05/18/17 2:07 PM
A0518023.D	N024160-009B	SAMP	1	05/18/17 2:13 PM
A0518024.D	N024160-009A	SAMP	1	05/18/17 2:18 PM
A0518025.D	N024211-001A	SAMP	1	05/18/17 2:24 PM
A0518026.D	N024211-002A	SAMP	1	05/18/17 2:29 PM
A0518027.D	CCV1	CCV	1	05/18/17 2:35 PM
A0518028.D	CCB1	CCB	1	05/18/17 2:41 PM
A0518029.D	MB-62221	MBLK	1	05/18/17 2:46 PM
A0518030.D	LCS-62221	LCS	1	05/18/17 2:52 PM
A0518031.D	N024182-001B	SAMP	1	05/18/17 2:57 PM
A0587032.D	N024182-001B	SAMP	5	05/18/17 3:03 PM
A0518033.D	N024182-001B-PS	PS	1	05/18/17 3:09 PM
A0518034.D	N024182-001B-MS	MS	1	05/18/17 3:14 PM
A0518035.D	N024182-001B-MSD	MSD	1	05/18/17 3:20 PM
A0518036.D	N024182-002B	SAMP	1	05/18/17 3:25 PM
A0518037.D	N024182-003B	SAMP	1	05/18/17 3:31 PM
A0518038.D	N024182-004B	SAMP	1	05/18/17 3:37 PM
A0518039.D	CCV2	CCV	1	05/18/17 3:42 PM
A0518040.D	CCB2	CCB	1	05/18/17 3:48 PM
A0518041.D	N024182-005B	SAMP	1	05/18/17 3:53 PM
A0518042.D	N024182-006B	SAMP	1	05/18/17 3:59 PM

INJECTION LOG: 170518A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518043.D	N024182-007B	SAMP	1	05/18/17 4:05 PM
A0518044.D	N024182-008B	SAMP	1	05/18/17 4:10 PM
A0518045.D	N024182-011B	SAMP	1	05/18/17 4:16 PM
A0518046.D	N024182-012B	SAMP	1	05/18/17 4:21 PM
A0518047.D	MB-62222	MBLK	1	05/18/17 4:27 PM
A0518048.D	LCS-62222	LCS	1	05/18/17 4:32 PM
A0518049.D	N024191-002B	SAMP	1	05/18/17 4:38 PM
A0518050.D	N024191-002B	SAMP	5	05/18/17 4:44 PM
A0518051.D	CCV3	CCV	1	05/18/17 4:49 PM
A0518052.D	CCB3	CCB	1	05/18/17 4:55 PM
A0518053.D	N024191-002B-PS	PS	1	05/18/17 5:00 PM
A0518054.D	N024191-002B-MS	MS	1	05/18/17 5:06 PM
A0518055.D	N024191-002B-MSD	MSD	1	05/18/17 5:12 PM
A0518056.D	N024191-003B	SAMP	1	05/18/17 5:17 PM
A0518057.D	N024191-004B	SAMP	1	05/18/17 5:23 PM
A0518058.D	N024191-005B	SAMP	1	05/18/17 5:28 PM
A0518059.D	N024191-006B	SAMP	1	05/18/17 5:34 PM
A0518060.D	N024191-007B	SAMP	1	05/18/17 5:39 PM
A0518061.D	N024191-008B	SAMP	1	05/18/17 5:45 PM
A0518062.D	N024191-009B	SAMP	1	05/18/17 5:51 PM
A0518063.D	CCV4	CCV	1	05/18/17 5:56 PM
A0518064.D	CCB4	CCB	1	05/18/17 6:02 PM
A0518065.D	N024191-010B	SAMP	1	05/18/17 6:07 PM
A0518066.D	N024191-011B	SAMP	1	05/18/17 6:13 PM
A0518067.D	N024191-012B	SAMP	1	05/18/17 6:18 PM
A0518068.D	N024191-013B	SAMP	1	05/18/17 6:24 PM
A0518069.D	N024191-014B	SAMP	1	05/18/17 6:30 PM
A0518070.D	N024182-001B	SAMP	25	05/18/17 6:35 PM
A0518071.D	N024182-001B-PS	PS	5	05/18/17 6:41 PM
A0518072.D	N024182-001B-MS	MS	5	05/18/17 6:46 PM
A0518073.D	N024182-001B-MSD	MSD	5	05/18/17 6:52 PM
A0518074.D	N024182-006B	SAMP	5	05/18/17 6:58 PM
A0518075.D	CCV5	CCV	1	05/18/17 7:03 PM
A0518076.D	CCB5	CCB	1	05/18/17 7:09 PM
A0518077.D	N024182-008B	SAMP	5	05/18/17 7:14 PM
A0518078.D	N024182-011B	SAMP	5	05/18/17 7:20 PM
A0518079.D	N024191-002B	SAMP	25	05/18/17 7:26 PM
A0518080.D	N024191-002B-PS	PS	5	05/18/17 7:31 PM
A0518081.D	N024191-002B-MS	MS	5	05/18/17 7:37 PM
A0518082.D	N024191-002B-MSD	MSD	5	05/18/17 7:42 PM
A0518083.D	CCV6	CCV	1	05/18/17 7:48 PM
A0518084.D	CCB6	CCB	1	05/18/17 7:54 PM

INJECTION LOG: 170518A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0518085.D	LLCCV1	CCV2	1	05/18/17 8:00 PM
A0518086.D	ICSA2	ICSA	1	05/18/17 8:05 PM
A0518087.D	ICSAB2	ICSAB	1	05/18/17 8:11 PM

INJECTION LOG: 170524A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0524001.D	RINSE	RINSE	1	05/24/17 2:11 PM
A0524002.D	Cal Blank	IBLK	1	05/24/17 2:16 PM
A0524003.D	Std1-0.1/1 ppb	ICAL	1	05/24/17 2:22 PM
A0524004.D	Std2-0.5/5 ppb	ICAL	1	05/24/17 2:27 PM
A0524005.D	Std3-5/50 ppb	ICAL	1	05/24/17 2:33 PM
A0524006.D	Std4-10/100 ppb	ICAL	1	05/24/17 2:38 PM
A0524007.D	Std5-20/200 ppb	ICAL	1	05/24/17 2:45 PM
A0524008.D	Std6-40/400 ppb	ICAL	1	05/24/17 2:50 PM
A0524009.D	Std7-100/1000 ppb	ICAL	1	05/24/17 2:56 PM
A0524010.D	Std8-200/2000 ppb	ICAL	1	05/24/17 3:02 PM
A0524011.D	ICV	ICV	1	05/24/17 3:07 PM
A0524012.D	ICB	ICB	1	05/24/17 3:13 PM
A0524013.D	LLICV	CCV1	1	05/24/17 3:18 PM
A0524014.D	ICSA1	ICSA	1	05/24/17 3:24 PM
A0524015.D	ICSAB1	ICSAB	1	05/24/17 3:29 PM
A0524016.D	LLICV	CCV1	1	05/24/17 3:35 PM
A0524017.D	N024191-002B	SAMP	1	05/24/17 3:40 PM
A0524018.D	N024191-006B	SAMP	1	05/24/17 3:46 PM
A0524019.D	N024191-011B	SAMP	1	05/24/17 3:51 PM
A0524020.D	N024191-014B	SAMP	1	05/24/17 3:57 PM
A0524021.D	N024191-002B	SAMP	1	05/24/17 4:03 PM
A0524022.D	N024191-006B	SAMP	1	05/24/17 4:08 PM
A0524023.D	N024191-011B	SAMP	1	05/24/17 4:14 PM
A0524024.D	N024191-014B	SAMP	1	05/24/17 4:19 PM
A0524025.D	CCV1	CCV	1	05/24/17 4:25 PM
A0524026.D	CCB1	CCB	1	05/24/17 4:30 PM
A0524027.D	LLCCV1	CCV2	1	05/24/17 4:36 PM
A0524028.D	ICSA2	ICSA	1	05/24/17 4:41 PM
A0524029.D	ICSAB2	ICSAB	1	05/24/17 4:47 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/13/2017 6:53:59 A**
Prep End Date: **5/13/2017 11:30:00**
Prep Batch **62222** Prep Code: **3010_W_MSDI**

Reviewed/ Date: 5/25/2017
Initials/ Date: 5/25/2017
Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-33**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62222	Aqueous		25	☐	0	0	25	1.000		
MB-62222	Aqueous		25	☐	0	0	25	1.000		
N024191-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-004B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-005B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-006B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-007B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-008B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-009B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-010B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-011B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **5/13/2017 6:53:59 A**
Prep End Date: **5/13/2017 11:30:00**
Reviewed/ Date: 5/25/2017
Initials/ Date: 5/25/2017

Prep Batch **62222** Prep Code: **3010_W_MSDI** Technician: **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**94.8**	**02-33**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
N024191-012B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-013B	Groundwater	<2	25	☐	0	0	25	1.000		
N024191-014B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 18 May 2017 11:43:21 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	68025.20	0.00	
24 Mg	303356.00	0.00	
25 Mg	40031.30	0.00	
26 Mg	46458.70	0.00	
59 Co	415062.00	0.00	
115 In	702226.00	0.00	
206 Pb	166022.00	0.00	
207 Pb	142910.00	0.00	
208 Pb	350748.00	0.00	

RSD (%)

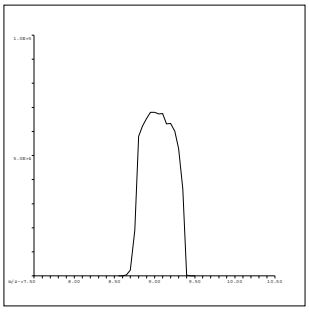
Element	Actual	Required	Flag
9 Be	1.55	5.00	
24 Mg	0.58	5.00	
25 Mg	1.58	5.00	
26 Mg	1.14	5.00	
59 Co	0.70	5.00	
115 In	0.79	5.00	
206 Pb	1.08	5.00	
207 Pb	1.35	5.00	
208 Pb	0.83	5.00	

Ion Ratio

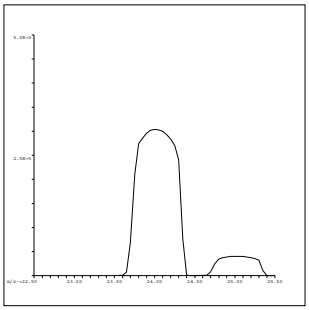
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

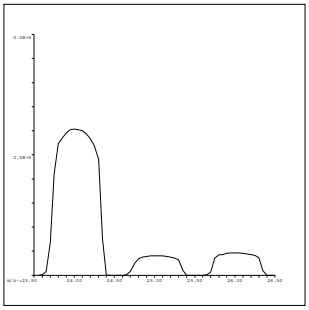
Element	Actual	Required	Flag



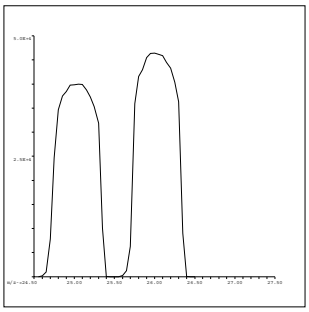
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



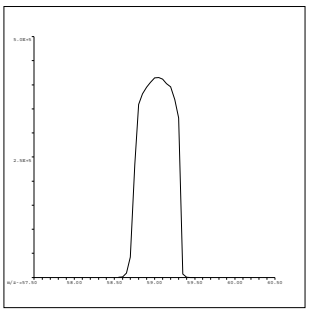
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



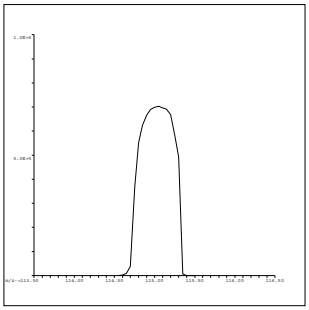
25 Mg
Mass Calib.
Actual: 25.05
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



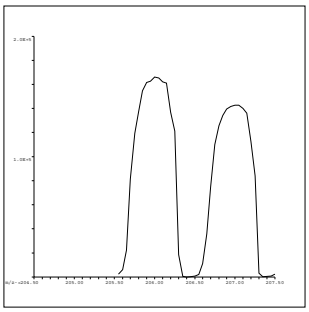
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



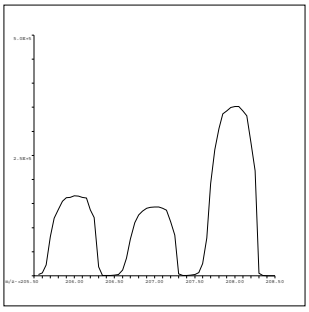
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



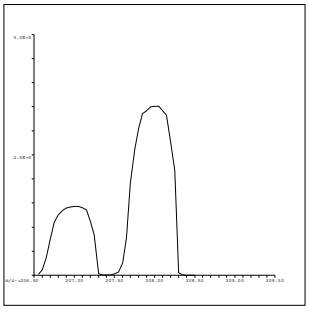
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 24 May 2017 01:46:27 pm
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	99208.00	0.00	
24 Mg	357738.00	0.00	
25 Mg	47659.00	0.00	
26 Mg	55001.00	0.00	
59 Co	498032.00	0.00	
115 In	809201.00	0.00	
206 Pb	214589.00	0.00	
207 Pb	186402.00	0.00	
208 Pb	463334.00	0.00	

RSD (%)

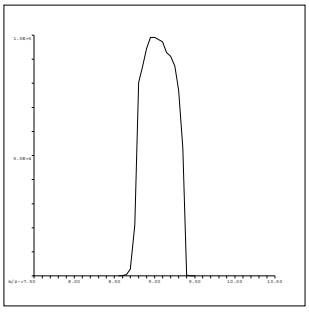
Element	Actual	Required	Flag
9 Be	1.61	5.00	
24 Mg	0.61	5.00	
25 Mg	1.34	5.00	
26 Mg	0.62	5.00	
59 Co	0.68	5.00	
115 In	0.83	5.00	
206 Pb	0.72	5.00	
207 Pb	1.56	5.00	
208 Pb	1.12	5.00	

Ion Ratio

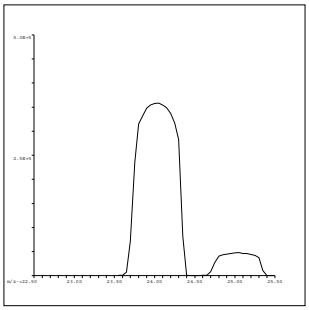
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

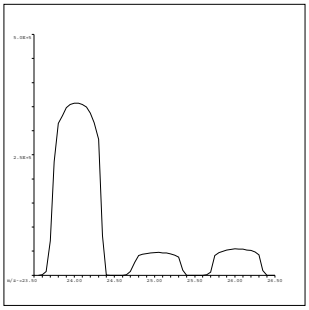
Element	Actual	Required	Flag



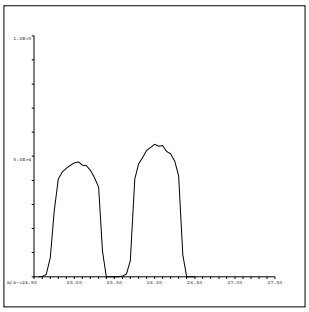
9 Be
Mass Calib.
   Actual: 9.00
   Required: 8.90-9.10
   Flag:
Peak Width
   Actual: 0.60
   Required: 0.75
   Flag:



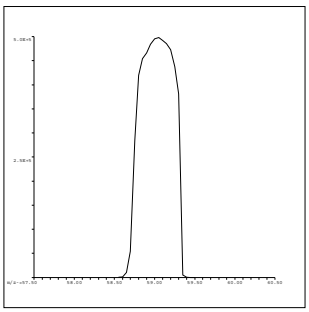
24 Mg
Mass Calib.
   Actual: 24.05
   Required: 23.90-24.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



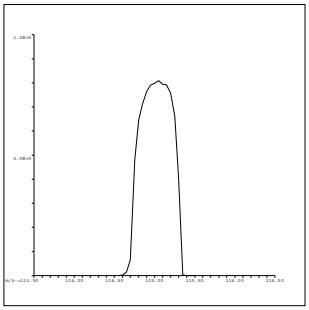
25 Mg
Mass Calib.
   Actual: 25.05
   Required: 24.90-25.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



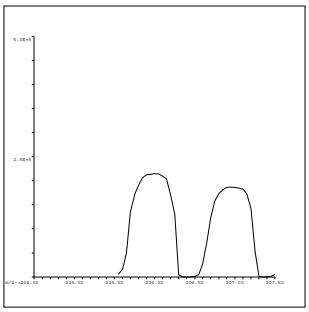
26 Mg
Mass Calib.
   Actual: 26.00
   Required: 25.90-26.10
   Flag:
Peak Width
   Actual: 0.65
   Required: 0.75
   Flag:



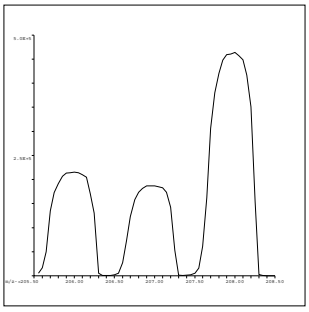
59 Co
Mass Calib.
   Actual: 59.05
   Required: 58.90-59.10
   Flag:
Peak Width
   Actual: 0.60
   Required: 0.75
   Flag:



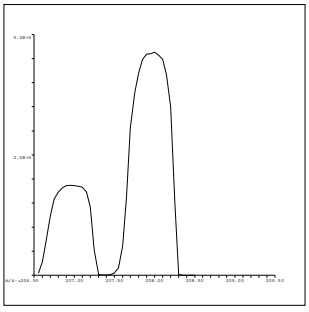
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170518A

Instrument ID: ICPMS-02

Analyte	Data File	A0518002.D	A0518003.D	A0518004.D	A0518005.D	A0518006.D	A0518007.D	A0518008.D	A0518009.D	A0518010.D	
	Acq. Date-Time	05/18/2017 12:09 PM	05/18/2017 12:14 PM	05/18/2017 12:20 PM	05/18/2017 12:25 PM	05/18/2017 12:31 PM	05/18/2017 12:37 PM	05/18/2017 12:42 PM	05/18/2017 12:48 PM	05/18/2017 12:53 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	45166.6		46108.1	45796	46291.9	45380.5	45763.7	44426.7	43929	
55 Mn [2]	CPS	43.3		980.4	9390.2	19002.7	37884.9	74510.6	182704.8	363861.6	1.0000
52 Cr [2]	CPS	78.9		2022.4	20163.7	40890.7	80756.5	159367.9	388072.7	767149	1.0000
72 Ge (ISTD) [1]	CPS	45643.4		45702.4	45592.1	45704.8	45331.5	44511.7	44035.7	43932.2	
78 Se [1]	CPS	1.1		86.7	875.6	1729	3433.8	7039.5	16892.7	34107.8	1.0000
72 Ge (ISTD) [2]	CPS	33228	33942.7	33717.9	33563.1	34254.5	33542.9	33430.5	32683.5	32417.3	
75 As [2]	CPS	6.7	48.4	233.3	2081.9	4101.9	8247.9	16250.4	39075.4	78507.6	1.0000
103 Rh (ISTD) [2]	CPS	1141192.3		1155474.1	1231292.2	1201471.7	1151626.5	1189525.8	1112422.4	1097284.3	
95 Mo [2]	CPS	20		1367.9	13101.3	26394.7	53708.4	106412.7	259772.5	524533.6	0.9997
159 Tb (ISTD) [3]	CPS	4275303.9		4414070.8	4357538.1	4393469.3	4367586.4	4417883.2	4346672.9	4358002	
137 Ba [3]	CPS	177.9		3654.7	34214.8	67900.2	135820.6	270531.2	660975.6	1504808.5	1.0000

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION SUMMARY: 170524A

Instrument ID: ICPMS-02

Analyte	Data File	A0524002.D	A0524004.D	A0524005.D	A0524006.D	A0524007.D	A0524008.D	A0524009.D	A0524010.D	
	Acq. Date-Time	05/24/2017 02:16 PM	05/24/2017 02:27 PM	05/24/2017 02:33 PM	05/24/2017 02:38 PM	05/24/2017 02:45 PM	05/24/2017 02:50 PM	05/24/2017 02:56 PM	05/24/2017 03:02 PM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
72 Ge (ISTD) [1]	CPS	61158.6	64230.6	63117.3	63054.6	64049.5	62755.9	61601.2	60951.2	
78 Se [1]	CPS	0	147.8	1227.9	2429.2	4999.9	9756.7	23984.1	48049.8	1.0000

Standard Code
ICAL: 2MSST-161206B
ICAL: 2MSST-161206A
ICAL: 2MWST-161206C
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **ICV**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650223**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	10.026	0.10	10.00	0	100	90	110				
Barium	102.812	1.0	100.0	0	103	90	110				
Manganese	100.664	0.50	100.0	0	101	90	110				
Molybdenum	10.911	0.50	10.00	0	109	90	110				
Selenium	10.288	0.50	10.00	0	103	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **ZZZZZZ**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650228**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.093	0.10	0.1000	0	92.8	80	120				
Barium	1.199	1.0	1.000	0	120	80	120				
Manganese	0.523	0.50	0.5000	0	105	80	120				
Molybdenum	0.524	0.50	0.5000	0	105	80	120				
Selenium	0.462	0.50	0.5000	0	92.4	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCV**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650239**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.955	0.10	20.00	0	99.8	90	110				
Barium	20.816	1.0	20.00	0	104	90	110				
Manganese	20.175	0.50	20.00	0	101	90	110				
Molybdenum	18.538	0.50	20.00	0	92.7	90	110				
Selenium	19.859	0.50	20.00	0	99.3	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV2** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **115356**
Client ID: **CCV** Batch ID: **R115356** TestNo: **EPA 6020** Analysis Date: **5/18/2017** SeqNo: **2650251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.742	0.10	20.00	0	98.7	90	110				
Barium	20.424	1.0	20.00	0	102	90	110				
Manganese	20.266	0.50	20.00	0	101	90	110				
Molybdenum	18.416	0.50	20.00	0	92.1	90	110				
Selenium	19.834	0.50	20.00	0	99.2	90	110				

Sample ID **CCV3** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **115356**
Client ID: **CCV** Batch ID: **R115356** TestNo: **EPA 6020** Analysis Date: **5/18/2017** SeqNo: **2650263**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.885	0.10	20.00	0	99.4	90	110				
Barium	20.361	1.0	20.00	0	102	90	110				
Manganese	19.952	0.50	20.00	0	99.8	90	110				
Molybdenum	20.313	0.50	20.00	0	102	90	110				
Selenium	21.735	0.50	20.00	0	109	90	110				

Sample ID **CCV4** SampType: **CCV** TestCode: **6020_DIS** Units: **µg/L** Prep Date: RunNo: **115356**
Client ID: **CCV** Batch ID: **R115356** TestNo: **EPA 6020** Analysis Date: **5/18/2017** SeqNo: **2650275**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.314	0.10	20.00	0	102	90	110				
Barium	20.130	1.0	20.00	0	101	90	110				
Manganese	20.376	0.50	20.00	0	102	90	110				
Molybdenum	20.359	0.50	20.00	0	102	90	110				
Selenium	20.653	0.50	20.00	0	103	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCV**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650287**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.138	0.10	20.00	0	101	90	110				
Barium	19.763	1.0	20.00	0	98.8	90	110				
Manganese	20.501	0.50	20.00	0	103	90	110				
Molybdenum	20.194	0.50	20.00	0	101	90	110				
Selenium	21.236	0.50	20.00	0	106	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCV**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650295**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	19.924	0.10	20.00	0	99.6	90	110				
Barium	19.707	1.0	20.00	0	98.5	90	110				
Manganese	20.209	0.50	20.00	0	101	90	110				
Molybdenum	20.171	0.50	20.00	0	101	90	110				
Selenium	20.820	0.50	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **ZZZZZZ**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650297**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	0.115	0.10	0.1000	0	115	70	130				
Barium	1.197	1.0	1.000	0	120	70	130				
Manganese	0.531	0.50	0.5000	0	106	70	130				
Molybdenum	0.513	0.50	0.5000	0	103	70	130				
Selenium	0.527	0.50	0.5000	0	105	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **ICV**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.037	0.50	10.00	0	100	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **ZZZZZZ**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.422	0.50	0.5000	0	84.3	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **CCV**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	19.774	0.50	20.00	0	98.9	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **ZZZZZZ**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.379	0.50	0.5000	0	75.8	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **ICV**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650130**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.093	1.0	10.00	0	101	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **ZZZZZZ**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650135**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.074	1.0	1.000	0	107	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **CCV**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.318	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **CCV**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650158**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.248	1.0	20.00	0	101	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **CCV**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650170**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.392	1.0	20.00	0	102	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **CCV**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650182**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.888	1.0	20.00	0	104	90	110				

Sample ID **CCV5**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **CCV**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650194**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.352	1.0	20.00	0	107	90	110				

Sample ID **CCV6**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **CCV**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650202**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	21.268	1.0	20.00	0	106	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **ZZZZZZ**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650204**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.106	1.0	1.000	0	111	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **ICB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650224**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.208	0.50									
Selenium	0.033	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650240**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.089	0.50									
Selenium	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.109	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650264**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.084	0.50									
Selenium	ND	0.50									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650276**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.091	0.50									
Selenium	0.040	0.50									

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650288**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.086	0.50									
Selenium	0.029	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **CCB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650296**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **ICB**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	0.028	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **CCB**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICB	SampType:	ICB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	ICB	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650131

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB1	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	CCB	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650147

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB2	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	CCB	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650159

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB3	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	CCB	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650171

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID	CCB4	SampType:	CCB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	CCB	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650183

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **CCB5**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **CCB**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650195**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB6**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115354**
Client ID: **CCB**	Batch ID: **R115354**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650203**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.025	1.0									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **ICSA**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650226**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	0.044	0.50									
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **ICSAB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650227**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.521	0.10	20.00	0	103	80	120				
Barium	21.127	1.0	20.00	0	106	80	120				
Manganese	22.915	0.50	20.00	0	115	80	120				
Molybdenum	23.086	0.50	20.00	0	115	80	120				
Selenium	18.293	0.50	20.00	0	91.5	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **ICSA**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650298**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	0.10									
Barium	ND	1.0									
Manganese	ND	0.50									
Molybdenum	ND	0.50									
Selenium	ND	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115356**
Client ID: **ICSAB**	Batch ID: **R115356**	TestNo: **EPA 6020**		Analysis Date: **5/18/2017**	SeqNo: **2650299**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	20.239	0.10	20.00	0	101	80	120				
Barium	22.844	1.0	20.00	0	114	80	120				
Manganese	23.402	0.50	20.00	0	117	80	120				
Molybdenum	23.162	0.50	20.00	0	116	80	120				
Selenium	18.977	0.50	20.00	0	94.9	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **ICSA**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **ICSAB**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.765	0.50	20.00	0	93.8	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **ICSA**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115447**
Client ID: **ICSAB**	Batch ID: **R115447**	TestNo: **EPA 6020**		Analysis Date: **5/24/2017**	SeqNo: **2654327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	18.515	0.50	20.00	0	92.6	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	ICSA1	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	ICSA	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650133

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.058	1.0									

Sample ID	ICSAB1	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	ICSAB	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650134

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.145	1.0	20.00	0	95.7	80	120				

Sample ID	ICSA2	SampType:	ICSA	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	ICSA	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650205

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.093	1.0									

Sample ID	ICSAB2	SampType:	ICSAB	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	ICSAB	Batch ID:	R115354	TestNo:	EPA 6020			Analysis Date:	5/18/2017	SeqNo:	2650206

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	19.795	1.0	20.00	0	99.0	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	4275303.9	4275303.9	100	PASS	70-125	45166.6	45166.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	4391521.5	4275303.9	102.72	PASS	70-125	46200.4	45166.6	102.29	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	4414070.8	4275303.9	103.25	PASS	70-125	46108.1	45166.6	102.09	PASS	70-125
Std3-5/50 ppb	ICAL	1	4357538.1	4275303.9	101.92	PASS	70-125	45796	45166.6	101.39	PASS	70-125
Std4-10/100 ppb	ICAL	1	4393469.3	4275303.9	102.76	PASS	70-125	46291.9	45166.6	102.49	PASS	70-125
Std5-20/200 ppb	ICAL	1	4367586.4	4275303.9	102.16	PASS	70-125	45380.5	45166.6	100.47	PASS	70-125
Std6-40/400 ppb	ICAL	1	4417883.2	4275303.9	103.33	PASS	70-125	45763.7	45166.6	101.32	PASS	70-125
Std7-100/1000 ppb	ICAL	1	4346672.9	4275303.9	101.67	PASS	70-125	44426.7	45166.6	98.36	PASS	70-125
Std8-200/2000 ppb	ICAL	1	4358002	4275303.9	101.93	PASS	70-125	43929	45166.6	97.26	PASS	70-125
ICV	ICV	1	4324610.9	4275303.9	101.15	PASS	70-125	43762.7	45166.6	96.89	PASS	70-125
ICB	ICB	1	4278490	4275303.9	100.08	PASS	70-125	44718.8	45166.6	99.009	PASS	70-125
LLICV	CCV1	1	4165264.1	4275303.9	97.43	PASS	70-125	40673.8	45166.6	90.053	PASS	70-125
ICSA1	ICSA	1	3866777.3	4275303.9	90.44	PASS	70-125	48752.3	45166.6	107.94	PASS	70-125
ICSAB1	ICSAB	1	3706150.6	4275303.9	86.69	PASS	70-125	50906.3	45166.6	112.71	PASS	70-125
LLICV	CCV1	1	4107103.6	4275303.9	96.066	PASS	70-125	38771.6	45166.6	85.84	PASS	70-125
CCV1	CCV	1	4686253.2	4275303.9	109.61	PASS	70-125	51377.7	45166.6	113.75	PASS	70-125
CCB1	CCB	1	4570274	4275303.9	106.9	PASS	70-125	49426.2	45166.6	109.43	PASS	70-125
CCV2	CCV	1	4596401.3	4275303.9	107.51	PASS	70-125	48018.7	45166.6	106.31	PASS	70-125
CCB2	CCB	1	4411808.1	4275303.9	103.19	PASS	70-125	44403.4	45166.6	98.31	PASS	70-125
MB-62222	MBLK	1	4428613.4	4275303.9	103.59	PASS	70-125	43812.9	45166.6	97.003	PASS	70-125
LCS-62222	LCS	1	4773899.3	4275303.9	111.66	PASS	70-125	47041.6	45166.6	104.15	PASS	70-125
N024191-002B	SAMP	1	4298523.9	4275303.9	100.54	PASS	70-125	44662.8	45166.6	98.88	PASS	70-125
N024191-002B	SAMP	5	4309287.2	4275303.9	100.79	PASS	70-125	43141.2	45166.6	95.52	PASS	70-125
CCV3	CCV	1	4260141.7	4275303.9	99.65	PASS	70-125	41464.8	45166.6	91.8	PASS	70-125
CCB3	CCB	1	4127090.3	4275303.9	96.53	PASS	70-125	38309.3	45166.6	84.82	PASS	70-125
N024191-002B-PS	PS	1	4367850.2	4275303.9	102.16	PASS	70-125	41604	45166.6	92.11	PASS	70-125
N024191-002B-MS	MS	1	4222932.9	4275303.9	98.78	PASS	70-125	41822.2	45166.6	92.6	PASS	70-125
N024191-002B-MSD	MSD	1	4219760.4	4275303.9	98.7	PASS	70-125	42325.8	45166.6	93.71	PASS	70-125
N024191-003B	SAMP	1	4192056.7	4275303.9	98.053	PASS	70-125	41976	45166.6	92.94	PASS	70-125
N024191-004B	SAMP	1	4257954.1	4275303.9	99.59	PASS	70-125	42350.1	45166.6	93.76	PASS	70-125
N024191-005B	SAMP	1	4299629.7	4275303.9	100.57	PASS	70-125	43377.4	45166.6	96.039	PASS	70-125
N024191-006B	SAMP	1	4318128.2	4275303.9	101	PASS	70-125	43938.8	45166.6	97.28	PASS	70-125
N024191-007B	SAMP	1	4327201.2	4275303.9	101.21	PASS	70-125	44734.3	45166.6	99.043	PASS	70-125
N024191-008B	SAMP	1	4271175.1	4275303.9	99.9	PASS	70-125	44877	45166.6	99.36	PASS	70-125
N024191-009B	SAMP	1	4438608.4	4275303.9	103.82	PASS	70-125	45001.6	45166.6	99.63	PASS	70-125
CCV4	CCV	1	4396765.3	4275303.9	102.84	PASS	70-125	42344.7	45166.6	93.75	PASS	70-125
CCB4	CCB	1	4177876.3	4275303.9	97.72	PASS	70-125	39780.7	45166.6	88.075	PASS	70-125
N024191-010B	SAMP	1	4357280.5	4275303.9	101.92	PASS	70-125	41250.8	45166.6	91.33	PASS	70-125
N024191-011B	SAMP	1	4341538.6	4275303.9	101.55	PASS	70-125	42145.3	45166.6	93.31	PASS	70-125
N024191-012B	SAMP	1	4550261.5	4275303.9	106.43	PASS	70-125	44951.6	45166.6	99.52	PASS	70-125
N024191-013B	SAMP	1	4542408.3	4275303.9	106.25	PASS	70-125	43850.8	45166.6	97.087	PASS	70-125

INTERNAL STANDARD: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	159 Tb (ISTD) [3]					45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N024191-014B	SAMP	1	4304415.2	4275303.9	100.68	PASS	70-125	43426.3	45166.6	96.15	PASS	70-125
CCV5	CCV	1	4170257.2	4275303.9	97.54	PASS	70-125	34853	45166.6	77.17	PASS	70-125
CCB5	CCB	1	4088679.7	4275303.9	95.63	PASS	70-125	33890.9	45166.6	75.035	PASS	70-125
N024191-002B	SAMP	25	4125525.3	4275303.9	96.5	PASS	70-125	33615.9	45166.6	74.43	PASS	70-125
N024191-002B-PS	PS	5	4100299.6	4275303.9	95.91	PASS	70-125	32747.5	45166.6	72.5	PASS	70-125
N024191-002B-MS	MS	5	4061942.4	4275303.9	95.009	PASS	70-125	33254	45166.6	73.63	PASS	70-125
N024191-002B-MSD	MSD	5	4007353.7	4275303.9	93.73	PASS	70-125	33289.7	45166.6	73.7	PASS	70-125
CCV6	CCV	1	4201580.1	4275303.9	98.28	PASS	70-125	34341.9	45166.6	76.034	PASS	70-125
CCB6	CCB	1	4082578.1	4275303.9	95.49	PASS	70-125	41372.3	45166.6	91.6	PASS	70-125
LLCCV1	CCV2	1	4204157.8	4275303.9	98.34	PASS	70-125	41461.4	45166.6	91.8	PASS	70-125
ICSA2	ICSA	1	3770257.2	4275303.9	88.19	PASS	70-125	46482.4	45166.6	102.91	PASS	70-125
ICSAB2	ICSAB	1	3655526.1	4275303.9	85.5	PASS	70-125	45183.2	45166.6	100.04	PASS	70-125

INTERNAL STANDARD: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	33228	33228	100	PASS	70-125	45643.4	45643.4	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	33942.7	33228	102.15	PASS	70-125	46374.3	45643.4	101.6	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	33717.9	33228	101.47	PASS	70-125	45702.4	45643.4	100.13	PASS	70-125
Std3-5/50 ppb	ICAL	1	33563.1	33228	101.01	PASS	70-125	45592.1	45643.4	99.89	PASS	70-125
Std4-10/100 ppb	ICAL	1	34254.5	33228	103.09	PASS	70-125	45704.8	45643.4	100.13	PASS	70-125
Std5-20/200 ppb	ICAL	1	33542.9	33228	100.95	PASS	70-125	45331.5	45643.4	99.32	PASS	70-125
Std6-40/400 ppb	ICAL	1	33430.5	33228	100.61	PASS	70-125	44511.7	45643.4	97.52	PASS	70-125
Std7-100/1000 ppb	ICAL	1	32683.5	33228	98.36	PASS	70-125	44035.7	45643.4	96.48	PASS	70-125
Std8-200/2000 ppb	ICAL	1	32417.3	33228	97.56	PASS	70-125	43932.2	45643.4	96.25	PASS	70-125
ICV	ICV	1	32527.7	33228	97.89	PASS	70-125	43575.6	45643.4	95.47	PASS	70-125
ICB	ICB	1	32988.5	33228	99.28	PASS	70-125	44404.4	45643.4	97.29	PASS	70-125
LLICV	CCV1	1	30195.3	33228	90.87	PASS	70-125	37453.7	45643.4	82.057	PASS	70-125
ICSA1	ICSA	1	32789.2	33228	98.68	PASS	70-125	40817.3	45643.4	89.43	PASS	70-125
ICSAB1	ICSAB	1	34263.4	33228	103.12	PASS	70-125	43283.7	45643.4	94.83	PASS	70-125
LLICV	CCV1	1	28918.6	33228	87.031	PASS	70-125	36797.7	45643.4	80.62	PASS	70-125
CCV1	CCV	1	37194.1	33228	111.94	PASS	70-125	51059.2	45643.4	111.87	PASS	70-125
CCB1	CCB	1	35556.2	33228	107.01	PASS	70-125	47359.5	45643.4	103.76	PASS	70-125
CCV2	CCV	1	34914.8	33228	105.08	PASS	70-125	47586.9	45643.4	104.26	PASS	70-125
CCB2	CCB	1	33202.3	33228	99.92	PASS	70-125	43829.7	45643.4	96.026	PASS	70-125
MB-62222	MBLK	1	32877.2	33228	98.94	PASS	70-125	43030.8	45643.4	94.28	PASS	70-125
LCS-62222	LCS	1	34962.6	33228	105.22	PASS	70-125	46662.9	45643.4	102.23	PASS	70-125
N024191-002B	SAMP	1	32489.8	33228	97.78	PASS	70-125	42694.4	45643.4	93.54	PASS	70-125
N024191-002B	SAMP	5	31953.1	33228	96.16	PASS	70-125	42327	45643.4	92.73	PASS	70-125
CCV3	CCV	1	30606	33228	92.11	PASS	70-125	40189.1	45643.4	88.05	PASS	70-125
CCB3	CCB	1	29160.2	33228	87.76	PASS	70-125	38291.3	45643.4	83.89	PASS	70-125
N024191-002B-PS	PS	1	31250.7	33228	94.049	PASS	70-125	40079.9	45643.4	87.81	PASS	70-125
N024191-002B-MS	MS	1	31178.3	33228	93.83	PASS	70-125	39234.6	45643.4	85.96	PASS	70-125
N024191-002B-MSD	MSD	1	30632.8	33228	92.19	PASS	70-125	39685.7	45643.4	86.95	PASS	70-125
N024191-003B	SAMP	1	31050.3	33228	93.45	PASS	70-125	39928.7	45643.4	87.48	PASS	70-125
N024191-004B	SAMP	1	31261.7	33228	94.082	PASS	70-125	40024.2	45643.4	87.69	PASS	70-125
N024191-005B	SAMP	1	31773.9	33228	95.62	PASS	70-125	40112.2	45643.4	87.88	PASS	70-125
N024191-006B	SAMP	1	31618.1	33228	95.15	PASS	70-125	40903.2	45643.4	89.61	PASS	70-125
N024191-007B	SAMP	1	32090.1	33228	96.58	PASS	70-125	40429.8	45643.4	88.58	PASS	70-125
N024191-008B	SAMP	1	32860.5	33228	98.89	PASS	70-125	38894.9	45643.4	85.21	PASS	70-125
N024191-009B	SAMP	1	32584.5	33228	98.063	PASS	70-125	41432.3	45643.4	90.77	PASS	70-125
CCV4	CCV	1	31579.1	33228	95.038	PASS	70-125	41551.4	45643.4	91.035	PASS	70-125
CCB4	CCB	1	29877.9	33228	89.92	PASS	70-125	37094	45643.4	81.27	PASS	70-125
N024191-010B	SAMP	1	30779.9	33228	92.63	PASS	70-125	39258	45643.4	86.01	PASS	70-125
N024191-011B	SAMP	1	30913.3	33228	93.034	PASS	70-125	39771.4	45643.4	87.14	PASS	70-125
N024191-012B	SAMP	1	32685.6	33228	98.37	PASS	70-125	41337.7	45643.4	90.57	PASS	70-125
N024191-013B	SAMP	1	32703.5	33228	98.42	PASS	70-125	40133.4	45643.4	87.93	PASS	70-125

INTERNAL STANDARD: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [2]					72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria	CPS	REF	%REC	Comment	Criteria
N024191-014B	SAMP	1	31064.7	33228	93.49	PASS	70-125	39516.5	45643.4	86.58	PASS	70-125
CCV5	CCV	1	26968.5	33228	81.16	PASS	70-125	33877.2	45643.4	74.22	PASS	70-125
CCB5	CCB	1	26023.7	33228	78.32	PASS	70-125	32870.6	45643.4	72.016	PASS	70-125
N024191-002B	SAMP	25	26508.9	33228	79.78	PASS	70-125	33143.3	45643.4	72.61	PASS	70-125
N024191-002B-PS	PS	5	25861.2	33228	77.83	PASS	70-125	32135.7	45643.4	70.41	PASS	70-125
N024191-002B-MS	MS	5	25690.9	33228	77.32	PASS	70-125	32585.6	45643.4	71.39	PASS	70-125
N024191-002B-MSD	MSD	5	26058.2	33228	78.42	PASS	70-125	32798	45643.4	71.86	PASS	70-125
CCV6	CCV	1	26882.8	33228	80.9	PASS	70-125	34387.1	45643.4	75.34	PASS	70-125
CCB6	CCB	1	31051.4	33228	93.45	PASS	70-125	39061	45643.4	85.58	PASS	70-125
LLCCV1	CCV2	1	31436.6	33228	94.61	PASS	70-125	42410.3	45643.4	92.92	PASS	70-125
ICSA2	ICSA	1	32360.6	33228	97.39	PASS	70-125	38920.1	45643.4	85.27	PASS	70-125
ICSAB2	ICSAB	1	31220.7	33228	93.96	PASS	70-125	35132.4	45643.4	76.97	PASS	70-125

INTERNAL STANDARD: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	1141192.3	1141192.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	1208582.2	1141192.3	105.91	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	1155474.1	1141192.3	101.25	PASS	70-125
Std3-5/50 ppb	ICAL	1	1231292.2	1141192.3	107.9	PASS	70-125
Std4-10/100 ppb	ICAL	1	1201471.7	1141192.3	105.28	PASS	70-125
Std5-20/200 ppb	ICAL	1	1151626.5	1141192.3	100.91	PASS	70-125
Std6-40/400 ppb	ICAL	1	1189525.8	1141192.3	104.24	PASS	70-125
Std7-100/1000 ppb	ICAL	1	1112422.4	1141192.3	97.48	PASS	70-125
Std8-200/2000 ppb	ICAL	1	1097284.3	1141192.3	96.15	PASS	70-125
ICV	ICV	1	1123392.7	1141192.3	98.44	PASS	70-125
ICB	ICB	1	1140821.8	1141192.3	99.97	PASS	70-125
LLICV	CCV1	1	1077815.4	1141192.3	94.45	PASS	70-125
ICSA1	ICSA	1	1006968.3	1141192.3	88.24	PASS	70-125
ICSAB1	ICSAB	1	1014105.8	1141192.3	88.86	PASS	70-125
LLICV	CCV1	1	1044620.1	1141192.3	91.54	PASS	70-125
CCV1	CCV	1	1387698.4	1141192.3	121.6	PASS	70-125
CCB1	CCB	1	1350699.8	1141192.3	118.36	PASS	70-125
CCV2	CCV	1	1344563.1	1141192.3	117.82	PASS	70-125
CCB2	CCB	1	1234268.8	1141192.3	108.16	PASS	70-125
MB-62222	MBLK	1	1135478.6	1141192.3	99.5	PASS	70-125
LCS-62222	LCS	1	1326893.8	1141192.3	116.27	PASS	70-125
N024191-002B	SAMP	1	1028990.4	1141192.3	90.17	PASS	70-125
N024191-002B	SAMP	5	1055097.1	1141192.3	92.46	PASS	70-125
CCV3	CCV	1	1083291.3	1141192.3	94.93	PASS	70-125
CCB3	CCB	1	1042798.3	1141192.3	91.38	PASS	70-125
N024191-002B-PS	PS	1	1003510.3	1141192.3	87.94	PASS	70-125
N024191-002B-MS	MS	1	989290.8	1141192.3	86.69	PASS	70-125
N024191-002B-MSD	MSD	1	973738.4	1141192.3	85.33	PASS	70-125
N024191-003B	SAMP	1	976175.1	1141192.3	85.54	PASS	70-125
N024191-004B	SAMP	1	982727.9	1141192.3	86.11	PASS	70-125
N024191-005B	SAMP	1	1002448.7	1141192.3	87.84	PASS	70-125
N024191-006B	SAMP	1	1001414.8	1141192.3	87.75	PASS	70-125
N024191-007B	SAMP	1	1014400.2	1141192.3	88.89	PASS	70-125
N024191-008B	SAMP	1	1016715.1	1141192.3	89.092	PASS	70-125
N024191-009B	SAMP	1	1021944.5	1141192.3	89.55	PASS	70-125
CCV4	CCV	1	1108109.9	1141192.3	97.1	PASS	70-125
CCB4	CCB	1	1059714.9	1141192.3	92.86	PASS	70-125
N024191-010B	SAMP	1	997533.6	1141192.3	87.41	PASS	70-125
N024191-011B	SAMP	1	999964.9	1141192.3	87.62	PASS	70-125
N024191-012B	SAMP	1	1047377.6	1141192.3	91.78	PASS	70-125
N024191-013B	SAMP	1	1034742.5	1141192.3	90.67	PASS	70-125

INTERNAL STANDARD: 170518A

Instrument ID: ICPMS-02

Sample Name	Type	DF	103 Rh (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
N024191-014B	SAMP	1	1001607.5	1141192.3	87.77	PASS	70-125
CCV5	CCV	1	996393.8	1141192.3	87.31	PASS	70-125
CCB5	CCB	1	965928.4	1141192.3	84.64	PASS	70-125
N024191-002B	SAMP	25	959366.2	1141192.3	84.067	PASS	70-125
N024191-002B-PS	PS	5	905174.8	1141192.3	79.32	PASS	70-125
N024191-002B-MS	MS	5	912218.2	1141192.3	79.94	PASS	70-125
N024191-002B-MSD	MSD	5	912091.1	1141192.3	79.92	PASS	70-125
CCV6	CCV	1	982589.2	1141192.3	86.1	PASS	70-125
CCB6	CCB	1	1078414.1	1141192.3	94.5	PASS	70-125
LLCCV1	CCV2	1	1118291.5	1141192.3	97.99	PASS	70-125
ICSA2	ICSA	1	1015728.2	1141192.3	89.006	PASS	70-125
ICSAB2	ICSAB	1	971582.2	1141192.3	85.14	PASS	70-125

INTERNAL STANDARD: 170524A

Instrument ID: ICPMS-02

Sample Name	Type	DF	72 Ge (ISTD) [1]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	61158.6	61158.6	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	63592.3	61158.6	103.98	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	64230.6	61158.6	105.02	PASS	70-125
Std3-5/50 ppb	ICAL	1	63117.3	61158.6	103.2	PASS	70-125
Std4-10/100 ppb	ICAL	1	63054.6	61158.6	103.1	PASS	70-125
Std5-20/200 ppb	ICAL	1	64049.5	61158.6	104.73	PASS	70-125
Std6-40/400 ppb	ICAL	1	62755.9	61158.6	102.61	PASS	70-125
Std7-100/1000 ppb	ICAL	1	61601.2	61158.6	100.72	PASS	70-125
Std8-200/2000 ppb	ICAL	1	60951.2	61158.6	99.66	PASS	70-125
ICV	ICV	1	71721.2	61158.6	117.27	PASS	70-125
ICB	ICB	1	61213.2	61158.6	100.09	PASS	70-125
LLICV	CCV1	1	69040	61158.6	112.89	PASS	70-125
ICSA1	ICSA	1	71405.5	61158.6	116.75	PASS	70-125
ICSAB1	ICSAB	1	44897.1	61158.6	73.41	PASS	70-125
LLICV	CCV1	1	85304.9	61158.6	139.48	NR!	70-125
N024191-002B	SAMP	1	71874.2	61158.6	117.52	PASS	70-125
N024191-006B	SAMP	1	73975.8	61158.6	120.96	PASS	70-125
N024191-011B	SAMP	1	71189	61158.6	116.4	PASS	70-125
N024191-014B	SAMP	1	71915.3	61158.6	117.59	PASS	70-125
N024191-002B	SAMP	1	71694.3	61158.6	117.23	PASS	70-125
N024191-006B	SAMP	1	72620	61158.6	118.74	PASS	70-125
N024191-011B	SAMP	1	69126.7	61158.6	113.03	PASS	70-125
N024191-014B	SAMP	1	70484.9	61158.6	115.25	PASS	70-125
CCV1	CCV	1	74767.4	61158.6	122.25	PASS	70-125
CCB1	CCB	1	70951.6	61158.6	116.01	PASS	70-125
LLCCV1	CCV2	1	75312.7	61158.6	123.14	PASS	70-125
ICSA2	ICSA	1	74677.9	61158.6	122.11	PASS	70-125
ICSAB2	ICSAB	1	54103.8	61158.6	88.46	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024191
Test Method: EPA 6020
Analysis Date: 5/18/2017

Matrix: Groundwater
Batch No.: 62222

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to As, Cr, Mn, Mo, Se. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024191-002B DT 5X	Arsenic	ug/L	2.347415	NA	2.24161	4.72%	10
N024191-002B DT 25X	Barium	ug/L	113.3451	PASS	124.7581	9.15%	10
N024191-002B DT 5X	Chromium	ug/L	0	NA	0.057472	100.00%	10
N024191-002B DT 5X	Manganese	ug/L	0	NA	0		10
N024191-002B DT 5X	Molybdenum	ug/L	5.089514	NA	5.355719	4.97%	10
N024191-002B DT 5X	Selenium	ug/L	1.488978	NA	1.486994	0.13%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	N024191-002B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650265

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	11.926	0.10	10.00	2.242	96.8	80	120				
Manganese	94.055	0.50	100.0	0	94.1	80	120				
Molybdenum	16.460	0.50	10.00	5.356	111	80	120				

Sample ID	N024191-002B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650292

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Barium	235.359	5.0	100.0	124.8	111	80	120				

Sample ID	N024191-002B-PS	SampType:	PS	TestCode:	6020_DIS	Units:	µg/L	Prep Date:		RunNo:	115356
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2654370

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Selenium	10.865	0.50	10.00	1.487	93.8	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024191
Project: PG&E Topock - RMP, RC000753.0801

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N024191-002B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115354
Client ID:	ZZZZZZ	Batch ID:	62222	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	5/18/2017	SeqNo:	2650172

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	9.830	1.0	10.00	0.05747	97.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101

June 21, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024516

RE: PG&E Topock - PMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Calcium on QC sample N024516-001B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N024516-002B-MS2 and N024516-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Laboratory Control Sample (LCS) recovery biased high in analytical batch R115849. Samples reported in this analytical batch were non-detect (ND) therefore reanalysis of the samples was not necessary.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"

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ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *21-Jun-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801B
Lab Order: N024516
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024516-001A	PE-01-0617	Groundwater	6/7/2017 11:15:00 AM	6/7/2017	6/21/2017
N024516-001B	PE-01-0617	Groundwater	6/7/2017 11:15:00 AM	6/7/2017	6/21/2017
N024516-001C	PE-01-0617	Groundwater	6/7/2017 11:15:00 AM	6/7/2017	6/21/2017
N024516-001D	PE-01-0617	Groundwater	6/7/2017 11:15:00 AM	6/7/2017	6/21/2017
N024516-002A	TW-03D-0617	Groundwater	6/7/2017 11:00:00 AM	6/7/2017	6/21/2017
N024516-002B	TW-03D-0617	Groundwater	6/7/2017 11:00:00 AM	6/7/2017	6/21/2017
N024516-002C	TW-03D-0617	Groundwater	6/7/2017 11:00:00 AM	6/7/2017	6/21/2017
N024516-002D	TW-03D-0617	Groundwater	6/7/2017 11:00:00 AM	6/7/2017	6/21/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:15:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170608E**	QC Batch: **R115676**			PrepDate			Analyst: **LR**
Specific Conductance	4500	0.10	0.10		umhos/cm	1	6/8/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170608E**	QC Batch: **R115676**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	6/8/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID	**N024516-002CDUP**	SampType:	**DUP**	TestCode:	**120.1_WPGE**	Units:	**umhos/cm**	Prep Date:		RunNo:	**115676**
Client ID:	**ZZZZZZ**	Batch ID:	**R115676**	TestNo:	**EPA 120.1**			Analysis Date:	**6/8/2017**	SeqNo:	**2663500**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7720.000	0.10						7750	0.388	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:15:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170608C**	QC Batch: **R115674**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/8/2017 09:25 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	6/8/2017 09:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170608C**	QC Batch: **R115674**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	6/8/2017 09:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	6/8/2017 09:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024516-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **115674**
Client ID: **ZZZZZZ** Batch ID: **R115674** TestNo: **SM4500-H+B** Analysis Date: **6/8/2017** SeqNo: **2663486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.530	0.10						7.560	0.398	10	H
Temp. at time of pH Analysis	16.200	0.10						16.80	3.64	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:15:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170608G**	QC Batch: **62476**			PrepDate	**6/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	6/8/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170608G**	QC Batch: **62476**			PrepDate	**6/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	6/8/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-62476**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2017**	RunNo: **115678**
Client ID: **LCSW**	Batch ID: **62476**	TestNo: **SM2540C**		Analysis Date: **6/8/2017**	SeqNo: **2664148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	968.000	10	1000	0	96.8	80	120				

Sample ID **MB-62476**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2017**	RunNo: **115678**
Client ID: **PBW**	Batch ID: **62476**	TestNo: **SM2540C**		Analysis Date: **6/8/2017**	SeqNo: **2664149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N024516-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2017**	RunNo: **115678**
Client ID: **ZZZZZZ**	Batch ID: **62476**	TestNo: **SM2540C**		Analysis Date: **6/8/2017**	SeqNo: **2664152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4400.000	50						4440	0.905	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170608A** QC Batch: **R115654**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	6/8/2017 11:44 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170608A** QC Batch: **62467**				PrepDate	**6/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	6/8/2017 01:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-002

Client Sample ID: TW-03D-0617
Collection Date: 6/7/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **NV00922-WC_170620C** QC Batch: **R115875**				PrepDate			Analyst: **QBM**
Chromium, Hexavalent	550	6.9	50		µg/L	5	6/20/2017
DISSOLVED METALS BY ICP-MS							
			EPA 3010A	**EPA 6020**			
RunID: **NV00922-ICP7_170608A** QC Batch: **62467**				PrepDate	**6/8/2017**		Analyst: **CEI**
Chromium	550	0.096	5.0		µg/L	5	6/8/2017 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115654**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **PBW**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115654**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **LCSW**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.128	0.20	5.000	0	103	90	110				

Sample ID **N024518-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.505	0.20						2.566	2.42	20	

Sample ID **N024519-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.557	0.20	5.000	4.472	102	90	110				

Sample ID **N024519-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.705	0.20	5.000	4.472	105	90	110	9.557	1.54	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024516-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115654
Client ID:	ZZZZZZ	Batch ID:	R115654	TestNo:	EPA 218.6			Analysis Date:	6/8/2017	SeqNo:	2662330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	LCS-R115875	SampType:	LCS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	LCSW	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670867

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	100.420	10	100.0	0	100	85	115				

Sample ID	MB-R115875	SampType:	MBLK	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	PBW	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670868

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID	N024516-002ADUP	SampType:	DUP	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	ZZZZZZ	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670870

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	552.955	50						553.4	0.0895	20	

Sample ID	N024516-002AMS	SampType:	MS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	ZZZZZZ	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1052.040	50	500.0	553.4	99.7	85	115				

Sample ID	N024516-002AMSD	SampType:	MSD	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	ZZZZZZ	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1047.340	50	500.0	553.4	98.8	85	115	1052	0.448	20	

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62467	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2017	RunNo:	115657
Client ID:	PBW	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.027	1.0									

Sample ID	N024518-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2017	RunNo:	115657
Client ID:	ZZZZZZ	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.652	1.0	10.00	2.583	90.7	75	125				

Sample ID	N024518-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2017	RunNo:	115657
Client ID:	ZZZZZZ	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662389

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.587	1.0	10.00	2.583	90.0	75	125	11.65	0.554	20	

Sample ID	LCS-62467	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2017	RunNo:	115657
Client ID:	LCSW	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.960	1.0	10.00	0	110	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:15:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170608F**	QC Batch: **R115677**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	6/8/2017 10:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170608F**	QC Batch: **R115677**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	6/8/2017 10:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R115677**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **LCSW**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663501**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.403	5.0	100.0	0	97.4	85	115				

Sample ID **MB-R115677**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **PBW**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663502**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N024516-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **ZZZZZZ**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663504**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	231.602	5.0						231.6	0	30	

Sample ID **N024516-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **ZZZZZZ**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663506**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	244.589	5.0	100.0	151.5	93.1	75	125				

Sample ID **N024516-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **ZZZZZZ**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663507**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	246.753	5.0	100.0	151.5	95.2	75	125	244.6	0.881	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170608A** QC Batch: **R115671**				PrepDate			Analyst: **RAB**
Chloride	1200	0.72	100		mg/L	200	6/8/2017 04:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170608A** QC Batch: **R115671**				PrepDate			Analyst: **RAB**
Sulfate	400	0.64	25		mg/L	50	6/8/2017 02:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-002

Client Sample ID: TW-03D-0617
Collection Date: 6/7/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170608A** QC Batch: **R115671**				PrepDate			Analyst: **RAB**
Chloride	2200	1.8	250		mg/L	500	6/8/2017 05:11 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170608A** QC Batch: **R115671**				PrepDate			Analyst: **RAB**
Sulfate	510	0.64	25		mg/L	50	6/8/2017 02:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	MB-R115671_CL	SampType:	MBLK	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	PBW	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663237

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.126	0.50									

Sample ID	LCS-R115671_CL	SampType:	LCS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	LCSW	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663238

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.996	0.50	2.000	0	99.8	90	110				

Sample ID	N024516-001CMS	SampType:	MS	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663250

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1559.760	100	400.0	1161	99.8	80	120				

Sample ID	N024516-001CMSD	SampType:	MSD	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663251

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1558.900	100	400.0	1161	99.5	80	120	1560	0.0552	20	

Sample ID	N024516-001CDUP	SampType:	DUP	TestCode:	300_W_CLP	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663252

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1147.620	100						1161	1.14	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R115671_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	PBW	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663305

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.174	0.50									

Sample ID	LCS-R115671_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	LCSW	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID	N024516-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	600.465	25	200.0	395.0	103	80	120				

Sample ID	N024516-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663318

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	598.475	25	200.0	395.0	102	80	120	600.5	0.332	20	

Sample ID	N024516-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663319

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	394.580	25						395.0	0.108	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S Spike/Surrogate outside of limits due to matrix interference
- DO Surrogate Diluted Out

Calculations are based on raw values

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:15:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION			**SM4500-NO3F**				
RunID: **NV00922-WC_170619E**	QC Batch: **R115849**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	6/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170619F**	QC Batch: **R115850**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	6/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115849	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	PBW	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669856

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115849	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	LCSW	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669857

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.769	0.050	0.5000	0	154	85	115				S

Sample ID	N024499-002EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	ZZZZZZ	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669859

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.223	0.25						3.159	2.01	20	

Sample ID	N024499-002EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	ZZZZZZ	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.506	0.25	2.500	3.159	93.9	75	125				

Sample ID	N024499-002EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	ZZZZZZ	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669861

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.504	0.25	2.500	3.159	93.8	75	125	5.506	0.0363	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115850	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	PBW	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669885

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115850	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	LCSW	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669886

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.492	0.050	0.5000	0	98.4	85	115				

Sample ID	N024516-002DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	ZZZZZZ	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669888

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.946	0.25						2.838	3.75	20	

Sample ID	N024516-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	ZZZZZZ	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669889

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.880	0.25	2.500	2.838	81.7	75	125				

Sample ID	N024516-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	ZZZZZZ	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.095	0.25	2.500	2.838	90.3	75	125	4.880	4.31	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170613D**	QC Batch: **62508**			PrepDate	**6/12/2017**		Analyst: **CEI**
Calcium	160000	28	500		ug/L	1	6/13/2017 04:30 PM
Iron	20	1.8	20		ug/L	1	6/13/2017 04:30 PM
Magnesium	36000	4.4	100		ug/L	1	6/13/2017 04:30 PM
Sodium	730000	660	12000		ug/L	25	6/15/2017 12:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-002

Client Sample ID: TW-03D-0617
Collection Date: 6/7/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170613D**	QC Batch: **62508**			PrepDate	**6/12/2017**		Analyst: **CEI**
Calcium	200000	28	500		ug/L	1	6/13/2017 05:09 PM
Iron	ND	1.8	20		ug/L	1	6/13/2017 05:09 PM
Magnesium	26000	4.4	100		ug/L	1	6/13/2017 05:09 PM
Sodium	1400000	1300	25000		ug/L	50	6/15/2017 12:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-62508**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/12/2017**	RunNo: **115752**
Client ID: **PBW**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-62508**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/12/2017**	RunNo: **115752**
Client ID: **LCSW**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10605.745	500	10000	0	106	85	115				
Iron	112.226	20	100.0	0	112	85	115				
Magnesium	10312.904	100	10000	0	103	85	115				

Sample ID **N024516-001B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/12/2017**	RunNo: **115752**
Client ID: **ZZZZZZ**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	166623.511	500	10000	159600	70.6	75	125				S
Iron	113.115	20	100.0	20.06	93.1	75	125				
Magnesium	44819.652	100	10000	36320	85.0	75	125				

Sample ID **N024516-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/12/2017**	RunNo: **115752**
Client ID: **ZZZZZZ**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	168666.968	500	10000	159600	91.0	75	125	166600	1.22	20	
Iron	113.769	20	100.0	20.06	93.7	75	125	113.1	0.576	20	
Magnesium	45114.007	100	10000	36320	87.9	75	125	44820	0.655	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-62508	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/12/2017	RunNo:	115799
Client ID:	PBW	Batch ID:	62508	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/15/2017	SeqNo:	2668400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-62508	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/12/2017	RunNo:	115799
Client ID:	LCSW	Batch ID:	62508	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/15/2017	SeqNo:	2668401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19718.808	500	20000	0	98.6	85	115				

Sample ID	N024516-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/12/2017	RunNo:	115799
Client ID:	ZZZZZZ	Batch ID:	62508	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/15/2017	SeqNo:	2668424

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1440102.189	25000	20000	1360000	401	75	125				S

Sample ID	N024516-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/12/2017	RunNo:	115799
Client ID:	ZZZZZZ	Batch ID:	62508	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/15/2017	SeqNo:	2668425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1461968.564	25000	20000	1360000	511	75	125	1440000	1.51	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:15:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170608A**	QC Batch: **62467**			PrepDate	**6/8/2017**		Analyst: **CEI**
Manganese	180	0.056	0.50		µg/L	1	6/8/2017 01:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
EPA 3010A			**EPA 6020**				
RunID: **NV00922-ICP7_170608A**	QC Batch: **62467**			PrepDate	**6/8/2017**	Analyst: **CEI**	
Manganese	9.0	0.056	0.50		µg/L	1	6/8/2017 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	ND	Not Detected at the Reporting Limit
S	Spike/Surrogate outside of limits due to matrix interference		Results are wet unless otherwise specified
DO	Surrogate Diluted Out		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62467**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2017**	RunNo: **115657**
Client ID: **PBW**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **N024518-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2017**	RunNo: **115657**
Client ID: **ZZZZZZ**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.422	0.50	100.0	0	93.4	75	125				

Sample ID **N024518-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2017**	RunNo: **115657**
Client ID: **ZZZZZZ**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.562	0.50	100.0	0	92.6	75	125	93.42	0.925	20	

Sample ID **LCS-62467**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2017**	RunNo: **115657**
Client ID: **LCSW**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	104.945	0.50	100.0	0	105	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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P: 562.219.7435 F:562.219.7436
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CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Nara Tey	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:
Title: sample tech		
Signature: Date: 6/7/17	Sampled By: Nara Tey	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	
Project Name: PG&E Topock - PMP	Signature: Date: 6/7/17	
Project Number: RC000753.801B		

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	X	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact	X	
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number	2	
Global ID:		Regulatory		6. Method of Cooling: ICE		
		Specify State:		Sample Temp: 2.7°C		

Courier: ASSET
Tracking No.:

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Matrix	250 mL poly	250 mL poly	1 L poly	1 L poly	1 L poly	500 mL poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	1 liter poly	125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
							Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH	Dissolved metals (SW6020A) FF; HNO3, 500 mL poly Cr	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 Ca, Mg, Mn, Fe, Na	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B); HNO3 Fe	Anions (E300.0); Cl, SO4	Specific Conductance (E120.1)	pH (SM4500HB)	TDS (SM2540C)	Alkalinity (Total, reported as CaCO3) (SM2320B)	TSS (SM2540)	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4					
1	N024516 - 01	PE-01-0617	6/7/17	1115		Ground x Sediment	X		X	X			X	X	X	X	X		X	E	4	P	BN	
2	- 02	TW-03D-0617	6/7/17	1100		Potable Soil		X	X	X			X	X	X	X	X		X	E	4	P	BN	
3						NPDES Other Solid																		
4						Surface																		
5																								
6																								
7																								
8																								
9																								
10																								

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	6/7/17 1340		6/7/17 @ 1340
Reliquished by (Signature and Printed Name): MARTIN	Date/Time: 6/7/17 1629	Reliquished by (Signature and Printed Name): Joandra Rodriguez	Date/Time: 6/7/17 16:29
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$	
Others/Specify:	B	(NH4)2SO4/NH4OH	

Container Type:

T=Tube	V=VOA	P=Pint
J=Jar	B=Tedlar	G=Glass
M=Metal	M=Metal	C=Can

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	6/7/2017	Workorder:	N024516
Rep sample Temp (Deg C):	2.7	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 6/14/2017

Reviewed By: 6/15/2017

ASSET Laboratories

WORK ORDER Summary

07-Jun-17

WorkOrder: N024516

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801B **QC Level:** Level IV **Date Received:** 6/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024516-001A	PE-01-0617	6/7/2017 11:15:00 AM	6/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024516-001B			6/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024516-001C			6/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			6/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			6/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			6/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			6/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			6/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			6/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N024516-001D			6/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024516-002A	TW-03D-0617	6/7/2017 11:00:00 AM	6/21/2017		SM 3500-Cr B	HEXAVALENT CHROMIUM	☐	☐	☐	WW
N024516-002B			6/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024516-002C			6/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			6/21/2017		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Jun-17

WorkOrder: N024516

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801B **QC Level:** Level IV **Date Received:** 6/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024516-002C	TW-03D-0617	6/7/2017 11:00:00 AM	6/21/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			6/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			6/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			6/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			6/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N024516-002D			6/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024516-003A	FOLDER	6/21/2017	6/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			6/21/2017		Folder	Folder	☐	☐	☐	LAB
			6/21/2017		Folder	Folder	☐	☐	☐	LAB

ARCADIS

Project: PG&E Topock - PMP

Project No.: RC000753.801B

ASSET Laboratories Work Order:

N024516

ANALYTICAL and QC RESULTS
SAMPLE RECEIVING ITEMS

PRIVILEGED AND CONFIDENTIAL

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June 21, 2017

Dan Bush
ARCADIS U.S., Inc. - California
1410 Rocky Ridge Dr #330
Roseville, CA 95661

TEL: (916) 786-3302
FAX:

Workorder No.: N024516

RE: PG&E Topock - PMP, RC000753.801B

Attention: Dan Bush

Enclosed are the results for sample(s) received on June 07, 2017 by ASSET Laboratories . The sample(s) are tested for the parameters as indicated in the enclosed chain of custody in accordance with the applicable laboratory certifications.

Thank you for the opportunity to service the needs of your company.

Please feel free to call me at (702) 307-2659 if I can be of further assistance to your company.

Sincerely,

for

Puri Romualdo
Laboratory Director

The cover letter is an integral part of this analytical report. This Laboratory Report cannot be reproduced in part or in its entirety without written permission from the client and Advanced Technology Laboratories - Las Vegas.

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801B
Lab Order: N024516

CASE NARRATIVE

SAMPLE RECEIVING/GENERAL COMMENTS:

All sample containers were received intact with proper chain of custody documentation.

Information on sample receipt conditions including discrepancies can be found in attached Sample Receipt Checklist Form.

Cooler temperature and sample preservation were verified upon receipt of samples if applicable.

Samples were analyzed within method holding time except for pH. pH testing is specified to be performed in the field within 15 minutes of sampling;sample was received and analyzed past the regulatory holding time.

Analytical Comments for EPA 6010B_Dissolved:

Matrix Spike (MS) is outside recovery criteria for Calcium on QC sample N024516-001B-MS1 possibly due to matrix interference. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are outside recovery criteria for Sodium on QC samples N024516-002B-MS2 and N024516-002B-MSD2 since the analyte concentration in the sample is disproportionate to the spike level. The associated Laboratory Control Sample (LCS) recovery was acceptable.

Analytical Comments for SM 4500-NO3F:

Laboratory Control Sample (LCS) recovery biased high in analytical batch R115849. Samples reported in this analytical batch were non-detect (ND) therefore reanalysis of the samples was not necessary.

ASSET LABORATORIES
"Serving Clients with Passion and Professionalism"
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ORELAP/NELAP Cert 4046

ASSET Laboratories

Date: *21-Jun-17*

CLIENT: ARCADIS U.S., Inc. - California
Project: PG&E Topock - PMP, RC000753.801B
Lab Order: N024516
Contract No:

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date	Date Received	Date Reported
N024516-001A	PE-01-0617	Groundwater	6/7/2017 11:15:00 AM	6/7/2017	6/21/2017
N024516-001B	PE-01-0617	Groundwater	6/7/2017 11:15:00 AM	6/7/2017	6/21/2017
N024516-001C	PE-01-0617	Groundwater	6/7/2017 11:15:00 AM	6/7/2017	6/21/2017
N024516-001D	PE-01-0617	Groundwater	6/7/2017 11:15:00 AM	6/7/2017	6/21/2017
N024516-002A	TW-03D-0617	Groundwater	6/7/2017 11:00:00 AM	6/7/2017	6/21/2017
N024516-002B	TW-03D-0617	Groundwater	6/7/2017 11:00:00 AM	6/7/2017	6/21/2017
N024516-002C	TW-03D-0617	Groundwater	6/7/2017 11:00:00 AM	6/7/2017	6/21/2017
N024516-002D	TW-03D-0617	Groundwater	6/7/2017 11:00:00 AM	6/7/2017	6/21/2017

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	PE-01-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:15:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-001		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170608E**	QC Batch: **R115676**			PrepDate			Analyst: **LR**
Specific Conductance	4500	0.10	0.10		umhos/cm	1	6/8/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
SPECIFIC CONDUCTANCE							
			EPA 120.1				
RunID: **NV00922-WC_170608E**	QC Batch: **R115676**			PrepDate			Analyst: **LR**
Specific Conductance	7800	0.10	0.10		umhos/cm	1	6/8/2017 09:35 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 120.1_WPGE

Sample ID **N024516-002CDUP**	SampType: **DUP**	TestCode: **120.1_WPGE**	Units: **umhos/cm**	Prep Date:				RunNo: **115676**		
Client ID: **ZZZZZZ**	Batch ID: **R115676**	TestNo: **EPA 120.1**		Analysis Date: **6/8/2017**				SeqNo: **2663500**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Specific Conductance	7720.000	0.10						7750	0.388	10	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170608C**	QC Batch: **R115674**			PrepDate			Analyst: **LR**
pH	7.6	0.10	0.10	H	pH Units	1	6/8/2017 09:25 AM
Temp. at time of pH Analysis	17	0.10	0.10	H	°C	1	6/8/2017 09:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-002

Client Sample ID: TW-03D-0617
Collection Date: 6/7/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
PH							
			SM4500-H+B				
RunID: **NV00922-WC_170608C**	QC Batch: **R115674**			PrepDate			Analyst: **LR**
pH	7.5	0.10	0.10	H	pH Units	1	6/8/2017 09:25 AM
Temp. at time of pH Analysis	16	0.10	0.10	H	°C	1	6/8/2017 09:25 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 150.1_4500H+B_W

Sample ID **N024516-001CDUP** SampType: **DUP** TestCode: **150.1_4500H** Units: **pH Units** Prep Date: RunNo: **115674**
Client ID: **ZZZZZZ** Batch ID: **R115674** TestNo: **SM4500-H+B** Analysis Date: **6/8/2017** SeqNo: **2663486**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
pH	7.530	0.10						7.560	0.398	10	H
Temp. at time of pH Analysis	16.200	0.10						16.80	3.64	10	H

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170608G**	QC Batch: **62476**				PrepDate	**6/8/2017**	Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	2600	33	33		mg/L	1	6/8/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
TOTAL FILTERABLE RESIDUE							
			SM2540C				
RunID: **NV00922-WC_170608G**	QC Batch: **62476**			PrepDate	**6/8/2017**		Analyst: **LR**
Total Dissolved Solids (Residue, Filterable)	4400	50	50		mg/L	1	6/8/2017 01:07 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 160.1_2540C_W

Sample ID **LCS-62476**	SampType: **LCS**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2017**	RunNo: **115678**
Client ID: **LCSW**	Batch ID: **62476**	TestNo: **SM2540C**		Analysis Date: **6/8/2017**	SeqNo: **2664148**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	968.000	10	1000	0	96.8	80	120				

Sample ID **MB-62476**	SampType: **MBLK**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2017**	RunNo: **115678**
Client ID: **PBW**	Batch ID: **62476**	TestNo: **SM2540C**		Analysis Date: **6/8/2017**	SeqNo: **2664149**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	ND	10									

Sample ID **N024516-002CDUP**	SampType: **DUP**	TestCode: **160.1_2540C**	Units: **mg/L**	Prep Date: **6/8/2017**	RunNo: **115678**
Client ID: **ZZZZZZ**	Batch ID: **62476**	TestNo: **SM2540C**		Analysis Date: **6/8/2017**	SeqNo: **2664152**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Dissolved Solids (Residue, Filtera	4400.000	50						4440	0.905	5	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM BY IC							
			EPA 218.6				
RunID: **NV00922-IC7_170608A** QC Batch: **R115654**				PrepDate			Analyst: **RAB**
Hexavalent Chromium	ND	0.066	0.20		µg/L	1	6/8/2017 11:44 AM
DISSOLVED METALS BY ICP-MS							
		EPA 3010A		**EPA 6020**			
RunID: **NV00922-ICP7_170608A** QC Batch: **62467**				PrepDate	**6/8/2017**		Analyst: **CEI**
Chromium	ND	0.019	1.0		µg/L	1	6/8/2017 01:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
HEXAVALENT CHROMIUM							
			SM 3500-CR B				
RunID: **NV00922-WC_170620C**	QC Batch: **R115875**			PrepDate			Analyst: **QBM**
Chromium, Hexavalent	550	6.9	50		µg/L	5	6/20/2017
DISSOLVED METALS BY ICP-MS							
	EPA 3010A		**EPA 6020**				
RunID: **NV00922-ICP7_170608A**	QC Batch: **62467**			PrepDate	**6/8/2017**		Analyst: **CEI**
Chromium	550	0.096	5.0		µg/L	5	6/8/2017 02:02 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **MB-R115654**	SampType: **MBLK**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **PBW**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662312**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **LCS-R115654**	SampType: **LCS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **LCSW**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662313**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	5.128	0.20	5.000	0	103	90	110				

Sample ID **N024518-001ADUP**	SampType: **DUP**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662323**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	2.505	0.20						2.566	2.42	20	

Sample ID **N024519-001AMS**	SampType: **MS**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662324**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.557	0.20	5.000	4.472	102	90	110				

Sample ID **N024519-001AMSD**	SampType: **MSD**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662325**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.705	0.20	5.000	4.472	105	90	110	9.557	1.54	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID	N024516-001AMS	SampType:	MS	TestCode:	218.6_WPGE	Units:	µg/L	Prep Date:		RunNo:	115654
Client ID:	ZZZZZZ	Batch ID:	R115654	TestNo:	EPA 218.6			Analysis Date:	6/8/2017	SeqNo:	2662330

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	1.069	0.20	1.000	0	107	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID	LCS-R115875	SampType:	LCS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	LCSW	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670867

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	100.420	10	100.0	0	100	85	115				

Sample ID	MB-R115875	SampType:	MBLK	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	PBW	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670868

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	ND	10									

Sample ID	N024516-002ADUP	SampType:	DUP	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	ZZZZZZ	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670870

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	552.955	50						553.4	0.0895	20	

Sample ID	N024516-002AMS	SampType:	MS	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	ZZZZZZ	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670871

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1052.040	50	500.0	553.4	99.7	85	115				

Sample ID	N024516-002AMSD	SampType:	MSD	TestCode:	3500_CrBPG	Units:	µg/L	Prep Date:		RunNo:	115875
Client ID:	ZZZZZZ	Batch ID:	R115875	TestNo:	SM 3500-Cr B			Analysis Date:	6/20/2017	SeqNo:	2670872

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	1047.340	50	500.0	553.4	98.8	85	115	1052	0.448	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	MB-62467	SampType:	MBLK	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2017	RunNo:	115657
Client ID:	PBW	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662383

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.027	1.0									

Sample ID	N024518-001B-MS	SampType:	MS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2017	RunNo:	115657
Client ID:	ZZZZZZ	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662388

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.652	1.0	10.00	2.583	90.7	75	125				

Sample ID	N024518-001B-MSD	SampType:	MSD	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2017	RunNo:	115657
Client ID:	ZZZZZZ	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662389

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.587	1.0	10.00	2.583	90.0	75	125	11.65	0.554	20	

Sample ID	LCS-62467	SampType:	LCS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:	6/8/2017	RunNo:	115657
Client ID:	LCSW	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662398

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.960	1.0	10.00	0	110	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170608F**	QC Batch: **R115677**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	230	1.2	5.0		mg/L	1	6/8/2017 10:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-002

Client Sample ID: TW-03D-0617
Collection Date: 6/7/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ALKALINITY, SPECIATED							
			SM 2320 B				
RunID: **NV00922-WC_170608F**	QC Batch: **R115677**			PrepDate			Analyst: **LR**
Alkalinity, Total (As CaCO3)	150	1.2	5.0		mg/L	1	6/8/2017 10:15 AM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 2320_W_SP

Sample ID **LCS-R115677**	SampType: **LCS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **LCSW**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663501**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	97.403	5.0	100.0	0	97.4	85	115				

Sample ID **MB-R115677**	SampType: **MBLK**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **PBW**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663502**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	5.0									

Sample ID **N024516-001CDUP**	SampType: **DUP**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **ZZZZZZ**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663504**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	231.602	5.0						231.6	0	30	

Sample ID **N024516-002CMS**	SampType: **MS**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **ZZZZZZ**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663506**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	244.589	5.0	100.0	151.5	93.1	75	125				

Sample ID **N024516-002CMSD**	SampType: **MSD**	TestCode: **2320_W_SP**	Units: **mg/L**	Prep Date:			RunNo: **115677**			
Client ID: **ZZZZZZ**	Batch ID: **R115677**	TestNo: **SM 2320 B**		Analysis Date: **6/8/2017**			SeqNo: **2663507**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	246.753	5.0	100.0	151.5	95.2	75	125	244.6	0.881	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170608A** QC Batch: **R115671**				PrepDate			Analyst: **RAB**
Chloride	1200	0.72	100		mg/L	200	6/8/2017 04:10 PM
ANIONS BY ION CHROMATOGRAPHY							
			EPA 300.0				
RunID: **NV00922-IC8_170608A** QC Batch: **R115671**				PrepDate			Analyst: **RAB**
Sulfate	400	0.64	25		mg/L	50	6/8/2017 02:23 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT:	ARCADIS U.S., Inc. - California	**Client Sample ID:**	TW-03D-0617
Lab Order:	N024516	**Collection Date:**	6/7/2017 11:00:00 AM
Project:	PG&E Topock - PMP, RC000753.801B	**Matrix:**	GROUNDWATER
Lab ID:	N024516-002		

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170608A** QC Batch: **R115671**				PrepDate			Analyst: **RAB**
Chloride	2200	1.8	250		mg/L	500	6/8/2017 05:11 PM
ANIONS BY ION CHROMATOGRAPHY							
EPA 300.0							
RunID: **NV00922-IC8_170608A** QC Batch: **R115671**				PrepDate			Analyst: **RAB**
Sulfate	510	0.64	25		mg/L	50	6/8/2017 02:38 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID	**MB-R115671_CL**	SampType: **MBLK**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:		RunNo: **115671**
Client ID:	**PBW**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date:	**6/8/2017**	SeqNo: **2663237**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.126	0.50									

Sample ID	**LCS-R115671_CL**	SampType: **LCS**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:		RunNo: **115671**
Client ID:	**LCSW**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date:	**6/8/2017**	SeqNo: **2663238**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.996	0.50	2.000	0	99.8	90	110				

Sample ID	**N024516-001CMS**	SampType: **MS**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:		RunNo: **115671**
Client ID:	**ZZZZZZ**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date:	**6/8/2017**	SeqNo: **2663250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1559.760	100	400.0	1161	99.8	80	120				

Sample ID	**N024516-001CMSD**	SampType: **MSD**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:		RunNo: **115671**
Client ID:	**ZZZZZZ**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date:	**6/8/2017**	SeqNo: **2663251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1558.900	100	400.0	1161	99.5	80	120	1560	0.0552	20	

Sample ID	**N024516-001CDUP**	SampType: **DUP**	TestCode: **300_W_CLP**	Units: **mg/L**	Prep Date:		RunNo: **115671**
Client ID:	**ZZZZZZ**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date:	**6/8/2017**	SeqNo: **2663252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1147.620	100						1161	1.14	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID	MB-R115671_SO4	SampType:	MBLK	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	PBW	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663305

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.174	0.50									

Sample ID	LCS-R115671_SO4	SampType:	LCS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	LCSW	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663306

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.936	0.50	4.000	0	98.4	90	110				

Sample ID	N024516-001CMS	SampType:	MS	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663317

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	600.465	25	200.0	395.0	103	80	120				

Sample ID	N024516-001CMSD	SampType:	MSD	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663318

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	598.475	25	200.0	395.0	102	80	120	600.5	0.332	20	

Sample ID	N024516-001CDUP	SampType:	DUP	TestCode:	300_W_SO4P	Units:	mg/L	Prep Date:		RunNo:	115671
Client ID:	ZZZZZZ	Batch ID:	R115671	TestNo:	EPA 300.0			Analysis Date:	6/8/2017	SeqNo:	2663319

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	394.580	25						395.0	0.108	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170619E**	QC Batch: **R115849**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	ND	0.022	0.050		mg/L	1	6/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-002

Client Sample ID: TW-03D-0617
Collection Date: 6/7/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
NITRATE/NITRITE-N BY CADMIUM REDUCTION							
			SM4500-NO3F				
RunID: **NV00922-WC_170619F**	QC Batch: **R115850**		PrepDate				Analyst: **RB**
Nitrate/Nitrite as N	2.8	0.11	0.25		mg/L	5	6/19/2017

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115849	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	PBW	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669856

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115849	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	LCSW	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669857

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.769	0.050	0.5000	0	154	85	115				S

Sample ID	N024499-002EDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	ZZZZZZ	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669859

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	3.223	0.25						3.159	2.01	20	

Sample ID	N024499-002EMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	ZZZZZZ	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669860

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.506	0.25	2.500	3.159	93.9	75	125				

Sample ID	N024499-002EMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115849
Client ID:	ZZZZZZ	Batch ID:	R115849	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669861

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.504	0.25	2.500	3.159	93.8	75	125	5.506	0.0363	20	

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID	MB-R115850	SampType:	MBLK	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	PBW	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669885

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID	LCS-R115850	SampType:	LCS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	LCSW	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669886

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.492	0.050	0.5000	0	98.4	85	115				

Sample ID	N024516-002DDUP	SampType:	DUP	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	ZZZZZZ	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669888

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	2.946	0.25						2.838	3.75	20	

Sample ID	N024516-002DMS	SampType:	MS	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	ZZZZZZ	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669889

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	4.880	0.25	2.500	2.838	81.7	75	125				

Sample ID	N024516-002DMSD	SampType:	MSD	TestCode:	4500N03F_W	Units:	mg/L	Prep Date:		RunNo:	115850
Client ID:	ZZZZZZ	Batch ID:	R115850	TestNo:	SM4500-NO3			Analysis Date:	6/19/2017	SeqNo:	2669890

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	5.095	0.25	2.500	2.838	90.3	75	125	4.880	4.31	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP							
	EPA 3010A			**EPA 6010B**			
RunID: **NV00922-ICP2_170613D**	QC Batch: **62508**			PrepDate	**6/12/2017**		Analyst: **CEI**
Calcium	160000	28	500		ug/L	1	6/13/2017 04:30 PM
Iron	20	1.8	20		ug/L	1	6/13/2017 04:30 PM
Magnesium	36000	4.4	100		ug/L	1	6/13/2017 04:30 PM
Sodium	730000	660	12000		ug/L	25	6/15/2017 12:12 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-002

Client Sample ID: TW-03D-0617
Collection Date: 6/7/2017 11:00:00 AM
Matrix: GROUNDWATER

DISSOLVED METALS BY ICP

EPA 3010A **EPA 6010B**

RunID: **NV00922-ICP2_170613D** QC Batch: **62508** PrepDate **6/12/2017** Analyst: **CEI**

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
Calcium	200000	28	500		ug/L	1	6/13/2017 05:09 PM
Iron	ND	1.8	20		ug/L	1	6/13/2017 05:09 PM
Magnesium	26000	4.4	100		ug/L	1	6/13/2017 05:09 PM
Sodium	1400000	1300	25000		ug/L	50	6/15/2017 12:15 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **MB-62508**	SampType: **MBLK**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/12/2017**	RunNo: **115752**
Client ID: **PBW**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666244**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	ND	500									
Iron	ND	20									
Magnesium	ND	100									

Sample ID **LCS1-62508**	SampType: **LCS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/12/2017**	RunNo: **115752**
Client ID: **LCSW**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666245**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10605.745	500	10000	0	106	85	115				
Iron	112.226	20	100.0	0	112	85	115				
Magnesium	10312.904	100	10000	0	103	85	115				

Sample ID **N024516-001B-MS1**	SampType: **MS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/12/2017**	RunNo: **115752**
Client ID: **ZZZZZZ**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666251**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	166623.511	500	10000	159600	70.6	75	125				S
Iron	113.115	20	100.0	20.06	93.1	75	125				
Magnesium	44819.652	100	10000	36320	85.0	75	125				

Sample ID **N024516-001B-MSD**	SampType: **MSD**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date: **6/12/2017**	RunNo: **115752**
Client ID: **ZZZZZZ**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666252**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	168666.968	500	10000	159600	91.0	75	125	166600	1.22	20	
Iron	113.769	20	100.0	20.06	93.7	75	125	113.1	0.576	20	
Magnesium	45114.007	100	10000	36320	87.9	75	125	44820	0.655	20	

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID	MB-62508	SampType:	MBLK	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/12/2017	RunNo:	115799
Client ID:	PBW	Batch ID:	62508	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/15/2017	SeqNo:	2668400

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	ND	500									

Sample ID	LCS2-62508	SampType:	LCS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/12/2017	RunNo:	115799
Client ID:	LCSW	Batch ID:	62508	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/15/2017	SeqNo:	2668401

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19718.808	500	20000	0	98.6	85	115				

Sample ID	N024516-002B-MS2	SampType:	MS	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/12/2017	RunNo:	115799
Client ID:	ZZZZZZ	Batch ID:	62508	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/15/2017	SeqNo:	2668424

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1440102.189	25000	20000	1360000	401	75	125				S

Sample ID	N024516-002B-MSD	SampType:	MSD	TestCode:	6010_WDPG	Units:	ug/L	Prep Date:	6/12/2017	RunNo:	115799
Client ID:	ZZZZZZ	Batch ID:	62508	TestNo:	EPA 6010B	EPA 3010A		Analysis Date:	6/15/2017	SeqNo:	2668425

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1461968.564	25000	20000	1360000	511	75	125	1440000	1.51	20	S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-001

Client Sample ID: PE-01-0617
Collection Date: 6/7/2017 11:15:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170608A**	QC Batch: **62467**			PrepDate	**6/8/2017**		Analyst: **CEI**
Manganese	180	0.056	0.50		µg/L	1	6/8/2017 01:46 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Lab Order: N024516
Project: PG&E Topock - PMP, RC000753.801B
Lab ID: N024516-002

Client Sample ID: TW-03D-0617
Collection Date: 6/7/2017 11:00:00 AM
Matrix: GROUNDWATER

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed
DISSOLVED METALS BY ICP-MS							
	EPA 3010A			**EPA 6020**			
RunID: **NV00922-ICP7_170608A**	QC Batch: **62467**			PrepDate	**6/8/2017**		Analyst: **CEI**
Manganese	9.0	0.056	0.50		µg/L	1	6/8/2017 01:51 PM

Qualifiers:

B	Analyte detected in the associated Method Blank
H	Holding times for preparation or analysis exceeded
S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out
E	Value above quantitation range
ND	Not Detected at the Reporting Limit
	Results are wet unless otherwise specified

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **MB-62467**	SampType: **MBLK**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2017**	RunNo: **115657**
Client ID: **PBW**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **N024518-001B-MS**	SampType: **MS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2017**	RunNo: **115657**
Client ID: **ZZZZZZ**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662415**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.422	0.50	100.0	0	93.4	75	125				

Sample ID **N024518-001B-MSD**	SampType: **MSD**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2017**	RunNo: **115657**
Client ID: **ZZZZZZ**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662416**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.562	0.50	100.0	0	92.6	75	125	93.42	0.925	20	

Sample ID **LCS-62467**	SampType: **LCS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date: **6/8/2017**	RunNo: **115657**
Client ID: **LCSW**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662425**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	104.945	0.50	100.0	0	105	85	115				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SAMPLE RECEIVING ITEMS

ASSET LABORATORIES
ANALYTICAL SUPPORT SERVICES FOR ENVIRONMENTAL TECHNOLOGIES

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P: 702.307.2659 F: 702.307.2691
California: 11060 Artesia Blvd., Ste C, Cerritos, CA 90703
P: 562.219.7435 F:562.219.7436
www.assetlaboratories.com

CHAIN OF CUSTODY RECORD

Page 1 of 1

Client: Arcadis	Report to: Dan Bush	Bill to: Marty Bloes
Address: 1410 Rocky Ridge Dr # 330	Company: Arcadis	Address:
Address: Roseville, CA 95661	Email: dan.bush@arcadis.com; daniel.moore@critigen.com	Address:
Phone: 916-786-3302 Fax:	Address: 1410 Rocky Ridge Dr # 330 Roseville, CA 95661	Email to: mbloes@pivox.com P.O.#
Submitted By: Nana Tey	Phone: 916-786-3302 Fax:	Phone: 949-727-1400, ext 200 Fax:
Title: sample tech		
Signature: Date: 6/7/17	Sampled By: Nana Tey	
I hereby authorize ASSET Labs to perform the tests indicated below.	I attest to the validity and authenticity of this sample. I am aware that tampering with or intentionally mislabeling the sample location, date or time of collection is considered fraud and may be grounds for	
Project Name: PG&E Topock - PMP	Signature: Date: 6/7/17	
Project Number: RC000753.801B		

EDD Requirement		QA/QC		Sample Receipt Condition	Y	N
Excel EDD		RTNE		1. Chilled	X	
Geotracker		RWQCB	✓	2. Headspace		
Labspec		CalTrans		3. Container Intact	X	
Others	✓	LEVEL III		4. Seal Present		
Specify: RWQCB		LEVEL IV		5. IR number	2	
Global ID:		Regulatory		6. Method of Cooling: ICE		
		Specify State:		Sample Temp: 2.7°C		

Courier: ASSET
Tracking No.:

Matrix: Ground x | Potable | NPDES | Surface; Sediment | Soil | Other Solid

Item No.	Laboratory Work Order No.	Sample ID/Location	Sample Date	Sample Time	Others	Cr(VI) FF (E218.6) (NH4)2, SO4, NH4, OH 250 mL poly	Cr(VI) FF (SM3500-CrB) (NH4)2, SO4, NH4, OH 250 mL poly	Dissolved metals (SW6020A) FF; HNO3, 500 mL poly Cr	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 1 L poly Ca, Mg, Mn, Fe, Na	Dissolved metals (SW6010B/SW6020Adis) FF; HNO3 1 L poly As, Mn, Fe, Se, Mo, Ba	Total metals (SW6010B); HNO3 500 mL poly Fe	Anions (E300.0); Cl, SO4 1 liter poly	Specific Conductance (E120.1) 1 liter poly	pH (SM4500HB) 1 liter poly	TDS (SM2540C) 1 liter poly	Alkalinity (Total, reported as CaCO3) (SM2320B) 1 liter poly	TSS (SM2540) 1 liter poly	Nitrate/Nitrite (SM4500N03) Nitrate; H2SO4 125 mL poly	Turn Around Time	No. of Container	Container Type	PRESERVATION	Remarks
1	N024516 - 01	PE-01-0617	6/7/17	1115		X		X	X			X	X	X	X	X		X	E	4	P	BN	
2	- 02	TW-03D-0617	6/7/17	1100			X	X	X			X	X	X	X	X		X	E	4	P	BN	
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							

Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:
	6/7/17 1340		6/7/17 @ 1340
Reliquished by (Signature and Printed Name): MARTIN	Date/Time: 6/7/17 1629	Reliquished by (Signature and Printed Name): Joandra Rodriguez	Date/Time: 6/7/17 16:29
Reliquished by (Signature and Printed Name):	Date/Time:	Reliquished by (Signature and Printed Name):	Date/Time:

Turn Around Time (TAT)

	A	< 24 Hrs or Same Day TAT
	B	= Next Workday
	C	= 2 Workdays
	D	= 3 Workdays
X	E	= Routine 5-7 Workdays

TAT Starts at 8 AM the following day if samples received after 3:00PM.

Special Instruction:
Tittle 22 Metals - Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Preservatives:

H=HCL	N=HNO_3	S=H_2SO_4	C=4°C	T=Tube	V=VOA	P=Pint
Z=$Zn(AC)_2$	O=NaOH	T=$Na_2S_2O_3$		J=Jar	B=Tedlar	G=Glass
Others/Specify:	B (NH4)2SO4/NH4OH			M=Metal	M=Metal	C=Can

Container Type:

Terms
1. All samples will be disposed in 45 days and records will be destroyed in 5 years upon submission of final report.
2. Regular TAT is 5-7 business days, surcharges will apply for rush analysis
Less than 24 Hrs.=200% Next Day=100% 2 Workdays=50% 3 Workdays=35 % 4 Workdays=20%
3. Custom EDD formats will be an additional 3% of the total project price.
4. Add 10% surcharge for Level III Data Packages, 15% for Level IV Data Packages. Surcharge applied on total project price.
5. Trip Blanks and Equipment Blanks are billable sample.
6. Asset Laboratories is not responsible for samples collected using incorrect methodology.
7. Terms are net 30 days.
8. All reports are submitted in electronic format. Please inform ASSET Laboratories if hard copy of report is needed.
9. For subcontract analysis, TAT and Surcharges will vary.

White=Laboratory Copy
Yellow=Customer's Copy

ASSET Laboratories

Please review the checklist below. Any NO signifies non-compliance. Any non-compliance will be noted and must be understood as having an impact on the quality of the data. All tests will be performed as requested regardless of any compliance issues.

If you have any questions or further instruction, please contact our Project Coordinator at (702) 307-2659.

Cooler Received/Opened On:	6/7/2017	Workorder:	N024516
Rep sample Temp (Deg C):	2.7	IR Gun ID:	2
Temp Blank:	☑ Yes ☐ No		
Carrier name:	ASSET		
Last 4 digits of Tracking No.:	NA	Packing Material Used:	None
Cooling process:	☑ Ice ☐ Ice Pack ☐ Dry Ice ☐ Other ☐ None		

Sample Receipt Checklist

1. Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
2. Custody seals intact, signed, dated on shippping container/cooler?	Yes ☐	No ☐	Not Present ☑
3. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
4. Chain of custody present?	Yes ☑	No ☐	
5. Sampler's name present in COC?	Yes ☑	No ☐	
6. Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
7. Chain of custody agrees with sample labels?	Yes ☑	No ☐	
8. Samples in proper container/bottle?	Yes ☑	No ☐	
9. Sample containers intact?	Yes ☑	No ☐	
10. Sufficient sample volume for indicated test?	Yes ☑	No ☐	
11. All samples received within holding time?	Yes ☐	No ☑	
12. Temperature of rep sample or Temp Blank within acceptable limit?	Yes ☑	No ☐	NA ☐
13. Water - VOA vials have zero headspace?	Yes ☐	No ☐	NA ☑
14. Water - pH acceptable upon receipt? Example: pH > 12 for (CN,S); pH<2 for Metals	Yes ☑	No ☐	NA ☐
15. Did the bottle labels indicate correct preservatives used?	Yes ☑	No ☐	NA ☐
16. Were there Non-Conformance issues at login?	Yes ☑	No ☐	NA ☐
Was Client notified?	Yes ☐	No ☐	NA ☑

Comments: Samples for pH were past holding time upon receipt.

Checklist Completed By: YR 6/14/2017

Reviewed By: 6/15/2017

ASSET Laboratories

WORK ORDER Summary

07-Jun-17

WorkOrder: N024516

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801B **QC Level:** Level IV **Date Received:** 6/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024516-001A	PE-01-0617	6/7/2017 11:15:00 AM	6/21/2017	Groundwater	EPA 218.6	Hexavalent Chromium by IC	☐	☐	☐	WW
N024516-001B			6/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024516-001C			6/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			6/21/2017		SM4500-H+B	pH	☐	☐	☐	WW
			6/21/2017		SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			6/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			6/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			6/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			6/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N024516-001D			6/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024516-002A	TW-03D-0617	6/7/2017 11:00:00 AM	6/21/2017		SM 3500-Cr B	HEXAVALENT CHROMIUM	☐	☐	☐	WW
N024516-002B			6/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2017		EPA 3010A	AQPREP TOTAL METALS: ICP, FLAA	☐	☐	☐	WW
			6/21/2017		EPA 6010B	DISSOLVED METALS BY ICP	☐	☐	☐	WW
			6/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
			6/21/2017		EPA 6020	DISSOLVED METALS BY ICP-MS	☐	☐	☐	WW
N024516-002C			6/21/2017		EPA 120.1	SPECIFIC CONDUCTANCE	☐	☐	☐	WW
			6/21/2017		SM4500-H+B	pH	☐	☐	☐	WW

ASSET Laboratories

WORK ORDER Summary

07-Jun-17

WorkOrder: N024516

Client ID: ARCUS02

Project: PG&E Topock - PMP, RC000753.801B **QC Level:** Level IV **Date Received:** 6/7/2017

Comments: Title 22 Metals: Al, Sb, As, Ba, Be, B, Ca, Cd, Co, Cr, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, Se, Ag, Tl, V, Zn, K, Na

Sample ID	Client Sample ID	Date Collected	Date Due	Matrix	Test No	Test Name	Hld	MS	Sub	Storage
N024516-002C	TW-03D-0617	6/7/2017 11:00:00 AM	6/21/2017	Groundwater	SM2540C	TOTAL FILTERABLE RESIDUE	☐	☐	☐	WW
			6/21/2017			Total Dissolved Solids Prep	☐	☐	☐	WW
			6/21/2017		SM 2320 B	ALKALINITY, SPECIATED	☐	☐	☐	WW
			6/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
			6/21/2017		EPA 300.0	ANIONS BY ION CHROMATOGRAPHY	☐	☐	☐	WW
N024516-002D			6/21/2017		SM4500-NO3F	NITRATE/NITRITE-N BY CADMIUM REDUCTION	☐	☐	☐	WW
N024516-003A	FOLDER	6/21/2017	6/21/2017		EDD	RWQCB	☐	☐	☐	LAB
			6/21/2017		Folder	Folder	☐	☐	☐	LAB
			6/21/2017		Folder	Folder	☐	☐	☐	LAB

List of Analyst

ASSET Laboratories Work Order: **N024516**

NAME	TEST METHOD
Quennie Manimtim	SM 3500-Cr B
Claire Ignacio	EPA 6010B, EPA 6020
Ria Abes	EPA 218.6, EPA 300.0
Ryan Balilu	SM 4500-NO3F
Lilia Ramit	EPA 2320B, EPA 120.1, SM 2540C, SM 4500-H+B

EPA 120.1

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115676 **Analyst:** LSR

ASSET #: N024516 **Date Analyzed:** 6/8/2017

Method: EPA 120.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .			X			
11. LCS compounds within control limits.			X			
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 6/12/2017

2nd Level Reviewer: 6/12/2017 Date:

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 6/7/17 1030

Analyst: LSR

	Standard		Std ID	Reading	Comments
	9.76	mS/cm	CINV-170303A	9.92 @ 21.0°C	% Rec: (90-110%)
	1411	|	170329B	1417 @ 21.3°C	
	10003	|	170329A	9910 @ 21.5°C	
	99582	|	170329C	98700 @ 21.5°C	

	Sample ID	Matrix	Reading	Comments
1	ND24499-001A	H_2O	7670 @ 21.1°C	
2	" 2B	"	7690 @ 20.7°C	
3	" 2B DUP	"	7710 @ 20.4°C	
4				
5				
6				
7				
8	1413 mS/cm	CINV-170125F	1462 @ 21.1°C	
9	10000 |	170125E	10010 @ 21.3°C	
10	99899 |	161109A	102800 @ 21.5°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Date: 6/8/17 935

Analyst: LSR

	Standard		Std ID	Reading	Comments
	9.76	mS/cm	CINV-170303A	9.84 mS/cm @ 22.0°C	% Rec: (90-110%)
	1411	|	170329B	1413 @ 22.0°C	
	10003	|	170329A	10050 @ 22.1°C	
	99582	|	170329C	99500 @ 21.8°C	

	Sample ID	Matrix	Reading	Comments
1	ND24516-001C	H_2O	4460 @ 19.8°C	
2	" 2C	"	7750 @ 19.5°C	
3	" 2C DUP	"	7720 @ 19.1°C	
4				
5				
6				Julia Ramit 6/12/2017
7				
8	1413 mS/cm	CINV-170125F	1463 mS/cm @ 21.1°C	
9	10000 |	170125E	10210 @ 21.4°C	
10	99899 |	161109A	102400 @ 21.7°C	
Dup				Accept: 10% water, 20% soil
	Std Chk:			% Rec: (90-110%)

Logbook # 5

SM 4500-H+B

pH Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115674 **Instrument ID:** pH meter

ASSET #: N024516 **Analyst:** LSR

Date Analyzed: 6/8/2017

Method: EPA 150.1

pH Meter Calibration	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Was the meter calibrated using 3 buffers (4,7 and 10)?	X			✓		
2. Was a closing buffer used at the end of analysis?	X			✓		
3. Was the meter checked every 10 samples?			X			✓
Sample Information						
4. Are all samples analyzed within hold time.		X			✓	
QC Items						
5. Was a duplicate sample analyzed?	X			✓		
Raw Data and Miscellaneous Information						
6. Are Non-Conformances documented			X			✓
7. Runlog complete and included in package.	X			✓		
Preliminary Report						
8. Does the raw data match the preliminary report?	X			✓		
9. Are analytical results correct?	X			✓		
10. Is the QC summary report present and complete?	X			✓		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	✓		
2. Matrix / units correct	✓		
3. Does batch meet QC requirements?	✓		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	✓		
5. Is first level review correct and complete?	✓		

1st Level Reviewer: Tricia Ramit Date: 6/9/2017

2nd Level Reviewer: 6/12/2017 Date: —

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Date: 6/8/17 925

Analyst: KSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-170125C	7.02 @19.5°C	SLOPE: 96.1%
Buffer 4	170125B	4.00 @19.6°C	
Buffer 10	170331A	10.04 @19.5°C	

	Sample ID	Matrix	pH	Comments
1	NO24516-001C	H2O	7.56 @16.8°C	7.56
2	1C DUP		7.53 @16.2°C	
3	2C		7.51 @16.4°C	
4				
5				
6				
7				
8				
9			Julia Ramit	6/9/2017
10				
Dup				Accept: 10% water, 20% soil
	Buffer (7), 4, 10 (Circle one)	CIW-170125D	6.98 @19.7°C	Accept: +/-0.1 pH units from expected value

Date: 6/8/17 1125

Analyst: KSR

Standard	Std ID	pH	Comments
Buffer 7	CIW-170125C	7.02 @19.5°C	SLOPE: 96.1%
Buffer 4	170125B	4.00 @19.6°C	
Buffer 10	170331A	10.04 @19.5°C	

	Sample ID	Matrix	pH	Comments
1	NO24502-002A	Soil	7.56 @21.6°C	
2	7A		8.63 @21.9°C	
3	12A		8.21 @21.5°C	
4	12A DUP		8.25 @21.6°C	
5	16A		8.48 @21.5°C	
6	18A		7.97 @21.6°C	
7	21A		7.35 @21.6°C	
8	25A		6.97 @21.5°C	
9	29A		7.56 @21.4°C	
10	NO24510-001E		8.36 @21.6°C	
Dup				Accept: 10% water, 20% soil
	Buffer (7), 4, 10 (Circle one)	CIW-170125D	6.95 @24.1°C	Accept: +/-0.1 pH units from expected value

Logbook #11

SM 2540C

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62476 **Analyst:** LSR

ASSET #: N024516 **Date Analyzed:** 6/8/2017

Method: EPA 160.1

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. ~~MS/MSD~~, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Silvia Ramit Date: 6/12/2017

2nd Level Reviewer: Mary 6/12/2017 Date: —

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 2540C
TEST NAME: Total Filterable Residue
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate TDS concentration in mg/L, in the original sample as follows:

$$\text{TDS, mg/L} = \frac{(A-B)*1000000}{C}$$

Where:

A = weight in g of dish + residue after drying
B = weight of dish in g
C = volume of sample used in mL

For **N024516-001C,** TDS concentration in mg/L is calculated as follows:

$$\text{TDS, mg/L} = \frac{(62.5505–62.4715)*1000000}{30}$$
$$= 2633.3333 \text{ mg/L}$$

Reporting result in two significant figures,

TDS = 2600 mg/L

Sujita Ramit 6/12/2017

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2017 1:07:32 P**
Prep End Date: **6/9/2017 10:20:00 A**

Reviewed/ Date: 6/12/2017

Initials/ Date: Lilia Ramit 6/12/2017

Prep Batch **62476** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units: **mL / mL**

Temp. (°C): **180**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62476	Water		100	☐	0	0	100	1.000		
MB-62476	Water		100	☐	0	0	100	1.000		
N024516-001C	Groundwater		30	☐	0	0	100	3.333		
N024516-002C	Groundwater		20	☐	0	0	100	5.000		
N024516-002C-DU	Groundwater		20	☐	0	0	100	5.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8944	Glass Fiber Filter, 47mm

Spk ID	Spike Name	SampType	AmtAdd
IWST170516A	1000 ppm NaCl	LCS	100

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2017 1:07:32 P**
Prep End Date:

Reviewed/ Date: _____
Initials/ Date: Lilia Ramit 6/12/2017

Prep Batch **62476** Prep Code: **160.1_W_PRE** Technician: **Lilia Ramit**

Prep Factor Units
mL / mL

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62476	Water	IWST17 059L A	100	☐	0	0	100	1.000		
MB-62476	Water		100	☐	0	0	100	1.000		
N024516-001C	Groundwater	4462	100	☐	0	0	100	1.000		
N024516-002C	Groundwater	7750	100	☐	0	0	100	1.000		
N024516-002C-DU	Groundwater	1	100	☐	0	0	100	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

30/44

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SOLIDS RAW DATA

TEST :TSS/TDS/TS

Date	Sample ID	Sample Vol. (ml)	Crucible + Filter (TSS) Crucible (TDS, TS) Tare Wt.(g)	Crucible + Filter+Sample (TSS) Crucible + Sample (TDS, TS) Tare Wt.(g)	Comments
6/8/17 B	MB 62476	100	63.3139 63.3132	63.3136 63.3134	
4	LCS 624	100	62.3626 62.3639	62.4605 62.4607	
1K	M024576-001C	30	62.4712 62.4715	62.5501 62.5505	
1B	2C	20	59.5921 59.5924	59.6809 59.6812	
1C	2C DUP	20	60.3352 60.3358	60.4237 60.4238	
Julia Ramit	6/12/2017				

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3151 W. Post Rd., Las Vegas, NV 89118
ELAP Cert 2676 | NV Cert NV00064
ORELAP/NELAP Cert 4046

TOTAL DISSOLVED SOLIDS, TDS

TDS, mg/L = (A-B) X 10000*PF

where:
A = weight in grams of dish + residue after drying
B = weight of dish in grams
PF = 100/volume of sample used in mL

Date Finished:	vol of sample (mL)	weight of dish in grams (B)	weight in grams of dish + residue after drying (A)	(A-B)*10000	prep fact (PF)	TDS, mg/L	CONDUCTIVITY	RATIO	Sample Type
6/9/2017									
MB-62476	100	63.3132	63.3134	2	1	2			MBLK
LCS-62476	100	62.3639	62.4607	968	1	968			LCS
N024516-001C	30	62.4715	62.5505	790	3.33333333	2633.33333	4460	0.590	SAMP
N024516-002C	20	59.5924	59.6812	888	5	4440	7750	0.573	SAMP
N024516-002CDUP	20	60.3358	60.4238	880	5	4400	7750	0.568	DUP

Silvia Ramit 6/12/2017

EPA 218.6

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115654
ASSET #: N024516

Instrument ID: IC-07
Analyst: RBA
Date Analyzed: 6/8/2017

Method:

- [ ] EPA 300.0
- [ ] EPA 7199
- [X] EPA 218.6/EPA 218.7
- [ ] EPA 218.6/EPA 218.7 LL
- [ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X					
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X					
3. ICV within ± 10% of expected value.	X					
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X					
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X					
6. Calibration blanks run after ICV and CCV?	X					
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)	X					
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X					
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?	X					
Sample Information						
10. All samples are within linear range.	X					
11. All samples pH within 9.3-9.7 when analyzed?	X					
12. Duplicate sample injections for every sample. (7199 only)			X			
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)	X					
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)	X					
19. EPA 3060A digestion performed on solid samples (7199 only)			X			
20. Are all peaks within RT window, ± 0.2 min?	X					
21. Are all samples analyzed within hold time?	X					
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X					
24. LCS compounds are within control limits.	X					
25. MS/MSD, RPD's are within control limits.	X					
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X					
28. Extraction log complete and included in package (if applicable)			X			
29. All manual integrations initialed, date and reasons included.	X					
30. Before and after manual integration chromatogram included in the package	X					
31. All samples and QC raw data present in package.	X					
Preliminary Report						
32. Does the raw data match the preliminary report?	X					
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
34 Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Is QC present and complete?			
4. Are analytical results correct? (dilutions,calculations)			
5. Is first level review correct and complete?			

1st Level Reviewer rba Date: 6/11/2017

2nd Level Reviewer 6/12/2017 Date: —

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 218.6
TEST NAME: HEXAVALENT CHROMIUM BY IC
MATRIX: Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in µg/L, in the original sample as follows:

$$Cr^{+6}, \mu g/L = A * DF$$

where:

A = µg/L, IC Cr+6 calculated concentration
DF = dilution factor

For Sample **N024516-001A** , the concentration in µg/L is calculated as follows:

$$Cr^{+6}, \mu g/L = 0.0000 * 1$$

$$Cr^{+6}, \mu g/L = 0.00$$

Since PQL is 0.2 µg/L,

Cr^{+6} ,µg/L = ND

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ANALYSIS RUN LOG

INJECTION LOG: 170531A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:37 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:46 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/31/17 8:56 AM	Reported
5	STD1-0.2 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:08 AM	Reported
6	STD2-1.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:19 AM	Reported
7	STD3-5.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:28 AM	Reported
8	STD4-10.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:38 AM	Reported
9	STD5-15.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:47 AM	Reported
10	STD6-20.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:57 AM	Reported
11	ICV	ICV	1	Hexavalent Chromium	05/31/17 10:06 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/31/17 10:16 AM	Reported
13	ICB	ICB	1	Hexavalent Chromium	05/31/17 10:25 AM	Reported
14	MB-H2O	MBLK	1	Hexavalent Chromium	05/31/17 10:35 AM	Reported
15	LCS-H2O	LCS	1	Hexavalent Chromium	05/31/17 10:44 AM	Reported
16	LOD@0.1	SAMP	1	Hexavalent Chromium	05/31/17 10:54 AM	Reported
17	PQL@0.2	SAMP	1	Hexavalent Chromium	05/31/17 11:03 AM	Not Reported
18	PQL@0.2	SAMP	1	Hexavalent Chromium	05/31/17 11:20 AM	Reported
19	CCV-1	CCV1	1	Hexavalent Chromium	05/31/17 11:34 AM	Reported
20	CCB-1	CCB	1	Hexavalent Chromium	05/31/17 11:45 AM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_170531A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**31/May/17 12:18:41**
No. of Injections:	**23**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/31/2017 08:26	Finished	
2	BLANK	2	1000	Unknown		05/31/2017 08:37	Finished	
3	BLANK	3	1000	Unknown		05/31/2017 08:46	Interrupted	
4	iBLANK	3	1000	Unknown		05/31/2017 08:56	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/31/2017 09:08	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/31/2017 09:19	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/31/2017 09:28	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/31/2017 09:38	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/31/2017 09:47	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/31/2017 09:57	Finished	20 ppb, IWST-170330A
11	ICV,ICV,1,	10	1000	Unknown		05/31/2017 10:06	Finished	ICV @5ppb, IWST-170330B
12	PQL@0.2ppb,CCV2,	11	1000	Unknown		05/31/2017 10:16	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	12	1000	Unknown		05/31/2017 10:25	Finished	ICB R170522A
14	MB-H2O,MBLK,1	13	1000	Unknown		05/31/2017 10:35	Finished	MB R170522A
15	LCS-H2O,LCS,1	14	1000	Unknown		05/31/2017 10:44	Finished	LCS, IWST-170330B
16	LOD@0.1,SAMP,1,	15	1000	Unknown		05/31/2017 10:54	Finished	SAMP, 10mL
17	PQL@0.2,SAMP,1,	16	1000	Unknown		05/31/2017 11:03	Finished	SAMP, 10mL
18	PQL@0.2,SAMP,1,	18	1000	Unknown		05/31/2017 11:20	Finished	SAMP, 10mL
19	CCV-1,CCV1,1,	19	1000	Unknown		05/31/2017 11:34	Finished	CCV @10ppb, IWST-170330A
20	CCB-1,CCB,1,	20	1000	Unknown		05/31/2017 11:45	Finished	CCB R170522A
21	SHUTDOWN	21	1000	Unknown		05/31/2017 11:55	Finished	
22	Eluent: R170525A	22	1000	Unknown		n.a.	Finished	Eluent
23	PCR: R170530A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

rba 5/31/2017

INJECTION LOG: 170608A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:37 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:46 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/31/17 8:56 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:08 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:19 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:28 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:38 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:47 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:57 AM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/08/17 8:29 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	06/08/17 8:40 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	06/08/17 8:49 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/08/17 8:59 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	06/08/17 9:08 AM	Reported
16	MB-R115654	MBLK	1	Hexavalent Chromium	06/08/17 9:18 AM	Reported
17	LCS-R115654	LCS	1	Hexavalent Chromium	06/08/17 9:27 AM	Reported
18	N024516-001A	SAMP	1	Hexavalent Chromium	06/08/17 9:39 AM	Not Reported
19	N024518-001A	SAMP	1	Hexavalent Chromium	06/08/17 9:50 AM	Reported
20	N024519-001A	SAMP	1	Hexavalent Chromium	06/08/17 10:00 AM	Reported
21	N024519-002A	SAMP	1	Hexavalent Chromium	06/08/17 10:09 AM	Reported
22	N024519-003A	SAMP	1	Hexavalent Chromium	06/08/17 10:19 AM	Reported
23	N024519-004A	SAMP	1	Hexavalent Chromium	06/08/17 10:28 AM	Reported
24	N024519-005A	SAMP	1	Hexavalent Chromium	06/08/17 10:38 AM	Reported
25	N024520-001A	SAMP	1	Hexavalent Chromium	06/08/17 10:47 AM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	06/08/17 10:57 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	06/08/17 11:06 AM	Reported
28	N024518-001ADUP	DUP	1	Hexavalent Chromium	06/08/17 11:16 AM	Reported
29	N024519-001AMS	MS	1	Hexavalent Chromium	06/08/17 11:25 AM	Reported
30	N024519-001AMSD	MSD	1	Hexavalent Chromium	06/08/17 11:34 AM	Reported
31	N024516-001A	SAMP	1	Hexavalent Chromium	06/08/17 11:44 AM	Reported
32	N024516-001AMS	MS	1	Hexavalent Chromium	06/08/17 11:53 AM	Not Reported
33	N024511-002B	SAMP	1	Hexavalent Chromium	06/08/17 12:13 PM	Reported
34	N024511-003B	SAMP	1	Hexavalent Chromium	06/08/17 12:24 PM	Reported
35	N024511-004B	SAMP	1	Hexavalent Chromium	06/08/17 12:33 PM	Reported
36	N024516-001AMS	MS	1	Hexavalent Chromium	06/08/17 12:43 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	06/08/17 12:56 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	06/08/17 1:07 PM	Reported

Injection Log Summary

Sequence Details

Name:	**IC-07_170608A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**08/Jun/17 14:09:44**
No. of Injections:	**41**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/31/2017 08:26	Finished	
2	BLANK	2	1000	Unknown		05/31/2017 08:37	Finished	
3	BLANK	3	1000	Unknown		05/31/2017 08:46	Interrupted	
4	iBLANK	3	1000	Unknown		05/31/2017 08:56	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/31/2017 09:08	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/31/2017 09:19	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/31/2017 09:28	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/31/2017 09:38	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/31/2017 09:47	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/31/2017 09:57	Finished	20 ppb, IWST-170330A
11	BLANK	1	1000	Unknown		06/08/2017 08:29	Finished	
12	BLANK	2	1000	Unknown		06/08/2017 08:40	Finished	
13	CCV-1,CCV,1,	3	1000	Unknown		06/08/2017 08:49	Finished	CCV @5ppb, IWST-170330B
14	PQL@0.2ppb,CCV2,	4	1000	Unknown		06/08/2017 08:59	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1	5	1000	Unknown		06/08/2017 09:08	Finished	CCB R170522A
16	MB-H2O,MBLK,1	6	1000	Unknown		06/08/2017 09:18	Finished	MB R170522A
17	LCS-H2O,LCS,1	7	1000	Unknown		06/08/2017 09:27	Finished	LCS, IWST-170330B
18	N024516-001A,SAMF	9	1000	Unknown		06/08/2017 09:39	Finished	SAMP, 10mL
19	N024518-001A,SAMF	10	1000	Unknown		06/08/2017 09:50	Finished	SAMP, 10mL
20	N024519-001A,SAMF	11	1000	Unknown		06/08/2017 10:00	Finished	SAMP, 10mL
21	N024519-002A,SAMF	12	1000	Unknown		06/08/2017 10:09	Finished	SAMP, 10mL
22	N024519-003A,SAMF	13	1000	Unknown		06/08/2017 10:19	Finished	SAMP, 10mL
23	N024519-004A,SAMF	14	1000	Unknown		06/08/2017 10:28	Finished	SAMP, 10mL
24	N024519-005A,SAMF	15	1000	Unknown		06/08/2017 10:38	Finished	SAMP, 10mL
25	N024520-001A,SAMF	16	1000	Unknown		06/08/2017 10:47	Finished	SAMP, 10mL
26	CCV-2,CCV1,1,	17	1000	Unknown		06/08/2017 10:57	Finished	CCV @10ppb, IWST-170330A
27	CCB-2,CCB,1,	18	1000	Unknown		06/08/2017 11:06	Finished	CCB R170522A
28	N024518-001ADUP,D	19	1000	Unknown		06/08/2017 11:16	Finished	DUP, 10mL
29	N024519-001AMS,MS	20	1000	Unknown		06/08/2017 11:25	Finished	MS (5ppb), IWST-170330B,10
30	N024519-001AMSD,M	21	1000	Unknown		06/08/2017 11:34	Finished	MSD (5ppb), IWST-170330B,1
31	N024516-001A,SAMF	22	1000	Unknown		06/08/2017 11:44	Finished	SAMP, 10mL
32	N024516-001AMS,MS	23	1000	Unknown		06/08/2017 11:53	Finished	MS (1ppb), IWST-170330B,10
33	N024511-002B,SAMF	25	1000	Unknown		06/08/2017 12:13	Finished	SAMP, 10mL
34	N024511-003B,SAMF	26	1000	Unknown		06/08/2017 12:24	Finished	SAMP, 10mL
35	N024511-004B,SAMF	27	1000	Unknown		06/08/2017 12:33	Finished	SAMP, 10mL
36	N024516-001AMS,MS	28	1000	Unknown		06/08/2017 12:43	Finished	MS (1ppb), IWST-170330B,10
37	CCV-3,CCV,1,	30	1000	Unknown		06/08/2017 12:56	Finished	CCV @5ppb, IWST-170330A
38	CCB-3,CCB,1,	31	1000	Unknown		06/08/2017 13:07	Finished	CCB R170522A
39	SHUTDOWN	33	1000	Unknown		06/08/2017 13:41	Finished	
40	Eluent: R170605A	33	1000	Unknown		n.a.	Finished	Eluent
41	PCR: R170605B	34	1000	Unknown		n.a.	Finished	Post-Column Reagent

SAMPLE PREPARATION LOG

Sample Preparation

Date Prepared: 6/7/17
Time Prepared: 0853H
Prepared By: RBA

slope: 95.0%
pH 4: 3.97 @ 19.2°C
7: 7.02 @ 19.2°C
10: 10.05 @ 19.1°C
LCS: 6.96 @ 19.2°C

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-161228C
NH4OH + NH4SO4 eluent: R170605A
NH4OH + NH4SO4 buffer: R170522A

CN Naval: R170305A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024497-001B	9.41	-	~250 ml	~250 ml		R170522A
2)	2B	9.42	-				
3)	3B	9.35	-				
4)	N024498-1A	9.24	9.41			+3 dps CN Naval	
5)	2A	8.75	9.55			+9 " "	
6)	3A	9.53	-				
7)	4A	9.58	-				
8)	N024499-1B	9.62	-				
9)	2C	9.64	-				
10)							
11)							
12)							
13)							
14)							
15)							

Sample Preparation

Date Prepared: 6/8/17
Time Prepared: 0900H
Prepared By: MA

slope: 96.1%
pH 4: 4.00 @ 19.6°C
7: 7.02 @ 19.5°C
10: 10.04 @ 19.5°C
LCS: 6.98 @ 20.2°C

Reagent ID:
Sulfuric Acid: 8993
Diphenylcarbazide: CINV-161228C
NH4OH + NH4SO4 eluent: M170605A
NH4OH + NH4SO4 buffer: R170522A

CN Naval: R170305A

	Sample ID.	pH of sample	pH after treatment	Initial Volume of sample	Final Volume after buffer add'n	Volume of buffer added	Comments
1)	N024516-001A	9.04	9.43	~250 ml	~250 ml	+4 dps CN Naval	R170522A
2)	N024518-001A	9.33	-				
3)	N024519-001A	9.37	-				
4)	2A	9.46	-				
5)	3A	9.43	-				
6)	4A	9.58	-				
7)	5A	9.68	-				
8)	N024520-1A	9.36	-				
9)	N024511-2B	9.48	-				
10)	3B	9.43	-				
11)	4B	9.44	-				
12)							
13)							
14)							
15)							

Logbook No. 12

rba 6/11/2017

INITIAL CALIBRATION DATA SUMMARY

(EPA 218.6) - INITIAL CALIBRATION

Instrument ID: IC-07
Date Calibrated: 5/31/2017

Initial Calibration:

Hexavalent Chromium	STD1	STD2	STD3	STD4	STD5	STD6	
COMPOUND, in ug/L	0.2	1	5	10	15	20	R^2
Area,mAU*min	0.0483	0.2496	1.2847	2.5720	3.8870	5.1689	1.0000

	Stock	Working
Standard Concentration:	1,000,000 PPB	1,000 PPB
Standard ID:	ISST160817H	IWST-170330A

Calibration Acceptance Criteria: > 0.999 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ICV**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **5/31/2017**	SeqNo: **2662306**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.786	0.20	5.000	0	95.7	90	110				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **5/31/2017**	SeqNo: **2662307**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.180	0.20	0.2000	0	90.0	80	120				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **CCV**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662309**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.992	0.20	5.000	0	99.8	95	105				

Sample ID **PQL@0.2ppb**	SampType: **CCV2**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	0.190	0.20	0.2000	0	95.0	80	120				

Sample ID **CCV-2**	SampType: **CCV1**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ZZZZZZ**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	9.900	0.20	10.00	0	99.0	95	105				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **CCV-3**	SampType: **CCV**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **CCV**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662331**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	4.868	0.20	5.000	0	97.4	95	105				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 218.6_WPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **ICB**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **5/31/2017**	SeqNo: **2662308**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **CCB**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **CCB**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662322**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Sample ID **CCB-3**	SampType: **CCB**	TestCode: **218.6_WPGE**	Units: **µg/L**	Prep Date:	RunNo: **115654**
Client ID: **CCB**	Batch ID: **R115654**	TestNo: **EPA 218.6**		Analysis Date: **6/8/2017**	SeqNo: **2662332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Hexavalent Chromium	ND	0.20									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-07

Analytical Sequence

Date Analyzed: 6/8/2017

Sample Name	Retention Time	Evaluation
CCV-1	4.698	
CCV-2	4.698	
CCV-3	4.698	
Average	4.698	
Actual RT Window	4.618 - 4.778	
Applied RT Window	4.498 - 4.898	
MB-R115654	N.A.	N.A.
LCS-R115654	4.698	PASS
N024516-001A	4.681	PASS
N024518-001A	4.690	PASS
N024519-001A	4.681	PASS
N024519-002A	4.690	PASS
N024519-003A	4.715	PASS
N024519-004A	4.690	PASS
N024519-005A	N.A.	N.A.
N024520-001A	4.673	PASS
N024518-001ADUP	4.690	PASS
N024519-001AMS	4.673	PASS
N024519-001AMSD	4.673	PASS
N024516-001A	N.A.	N.A.
N024516-001AMS	4.631	PASS
N024511-002B	4.681	PASS
N024511-003B	4.690	PASS
N024511-004B	4.690	PASS
N024516-001AMS	4.631	PASS

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography** Matrix: **WATER**
Method Number: EPA 218.6/EPA 7199 Unit: ug/L
Analysis Date(s): 2/12/2016, 2/23/2016, 2/24/2016, 2/25/2016, 3/7/2016, 3/9/2016 & 3/11/2016
Analyst: Ryan Balilu, Jannette Soria

Instrument Name: **IC-06** **Acceptance Criteria:** MDL < spike < 10X MDL

Datafile:	160212	160223	160224	160225	160307	160309	160311						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.2195	0.2048	0.2167	0.1675	0.2194	0.1811	0.1826	0.20	0.0215	3.143	**0.0675**	**0.20**	OK,meets criteria

04/11/16

Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

METHOD DETECTION LIMIT 2016

Method Name: **HEXAVALENT CHROMIUM by Ion Chromatography**
Method Number: EPA 218.6/EPA 7199
Analysis Date(s): 3/16/2016; 3/18/2016; 3/21/2016, 3/22/2016, 3/25/2016 & 3/30/2016
Analyst: Jannette Soria

Matrix: **WATER**
Unit: ug/L

Instrument Name: **IC-07**

Acceptance Criteria: MDL < spike < 10X MDL

Datafile:	160316	160318	160321	160322	160323	160325	160330						
Analyte	**#1**	**#2**	**#3**	**#4**	**#5**	**#6**	**#7**	**Spike Conc., mg/L**	**SD**	**$t_{(n-1)}$ value**	**MDL**	**PQL**	**Remarks**
ICAL:													
Hexavalent Chromiu	0.1906	0.2326	0.2339	0.2002	0.2394	0.2147	0.1920	0.20	0.0208	3.143	**0.0655**	**0.20**	OK,meets criteria



Students' **t** Values at 99% CL

#	$t_{(n-1)}$
10	2.821
9	2.896
8	2.998
7	3.143

LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Hexavalent Chromium by IC** Matrix: **WATER**
Method Number: EPA Method 218.6/7199 Unit: µg/L
Analysis Date(s): 12/5/2016
Analyst: Ria Abes

Instrument Name: **IC-07**

Compound	MDL	LOD Spike Conc., µg/L	LOD actual Conc., µg/L
Hexavalent Chromium	0.066	0.15	0.147

Compound	PQL	PQL Spike Conc., µg/L	PQL actual Conc., µg/L	% Recovery
Hexavalent Chromium	0.20	0.20	0.209	**105**

RAW DATA

INITIAL CALIBRATION

INJECTION LOG: 170531A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:37 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:46 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/31/17 8:56 AM	Reported
5	STD1-0.2 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:08 AM	Reported
6	STD2-1.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:19 AM	Reported
7	STD3-5.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:28 AM	Reported
8	STD4-10.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:38 AM	Reported
9	STD5-15.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:47 AM	Reported
10	STD6-20.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:57 AM	Reported
11	ICV	ICV	1	Hexavalent Chromium	05/31/17 10:06 AM	Reported
12	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	05/31/17 10:16 AM	Reported
13	ICB	ICB	1	Hexavalent Chromium	05/31/17 10:25 AM	Reported
14	MB-H2O	MBLK	1	Hexavalent Chromium	05/31/17 10:35 AM	Reported
15	LCS-H2O	LCS	1	Hexavalent Chromium	05/31/17 10:44 AM	Reported
16	LOD@0.1	SAMP	1	Hexavalent Chromium	05/31/17 10:54 AM	Reported
17	PQL@0.2	SAMP	1	Hexavalent Chromium	05/31/17 11:03 AM	Not Reported
18	PQL@0.2	SAMP	1	Hexavalent Chromium	05/31/17 11:20 AM	Reported
19	CCV-1	CCV1	1	Hexavalent Chromium	05/31/17 11:34 AM	Reported
20	CCB-1	CCB	1	Hexavalent Chromium	05/31/17 11:45 AM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_170531A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**31/May/17 12:18:41**
No. of Injections:	**23**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/31/2017 08:26	Finished	
2	BLANK	2	1000	Unknown		05/31/2017 08:37	Finished	
3	BLANK	3	1000	Unknown		05/31/2017 08:46	Interrupted	
4	iBLANK	3	1000	Unknown		05/31/2017 08:56	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/31/2017 09:08	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/31/2017 09:19	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/31/2017 09:28	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/31/2017 09:38	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/31/2017 09:47	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/31/2017 09:57	Finished	20 ppb, IWST-170330A
11	ICV,ICV,1,	10	1000	Unknown		05/31/2017 10:06	Finished	ICV @5ppb, IWST-170330B
12	PQL@0.2ppb,CCV2,1	11	1000	Unknown		05/31/2017 10:16	Finished	PQL @ 0.2ppb
13	ICB,ICB,1,	12	1000	Unknown		05/31/2017 10:25	Finished	ICB R170522A
14	MB-H2O,MBLK,1	13	1000	Unknown		05/31/2017 10:35	Finished	MB R170522A
15	LCS-H2O,LCS,1	14	1000	Unknown		05/31/2017 10:44	Finished	LCS, IWST-170330B
16	LOD@0.1,SAMP,1,	15	1000	Unknown		05/31/2017 10:54	Finished	SAMP, 10mL
17	PQL@0.2,SAMP,1,	16	1000	Unknown		05/31/2017 11:03	Finished	SAMP, 10mL
18	PQL@0.2,SAMP,1,	18	1000	Unknown		05/31/2017 11:20	Finished	SAMP, 10mL
19	CCV-1,CCV1,1,	19	1000	Unknown		05/31/2017 11:34	Finished	CCV @10ppb, IWST-170330A
20	CCB-1,CCB,1,	20	1000	Unknown		05/31/2017 11:45	Finished	CCB R170522A
21	SHUTDOWN	21	1000	Unknown		05/31/2017 11:55	Finished	
22	Eluent: R170525A	22	1000	Unknown		n.a.	Finished	Eluent
23	PCR: R170530A	23	1000	Unknown		n.a.	Finished	Post-Column Reagent

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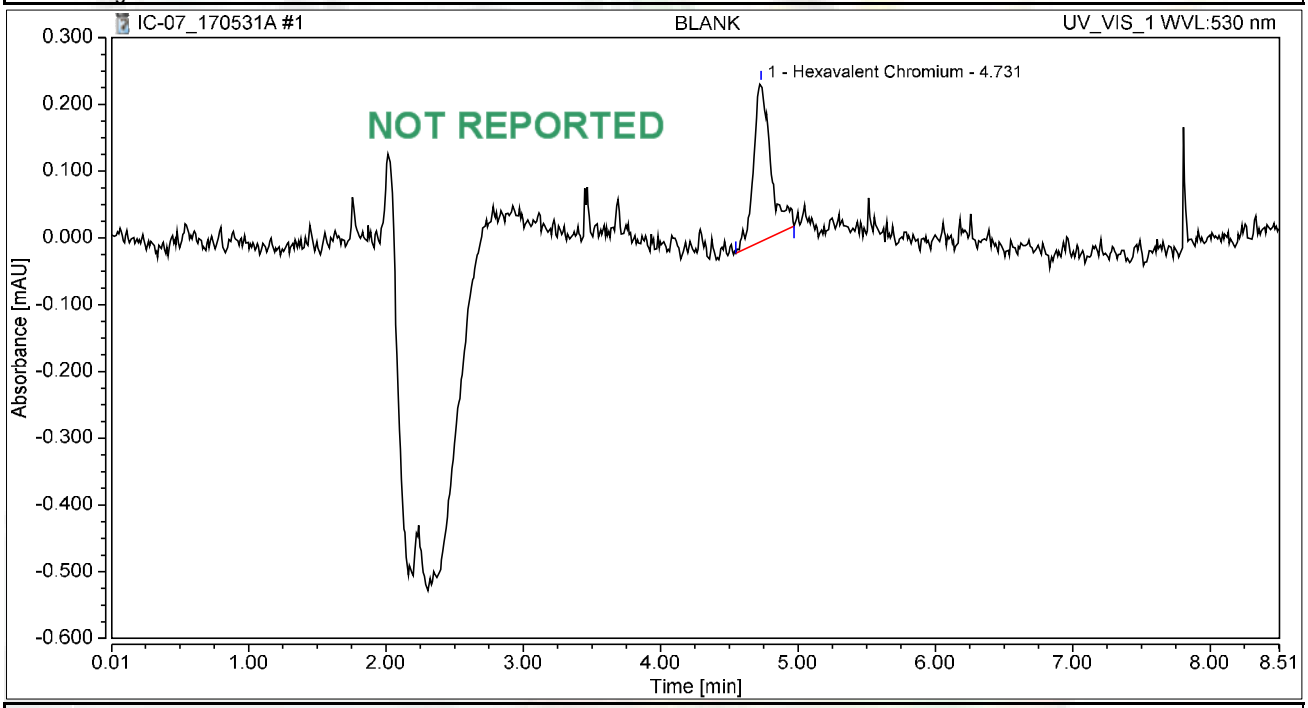
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 08:26**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

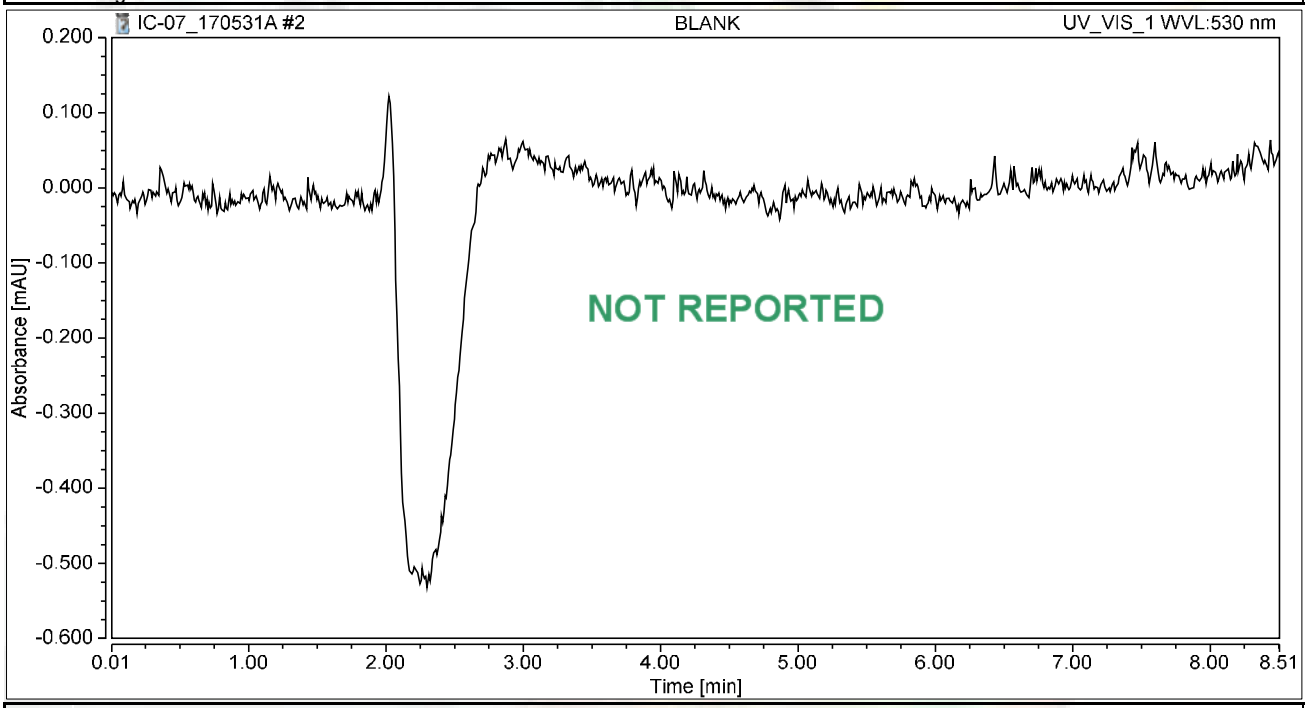
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.731	0.035	0.238	100.00	100.00	0.1346
Total:			**0.035**	**0.238**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 08:37**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

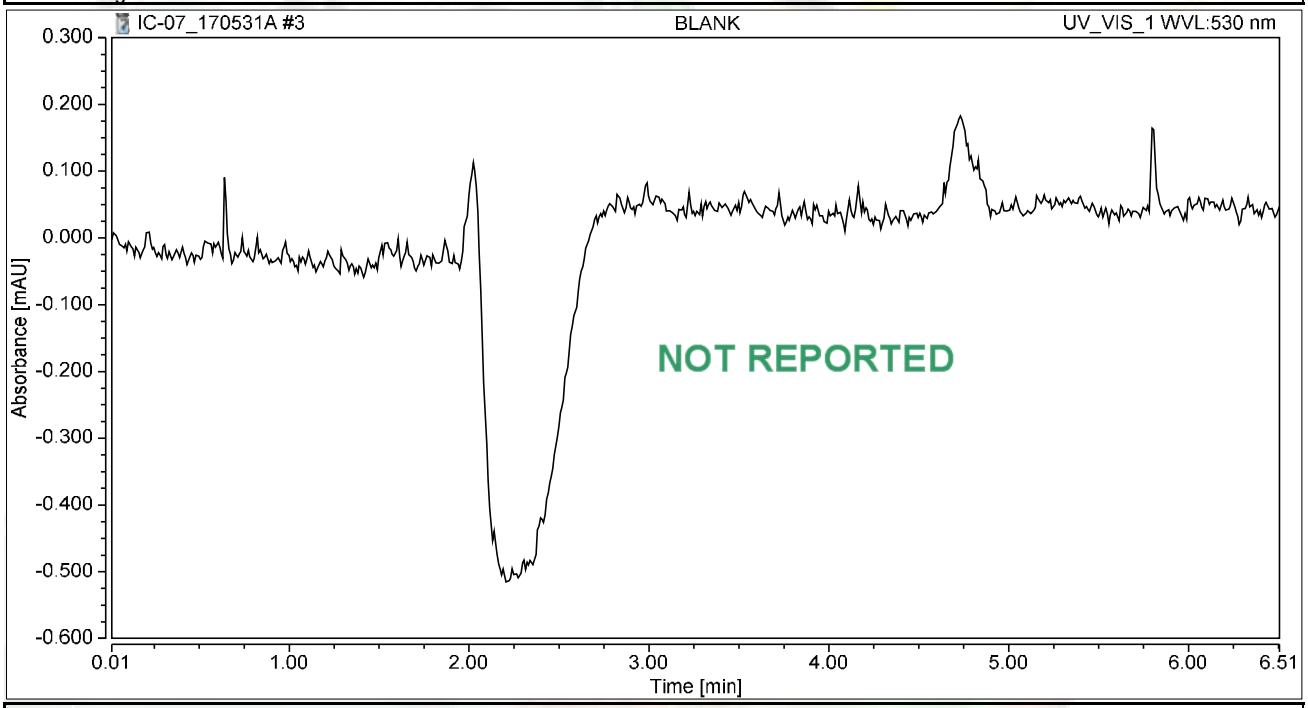
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**6.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 08:46**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

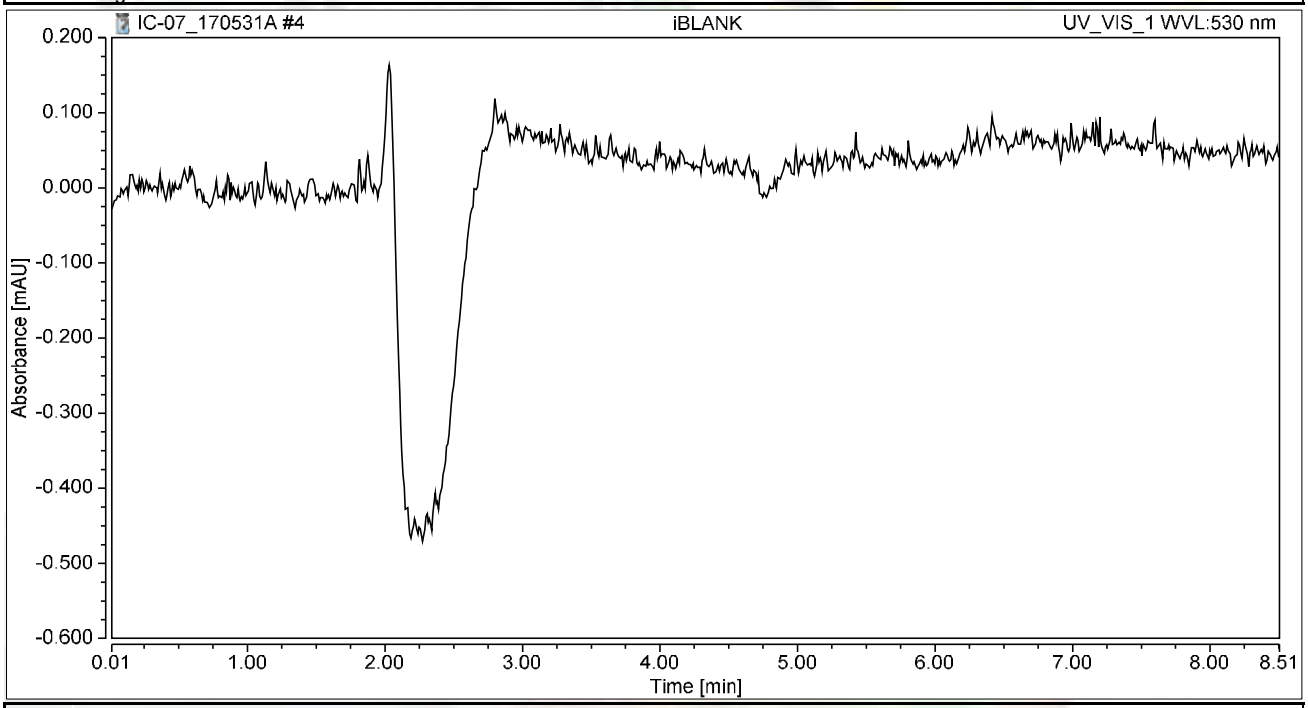
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**iBLANK**	*Run Time (min):*	**8.49**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 08:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

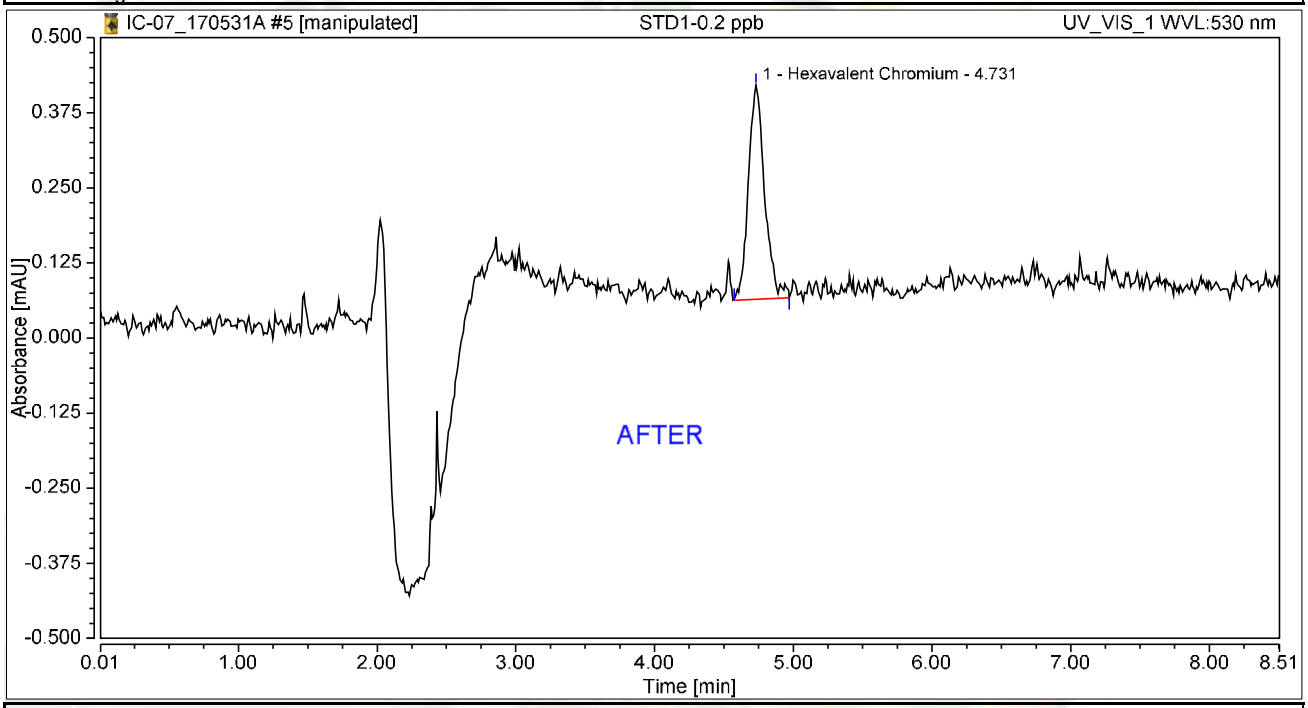
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.731	0.048	0.356	100.00	100.00	0.1869
Total:			**0.048**	**0.356**	**100.00**	**100.00**	

rba 5/31/2017

Reviewed by: Nancy 6/8/2017

My First Report Integration

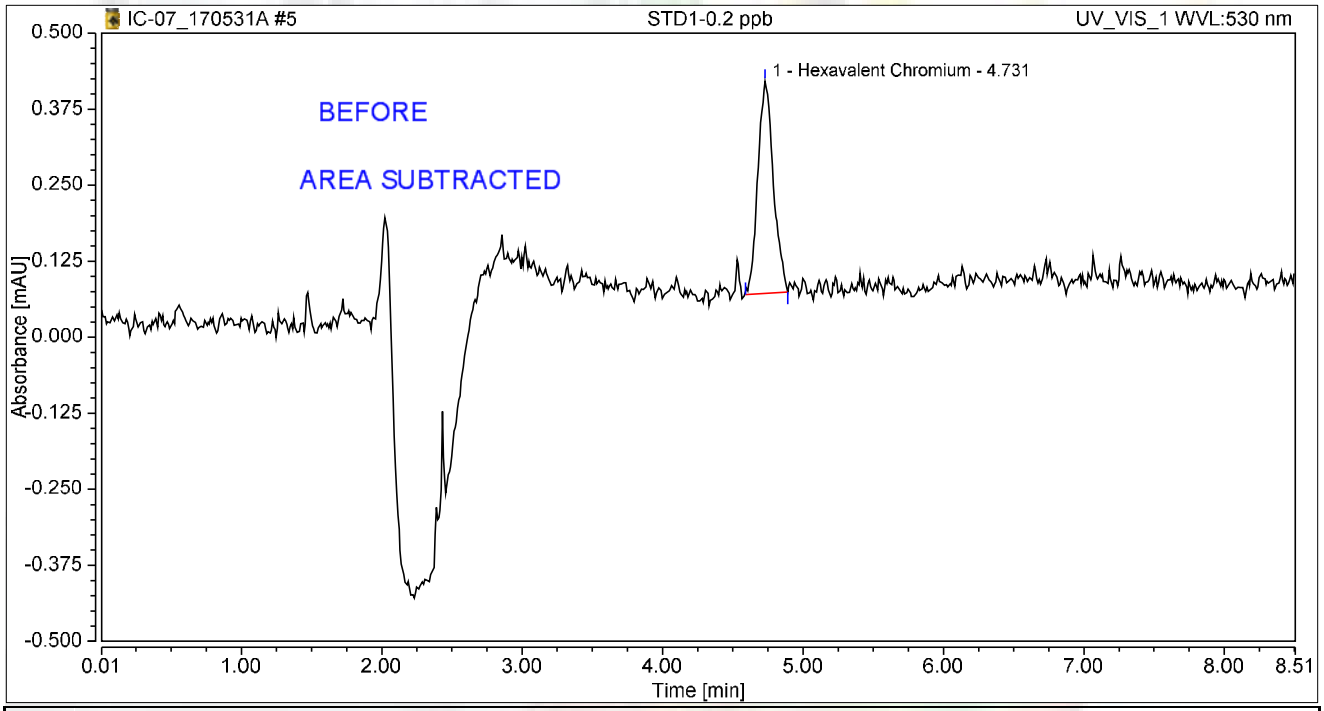
Chromeleon (c) Dionex Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**STD1-0.2 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**01**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.731	0.045	0.349	100.00	100.00	0.1726
Total:			**0.045**	**0.349**	**100.00**	**100.00**	

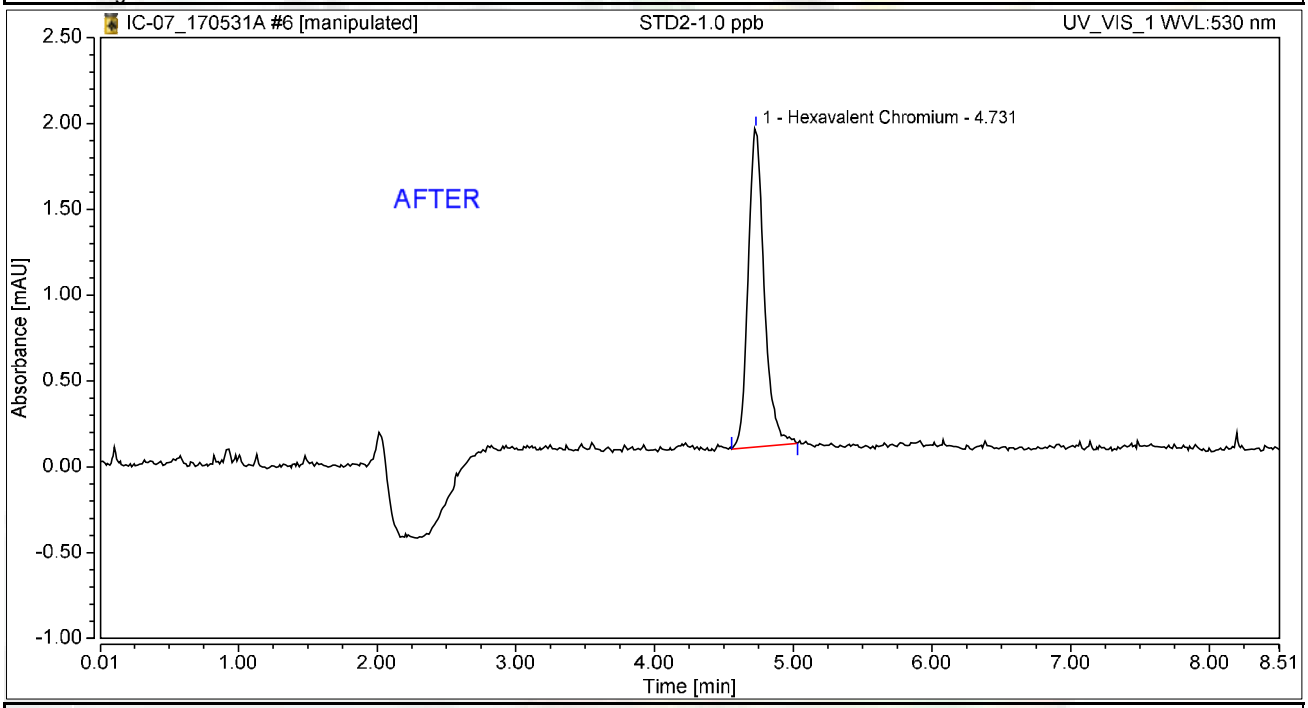
rba 5/31/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 09:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.731	0.250	1.854	100.00	100.00	0.9657
Total:			**0.250**	**1.854**	**100.00**	**100.00**	

rba 5/31/2017

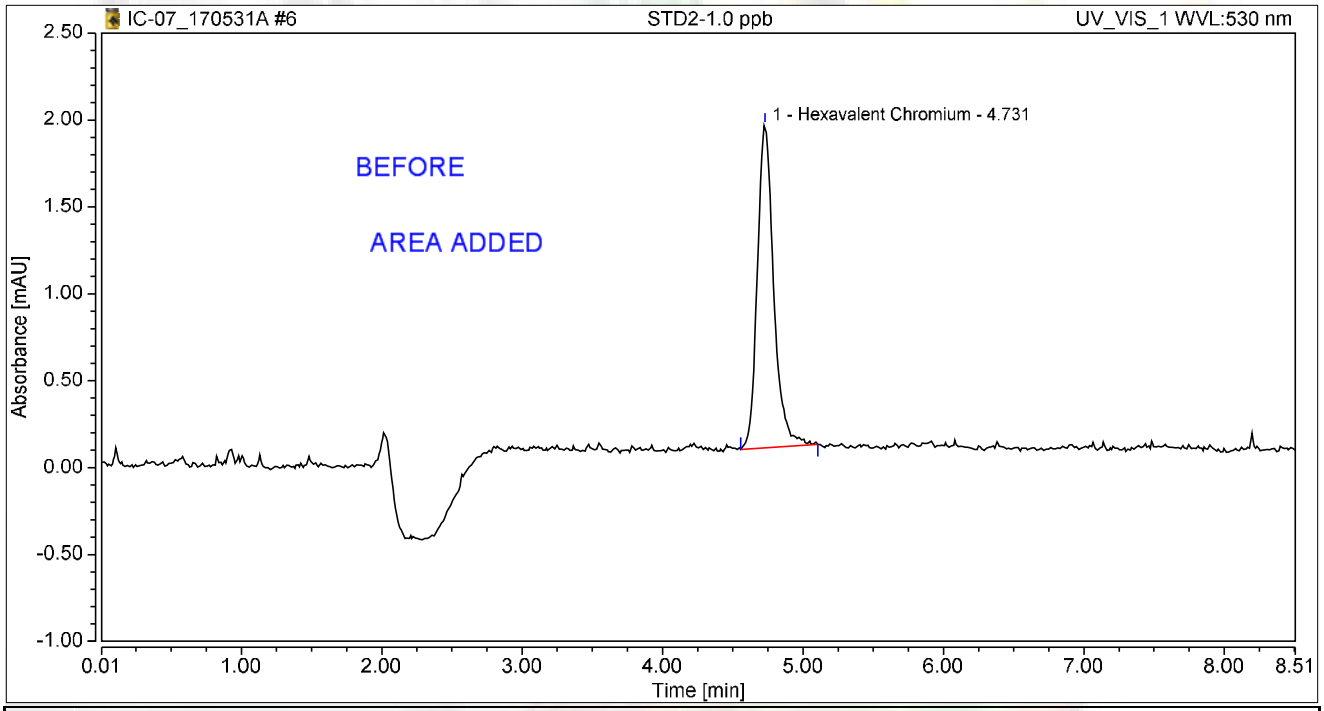
Reviewed by: 6/8/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD2-1.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**02**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 09:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.731	0.252	1.856	100.00	100.00	0.9741
Total:			**0.252**	**1.856**	**100.00**	**100.00**	

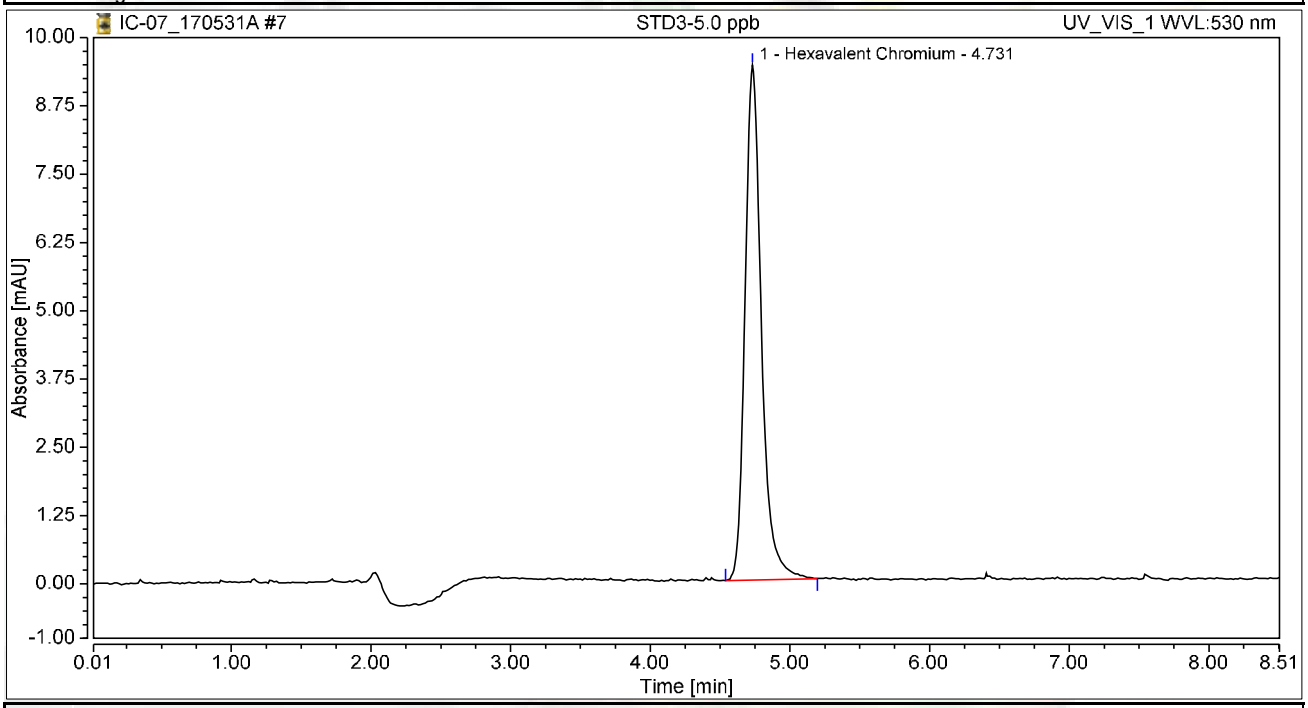
rba 5/31/2017

Chromatogram and Results

Injection Details

Injection Name:	**STD3-5.0 ppb**	*Run Time (min):*	**8.49**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**03**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 09:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

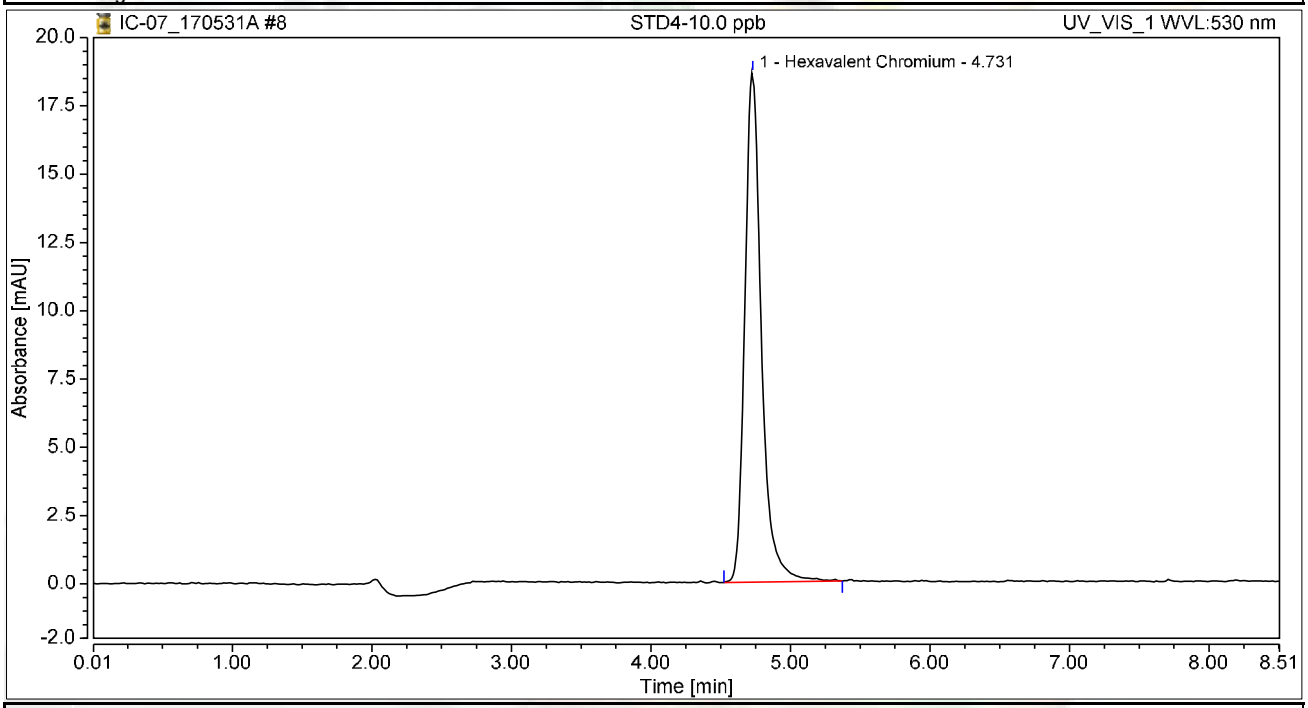
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.731	1.285	9.427	100.00	100.00	4.9711
Total:			**1.285**	**9.427**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD4-10.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**04**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 09:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

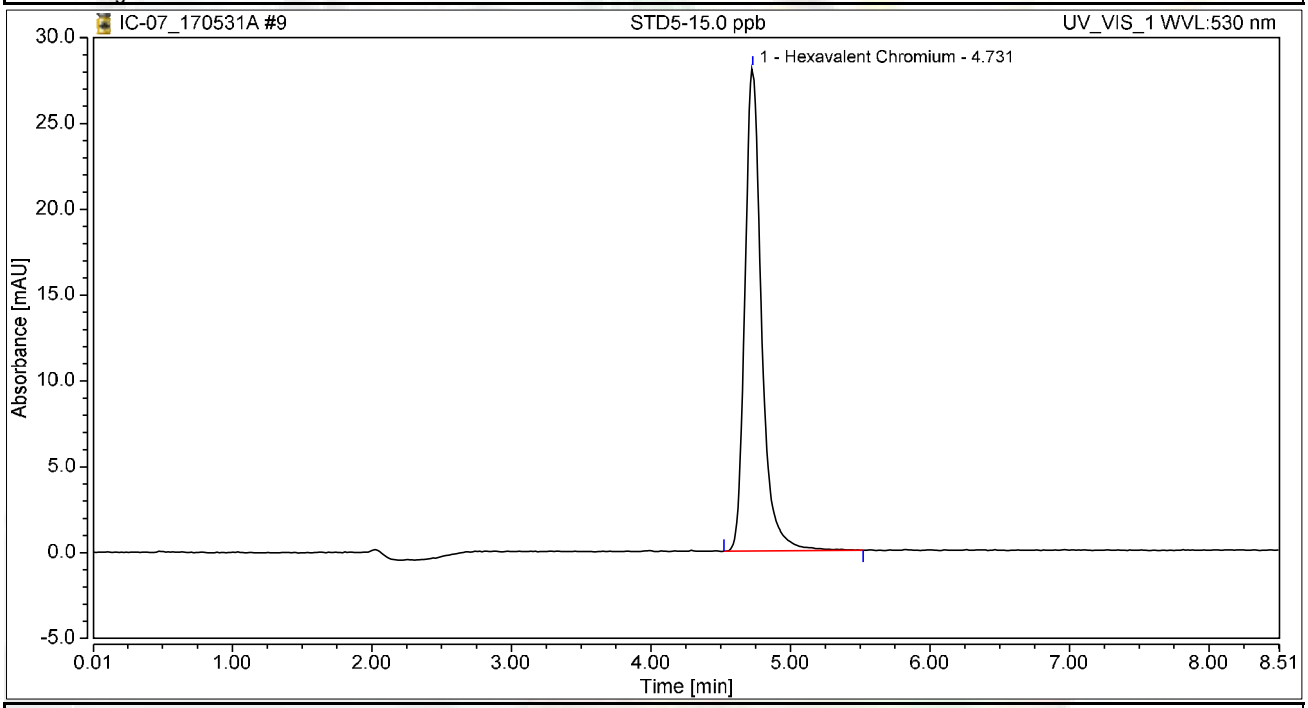
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.731	2.572	18.645	100.00	100.00	9.9527
Total:			**2.572**	**18.645**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD5-15.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**8**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**05**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 09:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

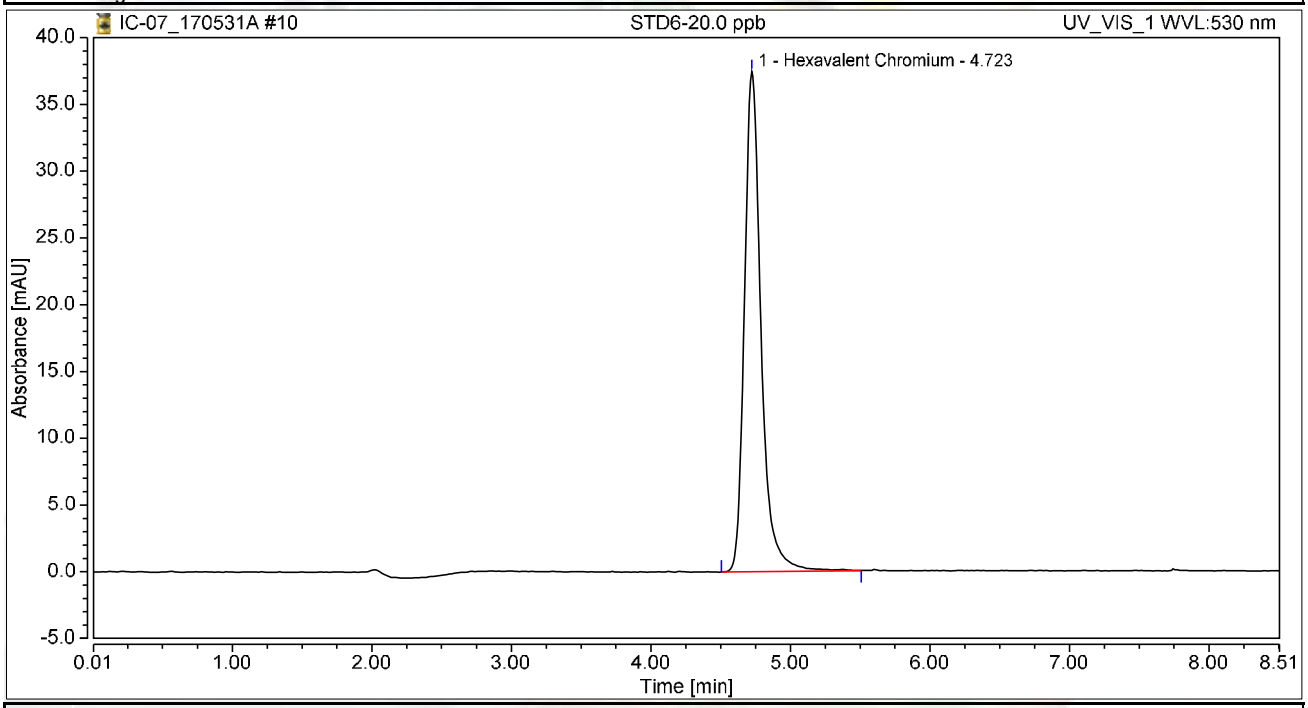
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.731	3.887	28.127	100.00	100.00	15.0412
Total:			**3.887**	**28.127**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**STD6-20.0 ppb**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Calibration Standard**	*Channel:*	**UV_VIS_1**
Calibration Level:	**06**	*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 09:57**	*Sample Weight:*	**1.0000**

Chromatogram



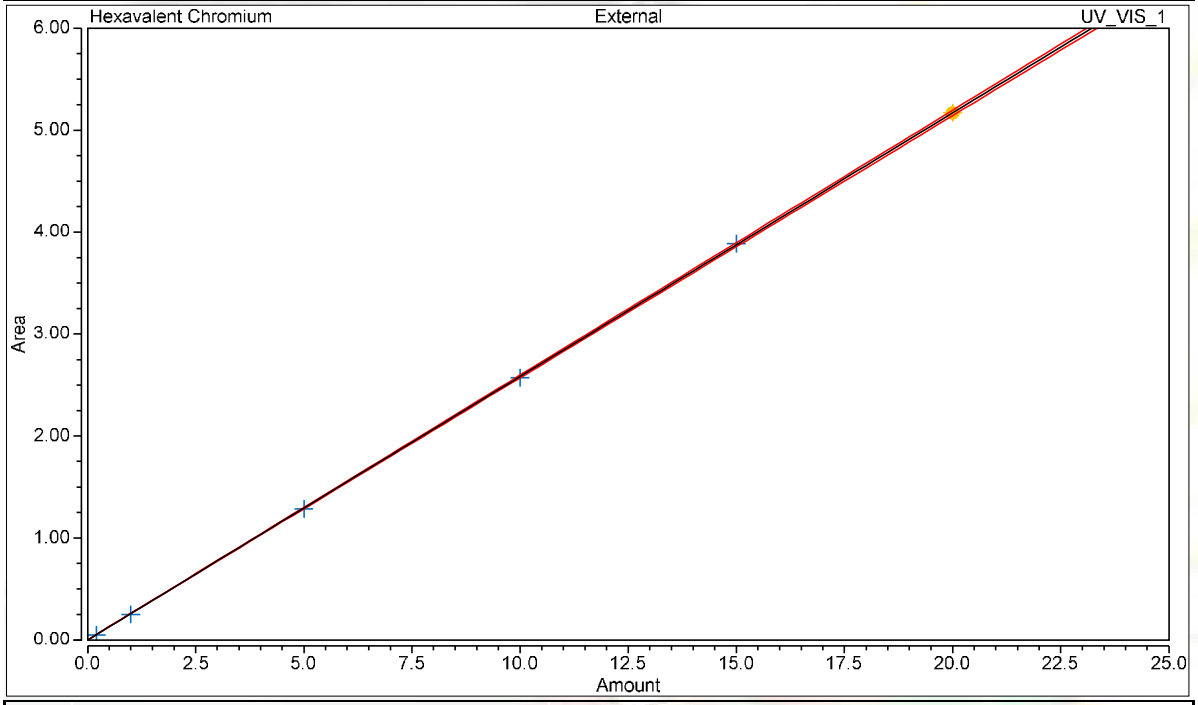
Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.723	5.169	37.471	100.00	100.00	20.0018
Total:			**5.169**	**37.471**	**100.00**	**100.00**	

Initial Calibration Summary

Calibration Details	Hexavalent Chromium		
Calibration Type	Lin	*Offset (C0)*	0.0000
Evaluation Type	Area	*Slope (C1)*	0.2584
Number of Calibration Points	6	*Curve (C2)*	0.0000
Number of disabled Calibration Points	0	*R-Square*	0.99998

Calibration Plot Hexavalent Chromium



Calibration Results Hexavalent Chromium

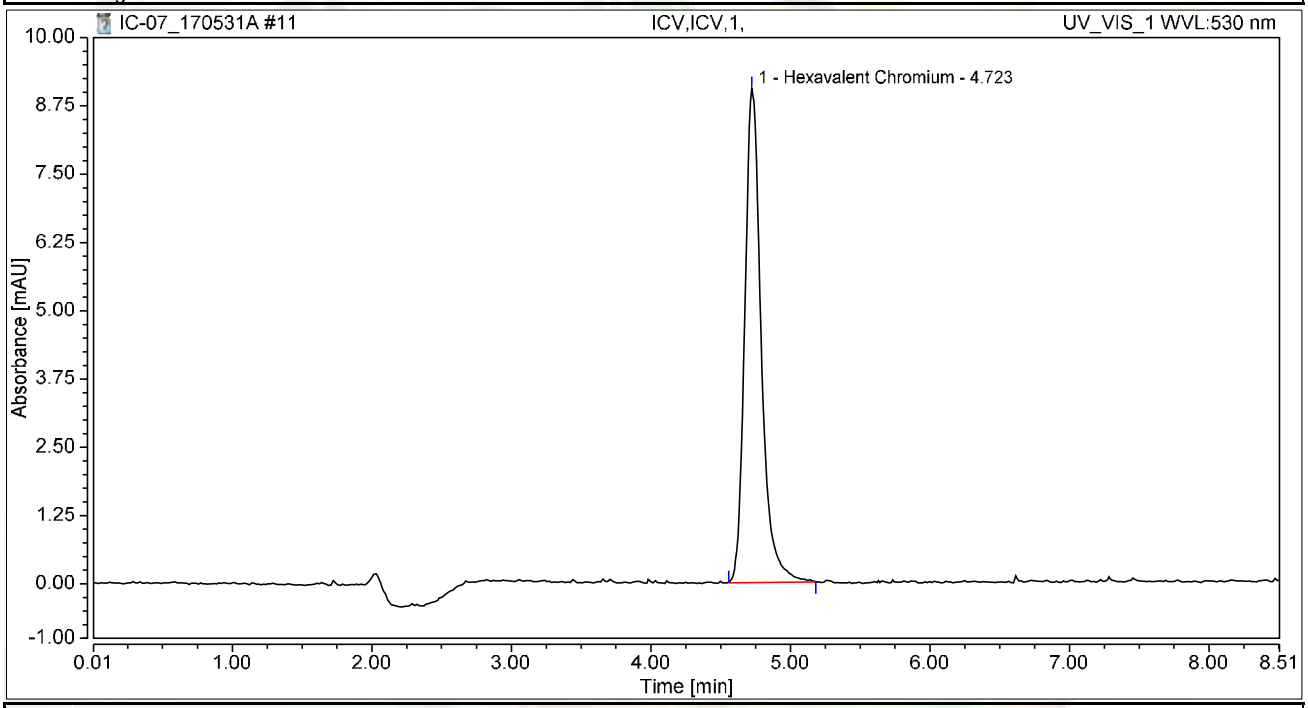
No.	Injection Name	Calibration Level	X Value	Y Value	Area mAU*min	Height mAU
5	STD1-0.2 ppb	01	0.2000	0.0483	0.048	0.356
6	STD2-1.0 ppb	02	1.0000	0.2496	0.250	1.854
7	STD3-5.0 ppb	03	5.0000	1.2847	1.285	9.427
8	STD4-10.0 ppb	04	10.0000	2.5720	2.572	18.645
9	STD5-15.0 ppb	05	15.0000	3.8870	3.887	28.127
10	STD6-20.0 ppb	06	20.0000	5.1689	5.169	37.471

Chromatogram and Results

Injection Details

Injection Name:	**ICV,ICV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 10:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

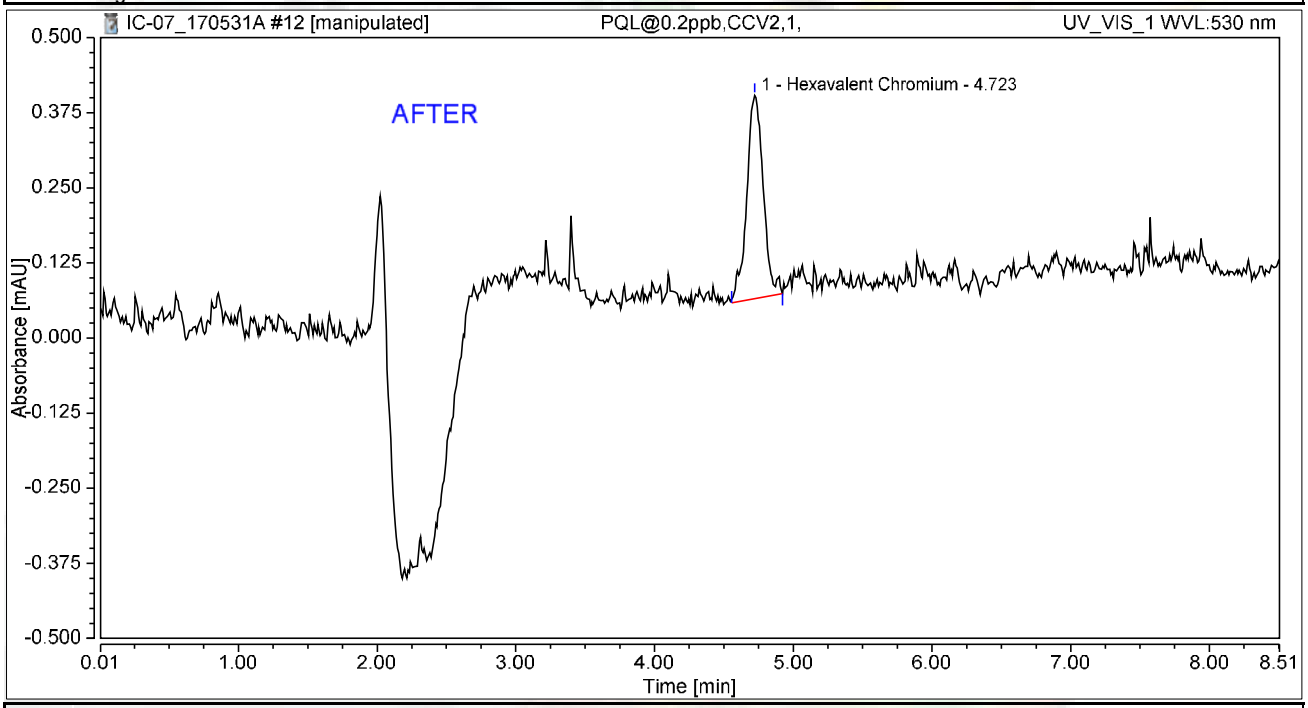
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.723	1.237	9.045	100.00	100.00	4.7857
Total:			**1.237**	**9.045**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.723	0.047	0.338	100.00	100.00	0.1800
Total:			**0.047**	**0.338**	**100.00**	**100.00**	

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Reviewed by Nancy 6/8/2017

My Post report/Integration

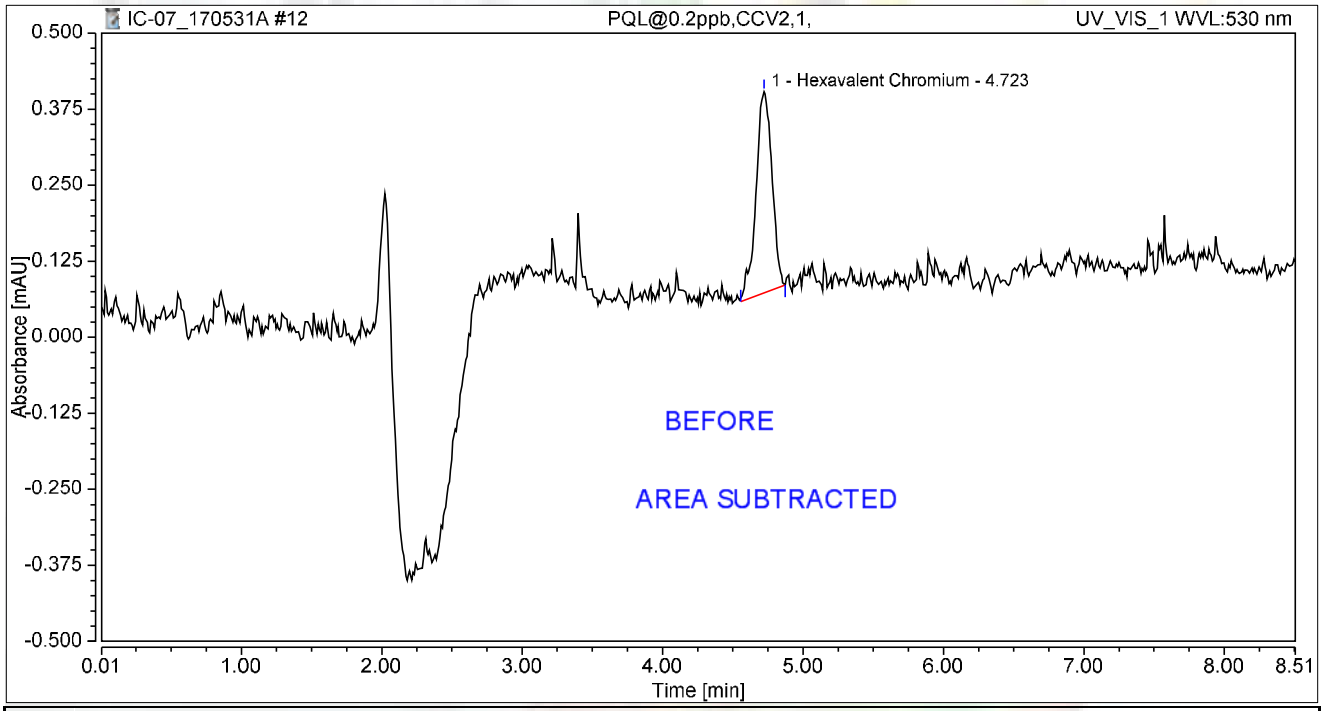
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 10:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.723	0.043	0.331	100.00	100.00	0.1683
Total:			**0.043**	**0.331**	**100.00**	**100.00**	

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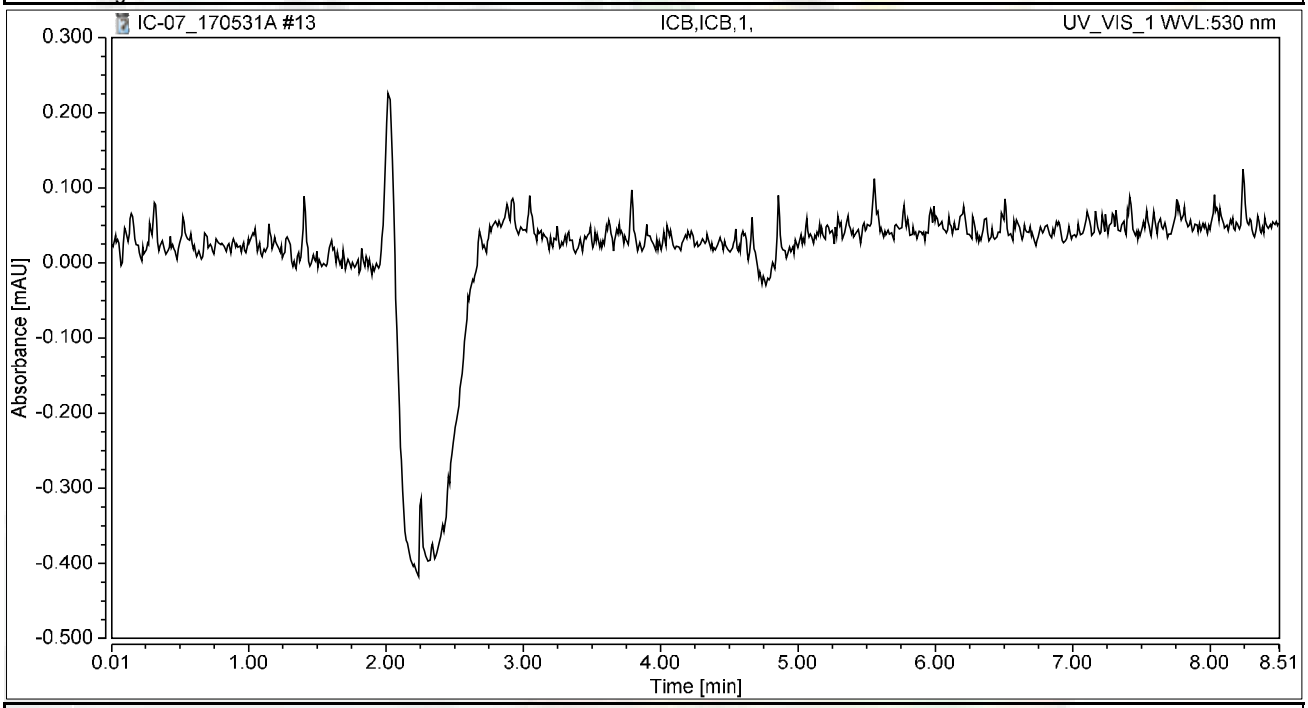
Chromatogram and Results

Injection Details

Injection Name:	**ICB,ICB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**31/May/17 10:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

RAW DATA

INJECTION LOG: 170608A

Instrument ID: IC-07

Sample No	Sample Name	Type	DF	Peak Name	Injection Date/Time	Comments
1	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:26 AM	Not Reported
2	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:37 AM	Not Reported
3	BLANK	BLANK	1	Hexavalent Chromium	05/31/17 8:46 AM	Not Reported
4	iBLANK	iBLANK	1	Hexavalent Chromium	05/31/17 8:56 AM	Reported
5	STD-0.2 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:08 AM	Reported
6	STD-1.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:19 AM	Reported
7	STD-5.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:28 AM	Reported
8	STD-10.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:38 AM	Reported
9	STD-15.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:47 AM	Reported
10	STD-20.0 ppb	ICAL	1	Hexavalent Chromium	05/31/17 9:57 AM	Reported
11	BLANK	BLANK	1	Hexavalent Chromium	06/08/17 8:29 AM	Not Reported
12	BLANK	BLANK	1	Hexavalent Chromium	06/08/17 8:40 AM	Not Reported
13	CCV-1	CCV	1	Hexavalent Chromium	06/08/17 8:49 AM	Reported
14	PQL@0.2ppb	CCV2	1	Hexavalent Chromium	06/08/17 8:59 AM	Reported
15	CCB-1	CCB	1	Hexavalent Chromium	06/08/17 9:08 AM	Reported
16	MB-R115654	MBLK	1	Hexavalent Chromium	06/08/17 9:18 AM	Reported
17	LCS-R115654	LCS	1	Hexavalent Chromium	06/08/17 9:27 AM	Reported
18	N024516-001A	SAMP	1	Hexavalent Chromium	06/08/17 9:39 AM	Not Reported
19	N024518-001A	SAMP	1	Hexavalent Chromium	06/08/17 9:50 AM	Reported
20	N024519-001A	SAMP	1	Hexavalent Chromium	06/08/17 10:00 AM	Reported
21	N024519-002A	SAMP	1	Hexavalent Chromium	06/08/17 10:09 AM	Reported
22	N024519-003A	SAMP	1	Hexavalent Chromium	06/08/17 10:19 AM	Reported
23	N024519-004A	SAMP	1	Hexavalent Chromium	06/08/17 10:28 AM	Reported
24	N024519-005A	SAMP	1	Hexavalent Chromium	06/08/17 10:38 AM	Reported
25	N024520-001A	SAMP	1	Hexavalent Chromium	06/08/17 10:47 AM	Reported
26	CCV-2	CCV1	1	Hexavalent Chromium	06/08/17 10:57 AM	Reported
27	CCB-2	CCB	1	Hexavalent Chromium	06/08/17 11:06 AM	Reported
28	N024518-001ADUP	DUP	1	Hexavalent Chromium	06/08/17 11:16 AM	Reported
29	N024519-001AMS	MS	1	Hexavalent Chromium	06/08/17 11:25 AM	Reported
30	N024519-001AMSD	MSD	1	Hexavalent Chromium	06/08/17 11:34 AM	Reported
31	N024516-001A	SAMP	1	Hexavalent Chromium	06/08/17 11:44 AM	Reported
32	N024516-001AMS	MS	1	Hexavalent Chromium	06/08/17 11:53 AM	Not Reported
33	N024511-002B	SAMP	1	Hexavalent Chromium	06/08/17 12:13 PM	Reported
34	N024511-003B	SAMP	1	Hexavalent Chromium	06/08/17 12:24 PM	Reported
35	N024511-004B	SAMP	1	Hexavalent Chromium	06/08/17 12:33 PM	Reported
36	N024516-001AMS	MS	1	Hexavalent Chromium	06/08/17 12:43 PM	Reported
37	CCV-3	CCV	1	Hexavalent Chromium	06/08/17 12:56 PM	Reported
38	CCB-3	CCB	1	Hexavalent Chromium	06/08/17 1:07 PM	Reported

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Injection Log Summary

Sequence Details

Name:	**IC-07_170608A**	*Created On:*	**24/Jul/12 17:17:21**
Directory:	**Instrument Data\IC-7\2017**	*Created By:*	**ics 5000**
Data Vault:	**ChromeleonLocal2**	*Updated On:*	**08/Jun/17 14:09:44**
No. of Injections:	**41**	*Updated By:*	**ics 5000**

Injection Details

No.	Injection Name	Position	Volume µL	Type	Level	Inject Time	Status	Comment
1	BLANK	1	1000	Unknown		05/31/2017 08:26	Finished	
2	BLANK	2	1000	Unknown		05/31/2017 08:37	Finished	
3	BLANK	3	1000	Unknown		05/31/2017 08:46	Interrupted	
4	iBLANK	3	1000	Unknown		05/31/2017 08:56	Finished	INSTRUMENT BLANK
5	STD1-0.2 ppb	4	1000	Calibration Standard	01	05/31/2017 09:08	Finished	0.2 ppb, IWST-170330A
6	STD2-1.0 ppb	5	1000	Calibration Standard	02	05/31/2017 09:19	Finished	1.0 ppb, IWST-170330A
7	STD3-5.0 ppb	6	1000	Calibration Standard	03	05/31/2017 09:28	Finished	5.0 ppb, IWST-170330A
8	STD4-10.0 ppb	7	1000	Calibration Standard	04	05/31/2017 09:38	Finished	10 ppb, IWST-170330A
9	STD5-15.0 ppb	8	1000	Calibration Standard	05	05/31/2017 09:47	Finished	15 ppb, IWST-170330A
10	STD6-20.0 ppb	9	1000	Calibration Standard	06	05/31/2017 09:57	Finished	20 ppb, IWST-170330A
11	BLANK	1	1000	Unknown		06/08/2017 08:29	Finished	
12	BLANK	2	1000	Unknown		06/08/2017 08:40	Finished	
13	CCV-1,CCV,1,	3	1000	Unknown		06/08/2017 08:49	Finished	CCV @5ppb, IWST-170330B
14	PQL@0.2ppb,CCV2,	4	1000	Unknown		06/08/2017 08:59	Finished	PQL @ 0.2ppb
15	CCB-1,CCB,1	5	1000	Unknown		06/08/2017 09:08	Finished	CCB R170522A
16	MB-H2O,MBLK,1	6	1000	Unknown		06/08/2017 09:18	Finished	MB R170522A
17	LCS-H2O,LCS,1	7	1000	Unknown		06/08/2017 09:27	Finished	LCS, IWST-170330B
18	N024516-001A,SAMF	9	1000	Unknown		06/08/2017 09:39	Finished	SAMP, 10mL
19	N024518-001A,SAMF	10	1000	Unknown		06/08/2017 09:50	Finished	SAMP, 10mL
20	N024519-001A,SAMF	11	1000	Unknown		06/08/2017 10:00	Finished	SAMP, 10mL
21	N024519-002A,SAMF	12	1000	Unknown		06/08/2017 10:09	Finished	SAMP, 10mL
22	N024519-003A,SAMF	13	1000	Unknown		06/08/2017 10:19	Finished	SAMP, 10mL
23	N024519-004A,SAMF	14	1000	Unknown		06/08/2017 10:28	Finished	SAMP, 10mL
24	N024519-005A,SAMF	15	1000	Unknown		06/08/2017 10:38	Finished	SAMP, 10mL
25	N024520-001A,SAMF	16	1000	Unknown		06/08/2017 10:47	Finished	SAMP, 10mL
26	CCV-2,CCV1,1,	17	1000	Unknown		06/08/2017 10:57	Finished	CCV @10ppb, IWST-170330A
27	CCB-2,CCB,1,	18	1000	Unknown		06/08/2017 11:06	Finished	CCB R170522A
28	N024518-001ADUP,D	19	1000	Unknown		06/08/2017 11:16	Finished	DUP, 10mL
29	N024519-001AMS,MS	20	1000	Unknown		06/08/2017 11:25	Finished	MS (5ppb), IWST-170330B,10
30	N024519-001AMSD,M	21	1000	Unknown		06/08/2017 11:34	Finished	MSD (5ppb), IWST-170330B,1
31	N024516-001A,SAMF	22	1000	Unknown		06/08/2017 11:44	Finished	SAMP, 10mL
32	N024516-001AMS,MS	23	1000	Unknown		06/08/2017 11:53	Finished	MS (1ppb), IWST-170330B,10
33	N024511-002B,SAMF	25	1000	Unknown		06/08/2017 12:13	Finished	SAMP, 10mL
34	N024511-003B,SAMF	26	1000	Unknown		06/08/2017 12:24	Finished	SAMP, 10mL
35	N024511-004B,SAMF	27	1000	Unknown		06/08/2017 12:33	Finished	SAMP, 10mL
36	N024516-001AMS,MS	28	1000	Unknown		06/08/2017 12:43	Finished	MS (1ppb), IWST-170330B,10
37	CCV-3,CCV,1,	30	1000	Unknown		06/08/2017 12:56	Finished	CCV @5ppb, IWST-170330A
38	CCB-3,CCB,1,	31	1000	Unknown		06/08/2017 13:07	Finished	CCB R170522A
39	SHUTDOWN	33	1000	Unknown		06/08/2017 13:41	Finished	
40	Eluent: R170605A	33	1000	Unknown		n.a.	Finished	Eluent
41	PCR: R170605B	34	1000	Unknown		n.a.	Finished	Post-Column Reagent

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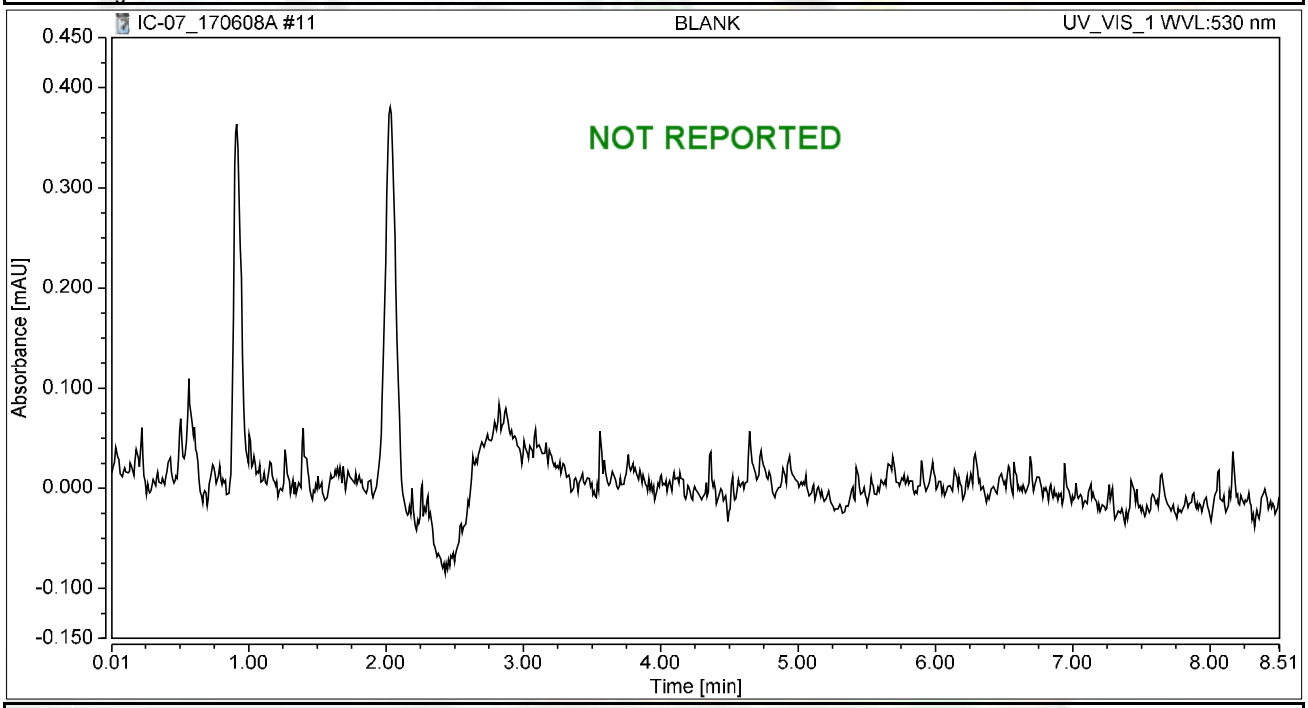
Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.50**
Vial Number:	**1**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 08:29**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

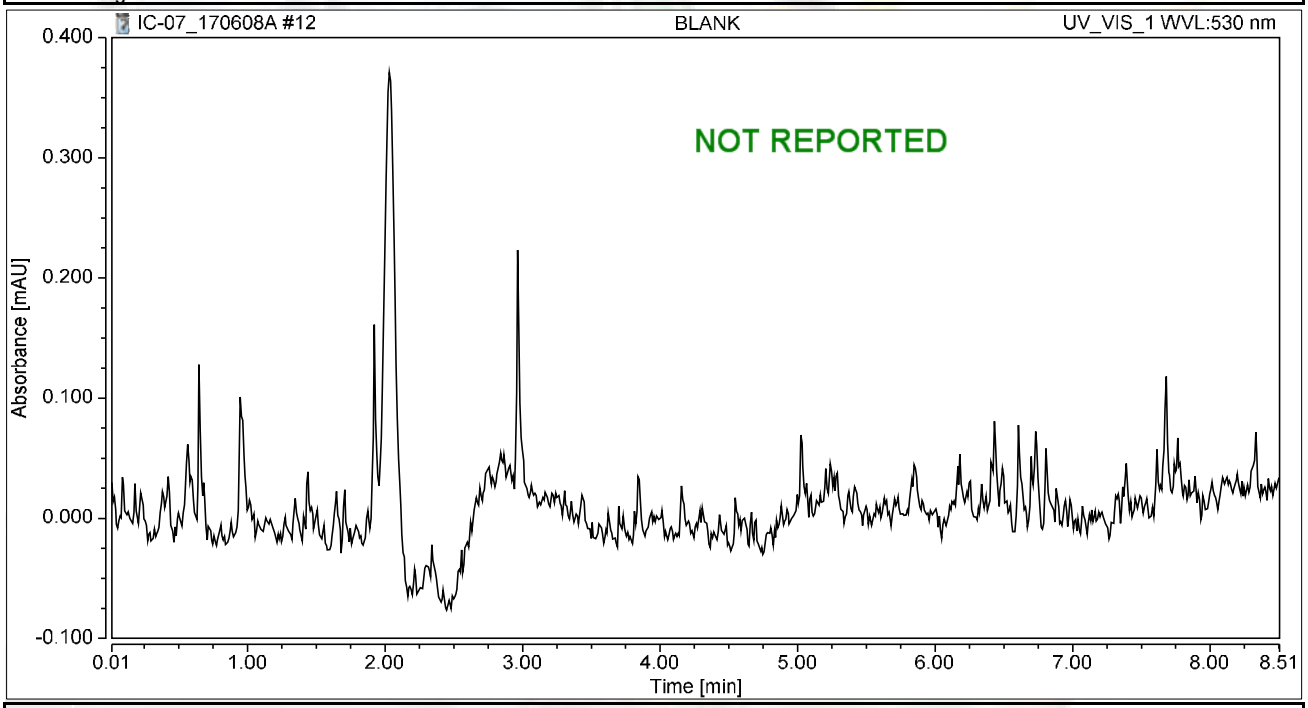
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**BLANK**	*Run Time (min):*	**8.49**
Vial Number:	**2**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 08:40**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

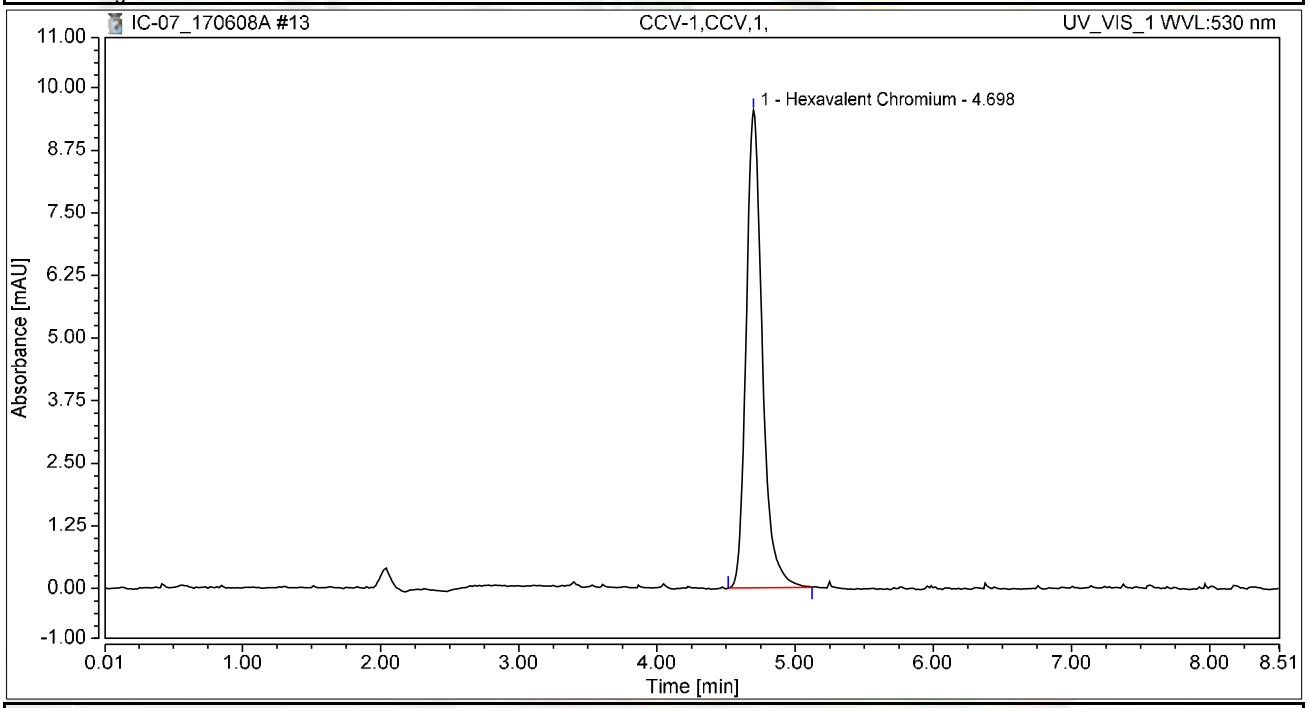
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-1,CCV,1,**	*Run Time (min):*	**8.50**
Vial Number:	**3**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 08:49**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

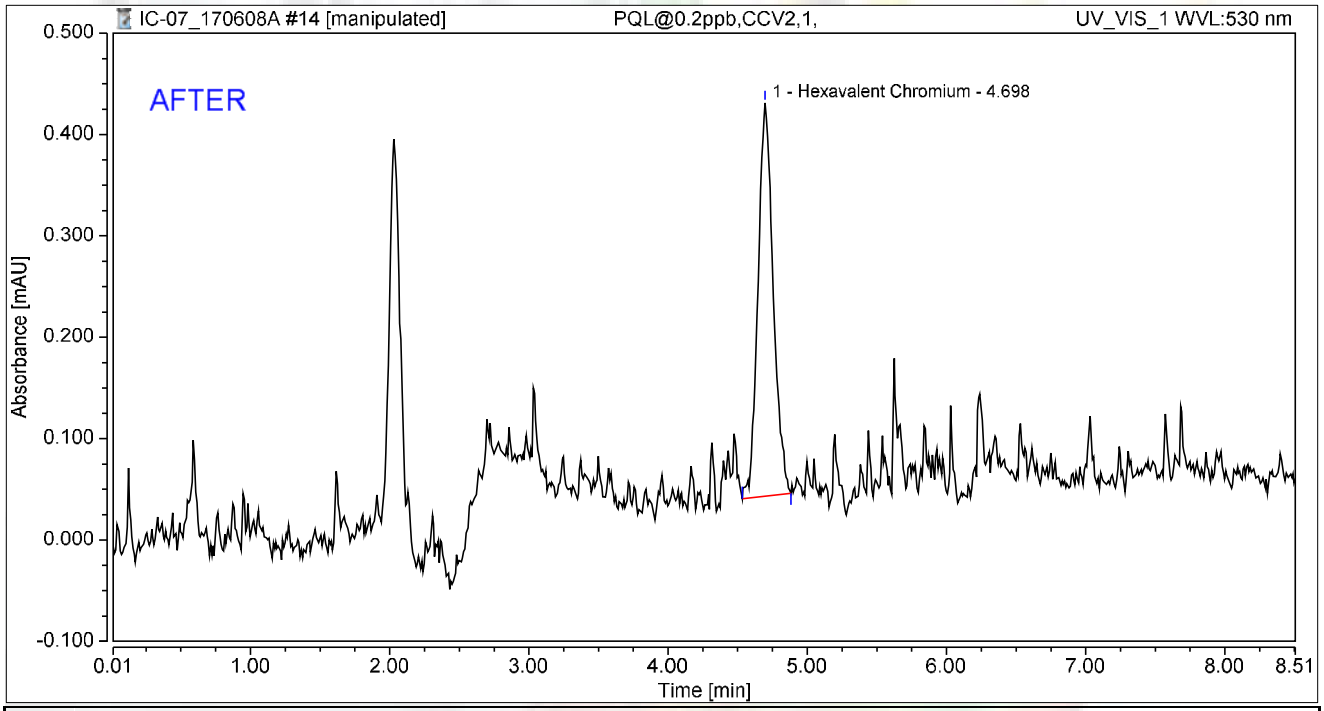
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.698	1.290	9.534	100.00	100.00	4.9916
Total:			**1.290**	**9.534**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 08:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.698	0.049	0.388	100.00	100.00	0.1900
Total:			**0.049**	**0.388**	**100.00**	**100.00**	

rba 6/11/2017

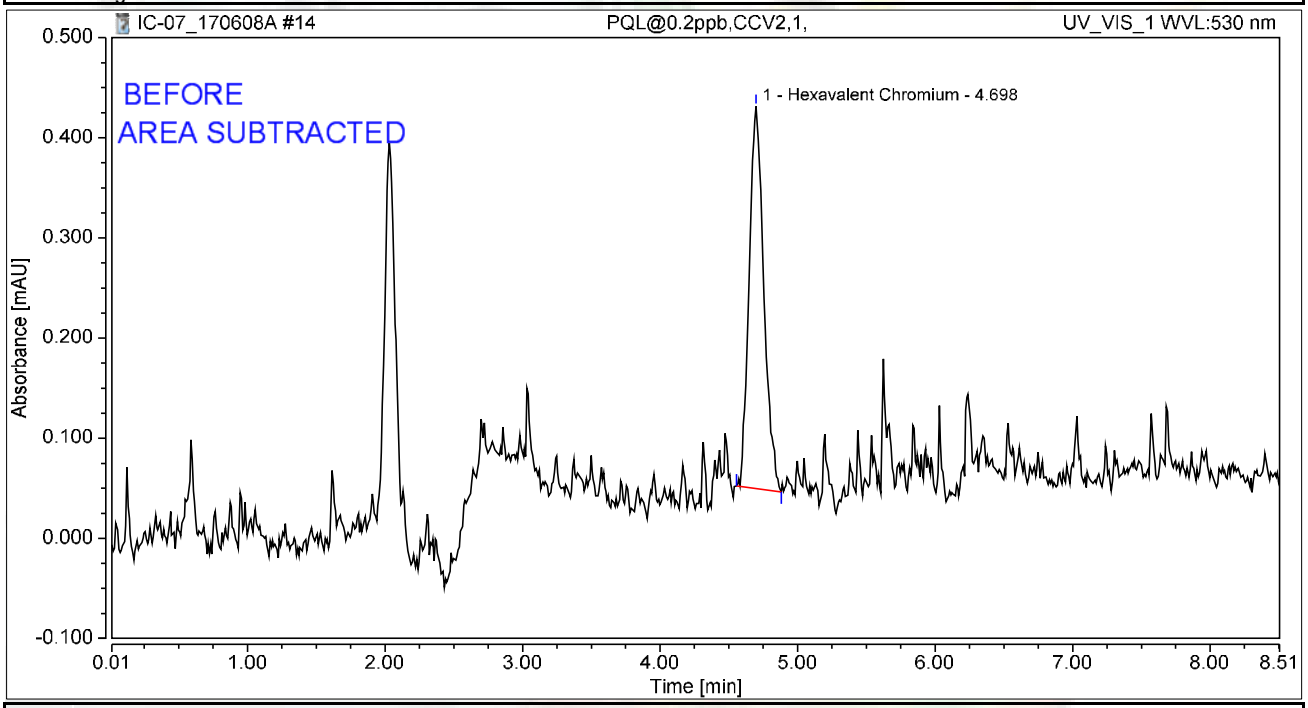
Reviewed by: Nancy 6/12/2017

Chromatogram and Results

Injection Details

Injection Name:	**PQL@0.2ppb,CCV2,1,**	*Run Time (min):*	**8.49**
Vial Number:	**4**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 08:59**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.698	0.047	0.382	100.00	100.00	0.1821
Total:			**0.047**	**0.382**	**100.00**	**100.00**	

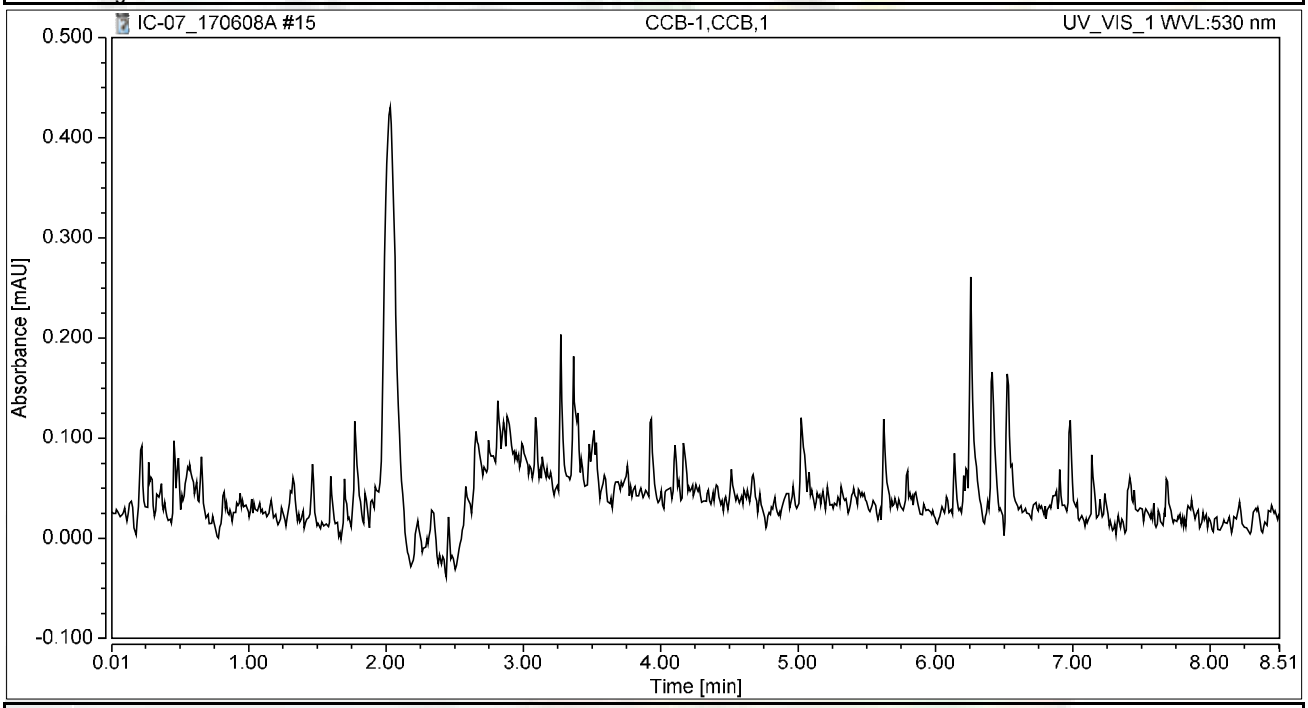
rba 6/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCB-1,CCB,1**	*Run Time (min):*	**8.50**
Vial Number:	**5**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 09:08**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

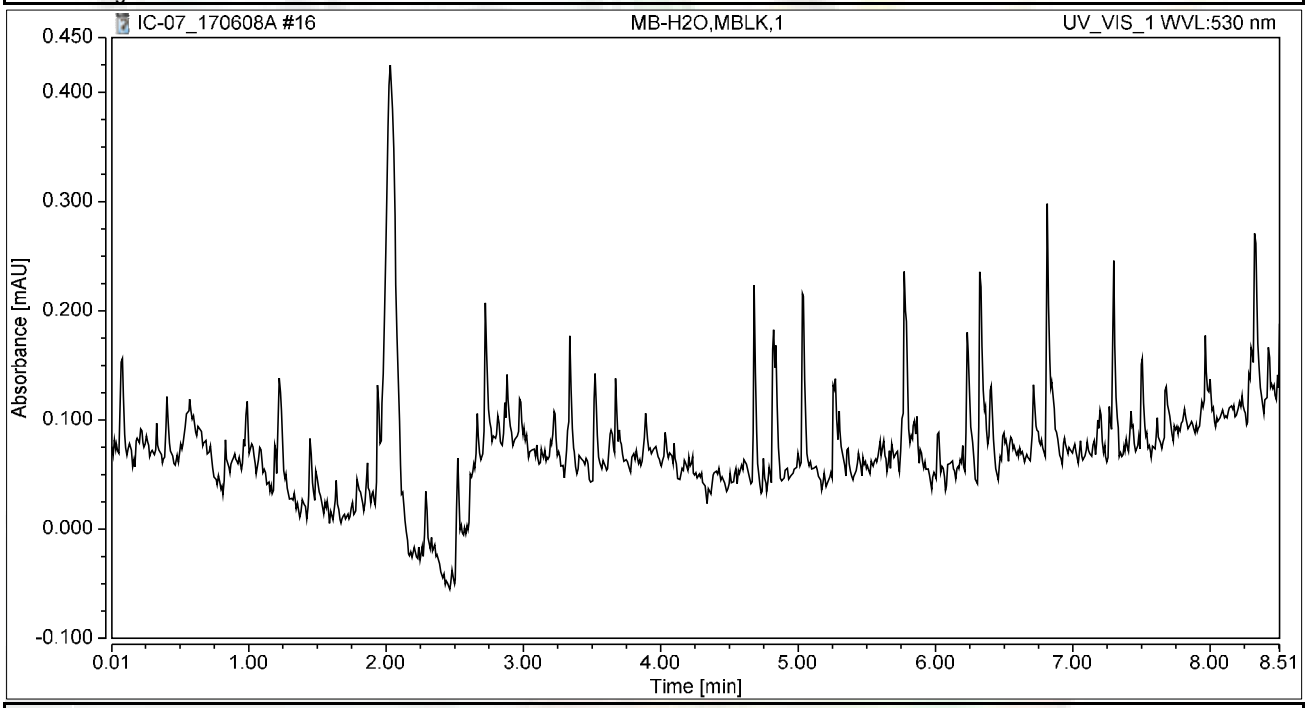
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**MB-H2O,MBLK,1**	*Run Time (min):*	**8.50**
Vial Number:	**6**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 09:18**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

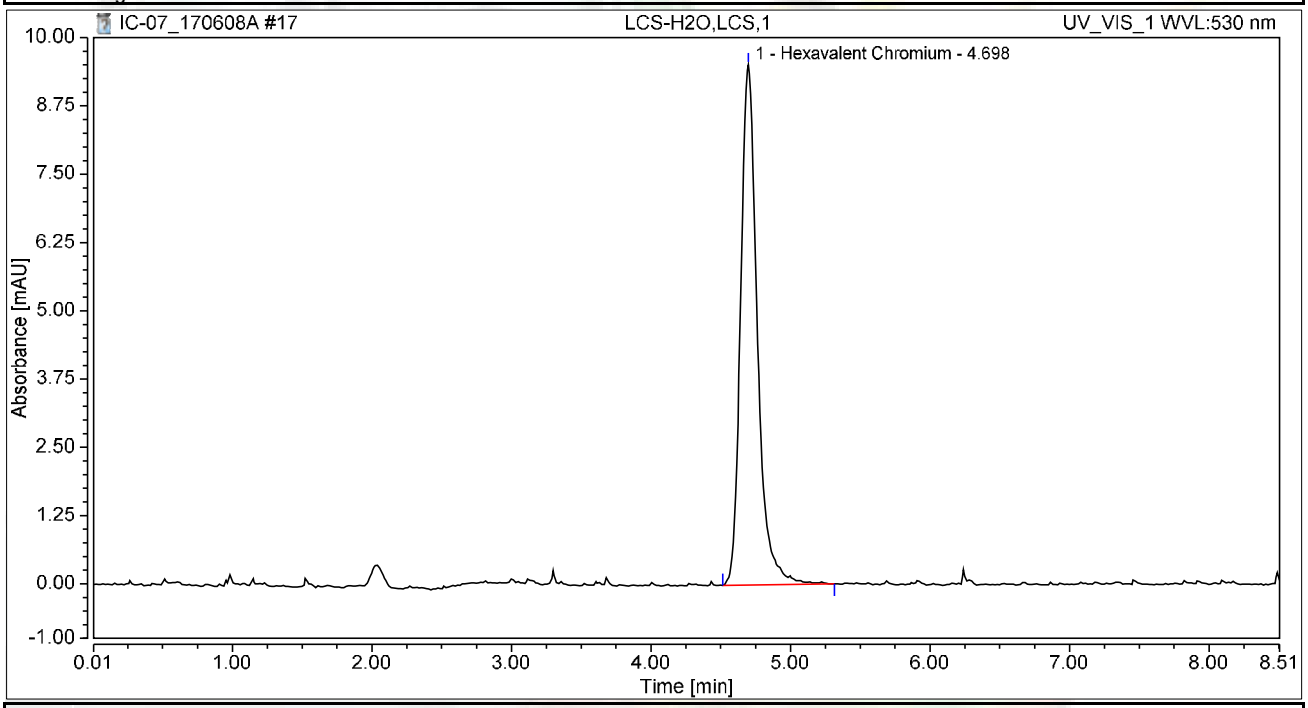
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**LCS-H2O,LCS,1**	*Run Time (min):*	**8.50**
Vial Number:	**7**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 09:27**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

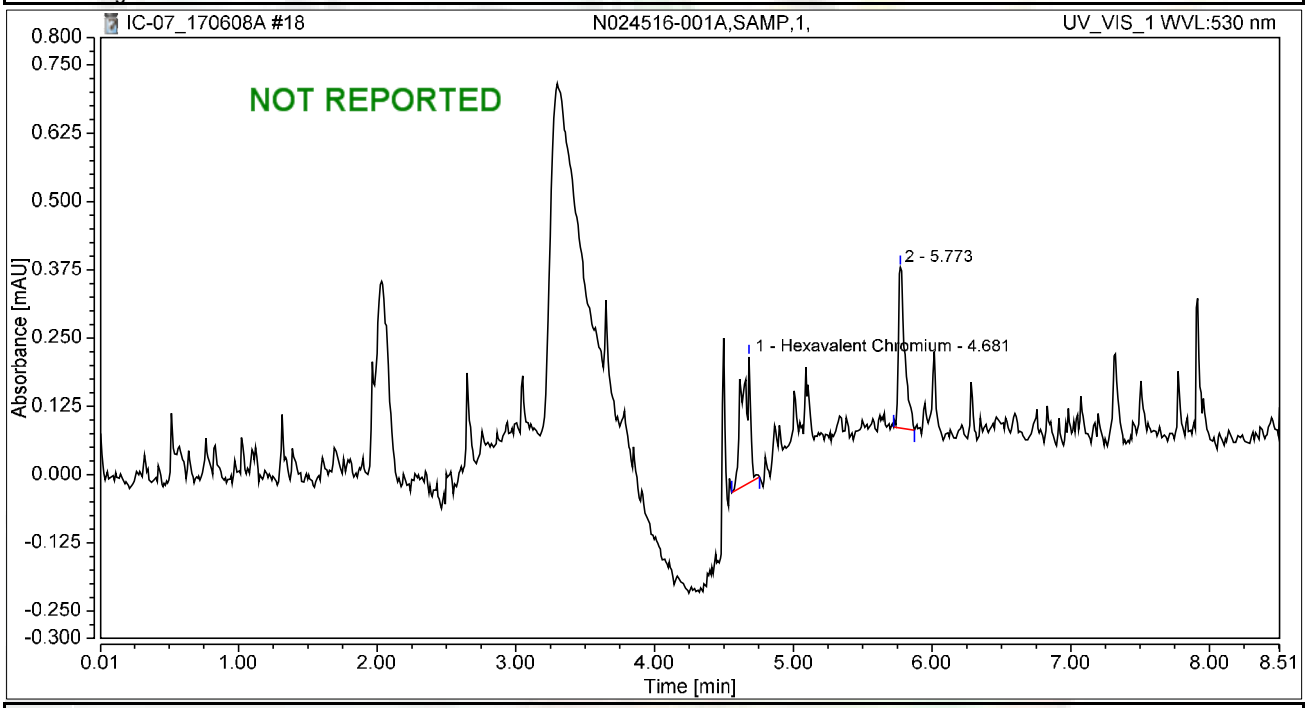
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.698	1.325	9.525	100.00	100.00	5.1279
Total:			**1.325**	**9.525**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024516-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**9**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 09:39**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

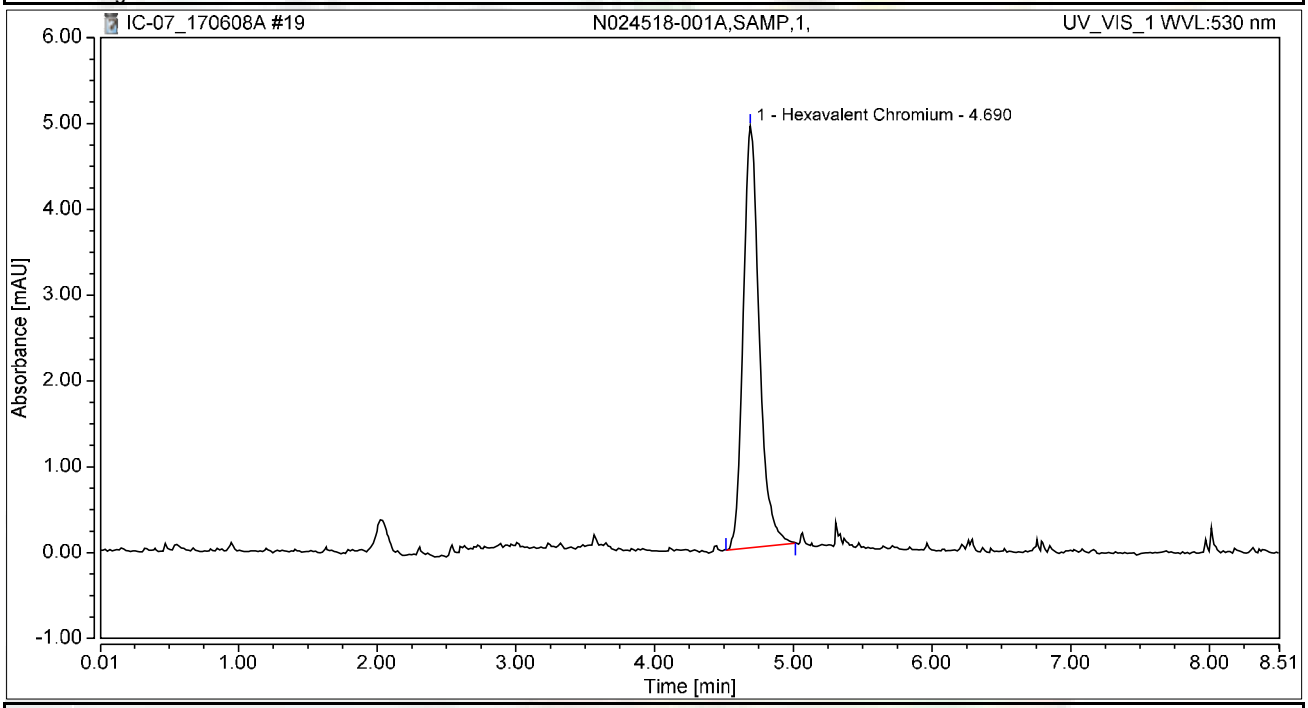
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.681	0.017	0.231	51.43	43.98	0.0656
2		5.773	0.016	0.294	48.57	56.02	n.a.
Total:			**0.033**	**0.525**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024518-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**10**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 09:50**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

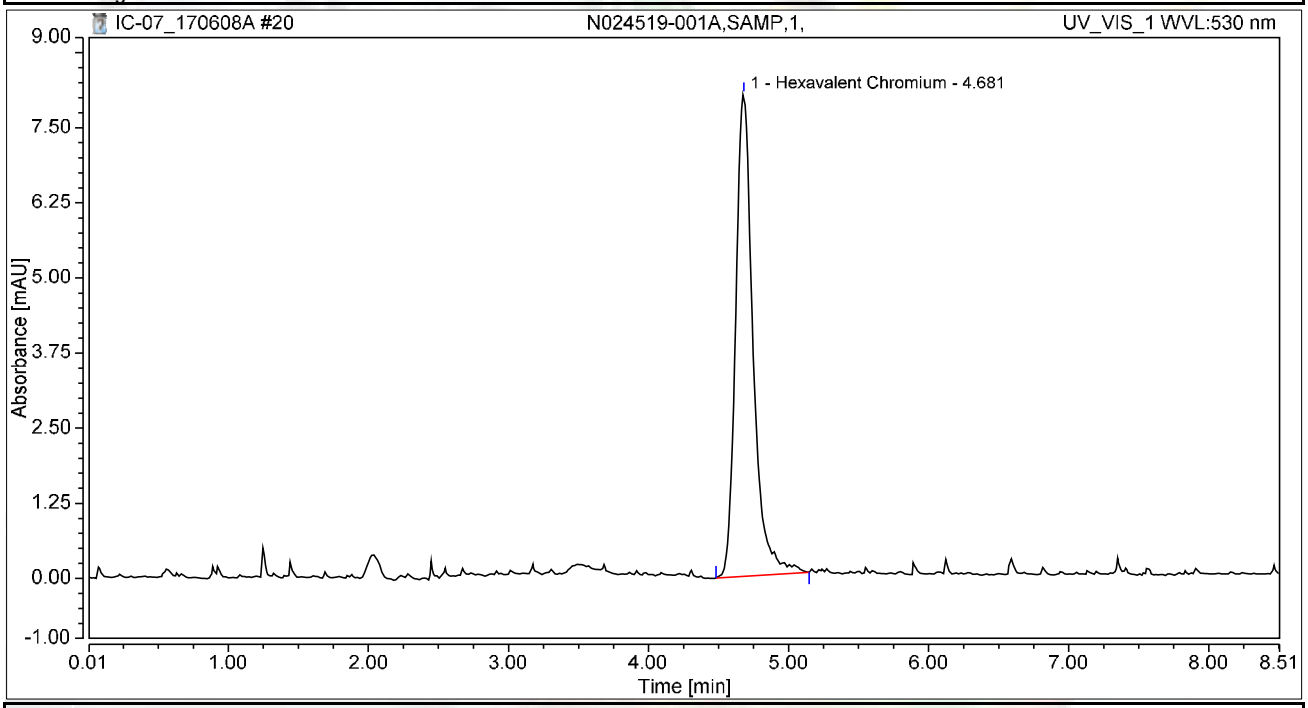
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.690	0.663	4.915	100.00	100.00	2.5658
Total:			**0.663**	**4.915**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024519-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**11**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:00**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

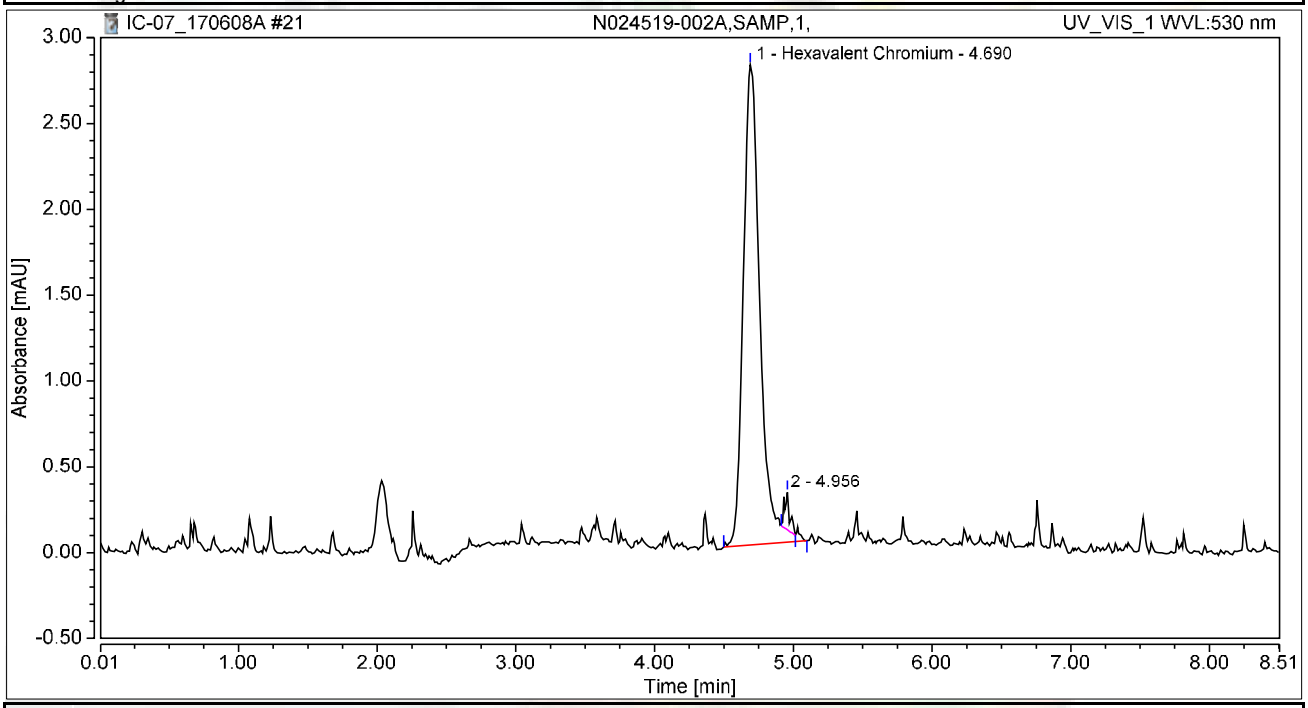
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.681	1.156	8.025	100.00	100.00	4.4715
Total:			**1.156**	**8.025**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024519-002A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**12**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:09**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

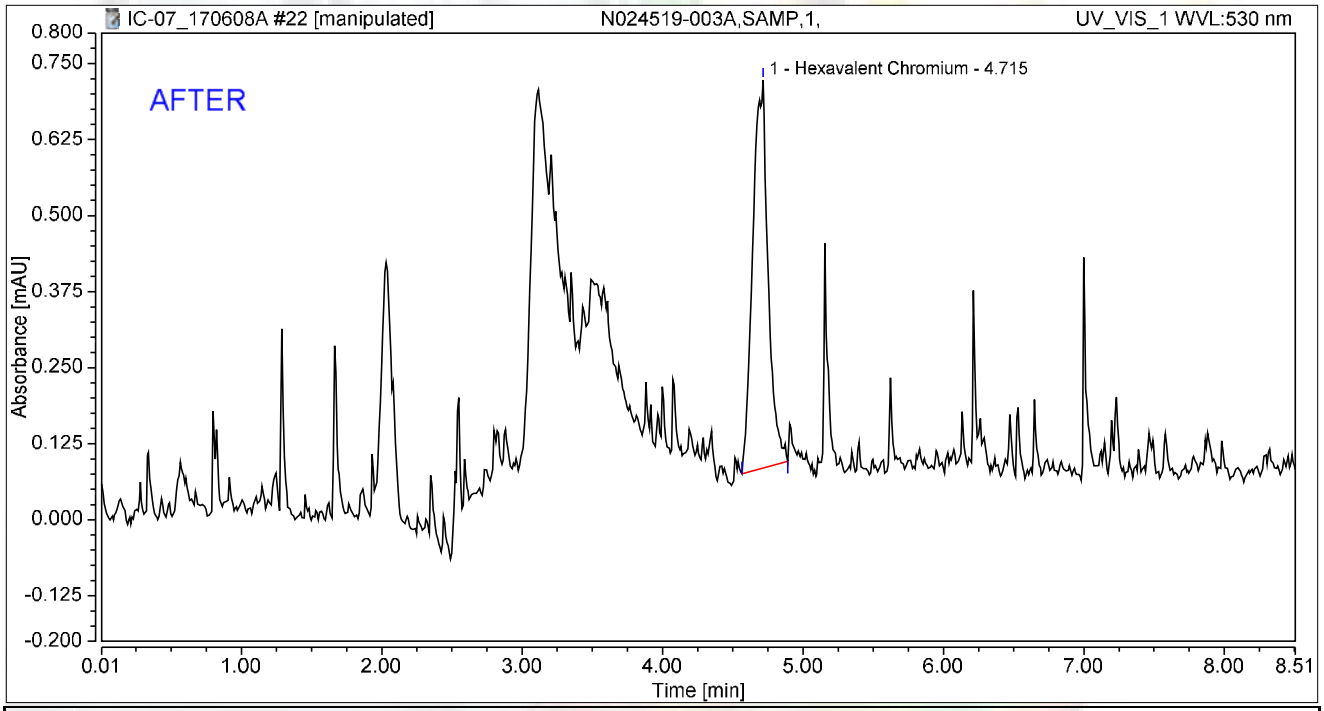
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.690	0.390	2.796	97.74	92.76	1.5092
2		4.956	0.009	0.218	2.26	7.24	n.a.
Total:			**0.399**	**3.015**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024519-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.715	0.081	0.638	100.00	100.00	0.3142
Total:			**0.081**	**0.638**	**100.00**	**100.00**	

rba 6/11/2017

Reviewed by: Nancy 6/12/2017

My first report/Integration

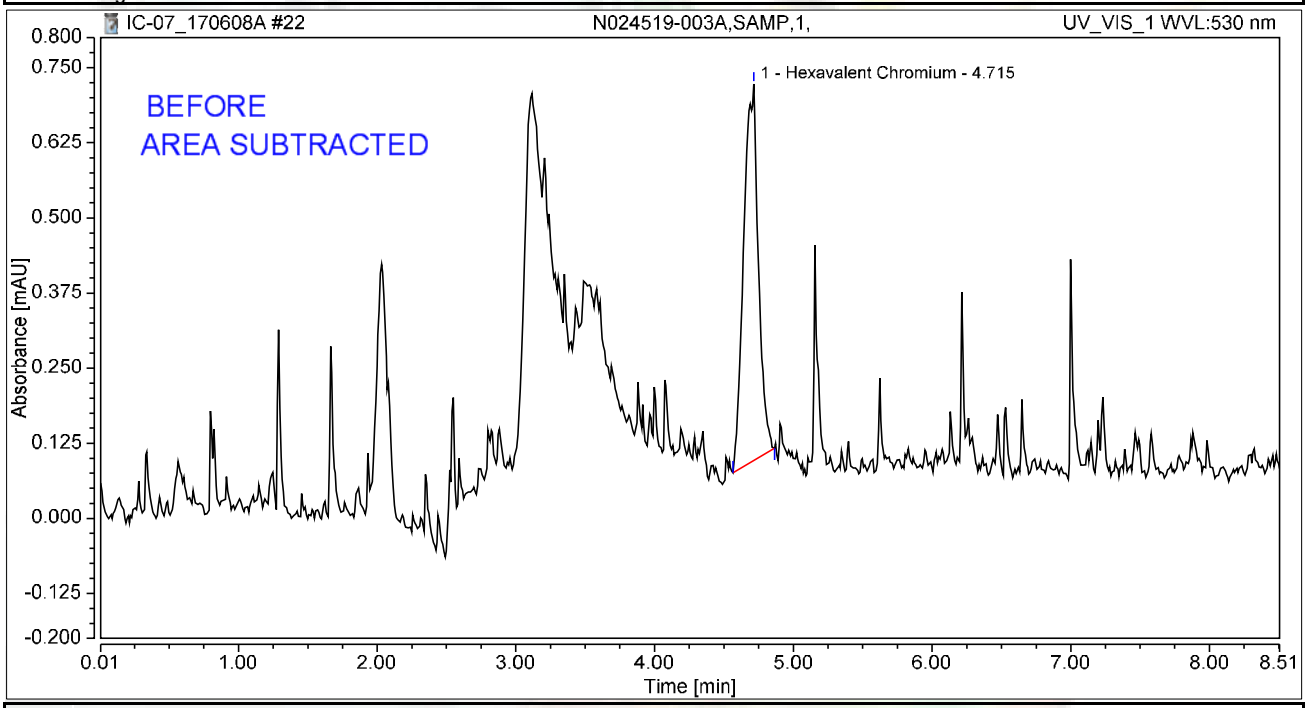
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024519-003A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**13**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:19**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.715	0.077	0.627	100.00	100.00	0.2995
Total:			**0.077**	**0.627**	**100.00**	**100.00**	

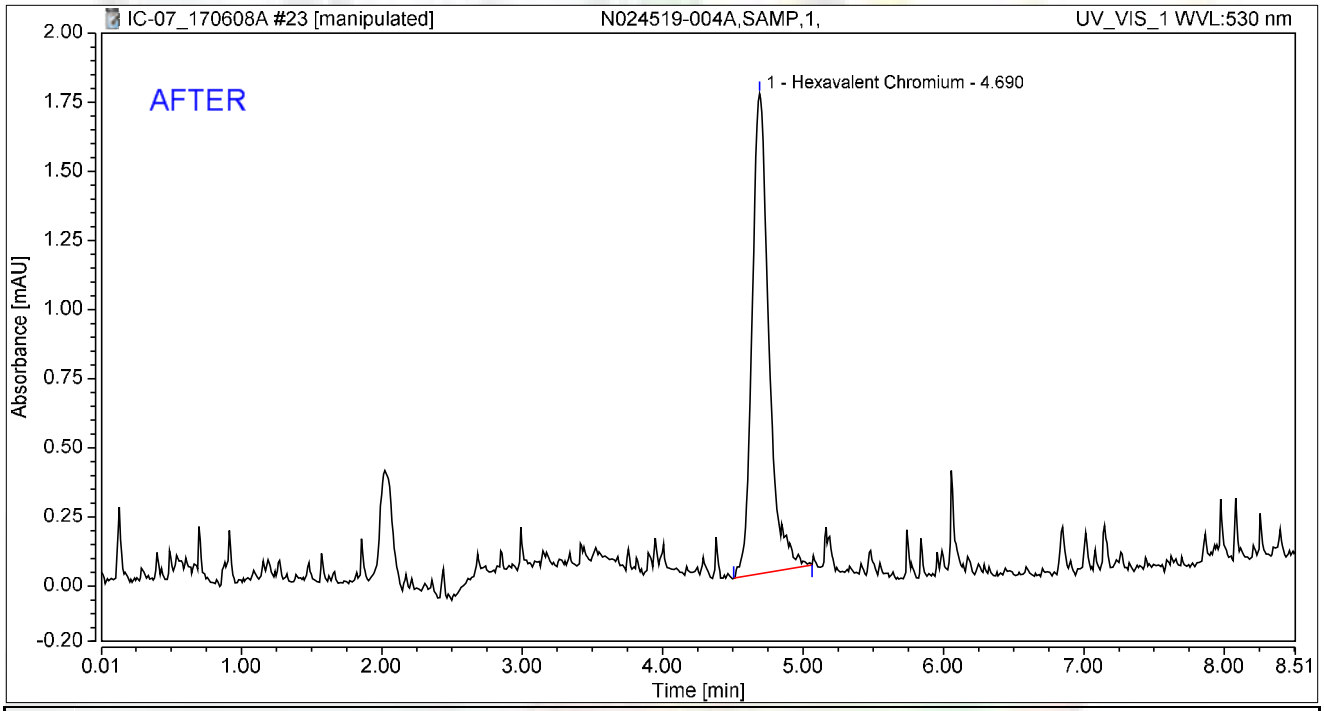
rba 6/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024519-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.690	0.242	1.737	100.00	100.00	0.9345
Total:			**0.242**	**1.737**	**100.00**	**100.00**	

rba 6/11/2017

Reviewed by: Dionex 6/12/2017

My first report/Integration

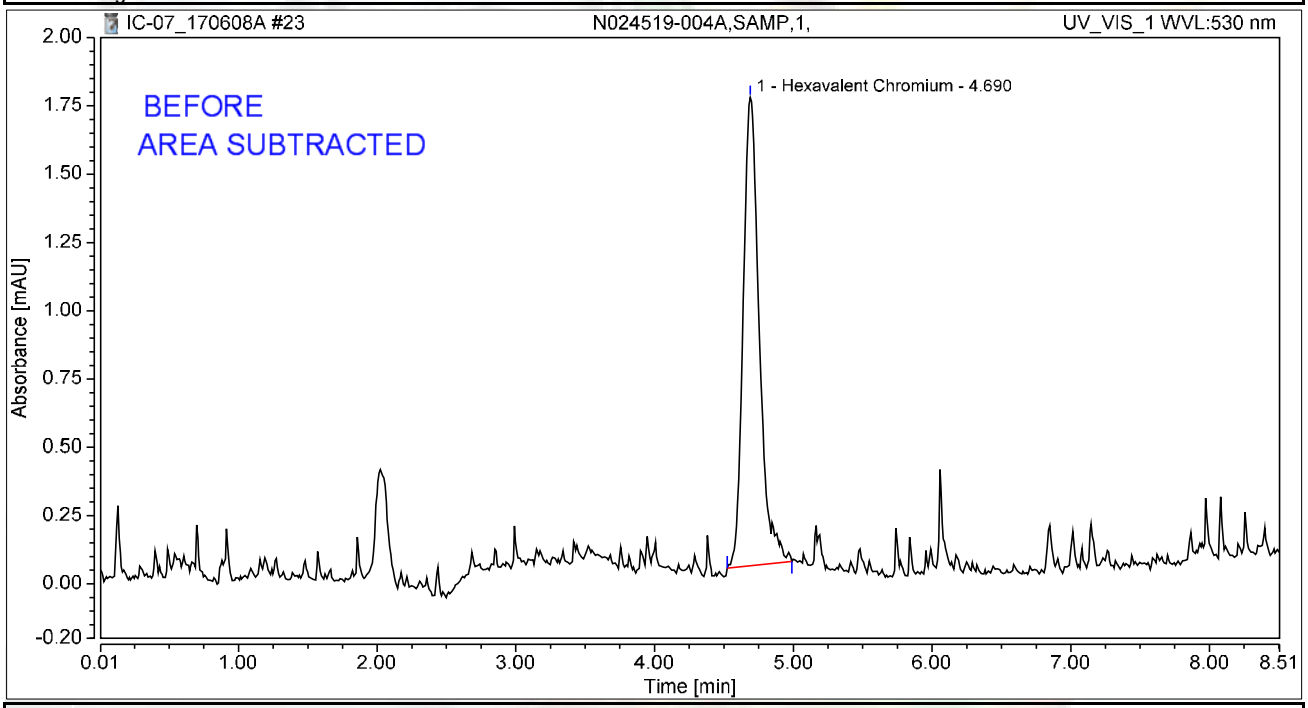
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024519-004A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**14**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:28**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.690	0.231	1.714	100.00	100.00	0.8940
Total:			**0.231**	**1.714**	**100.00**	**100.00**	

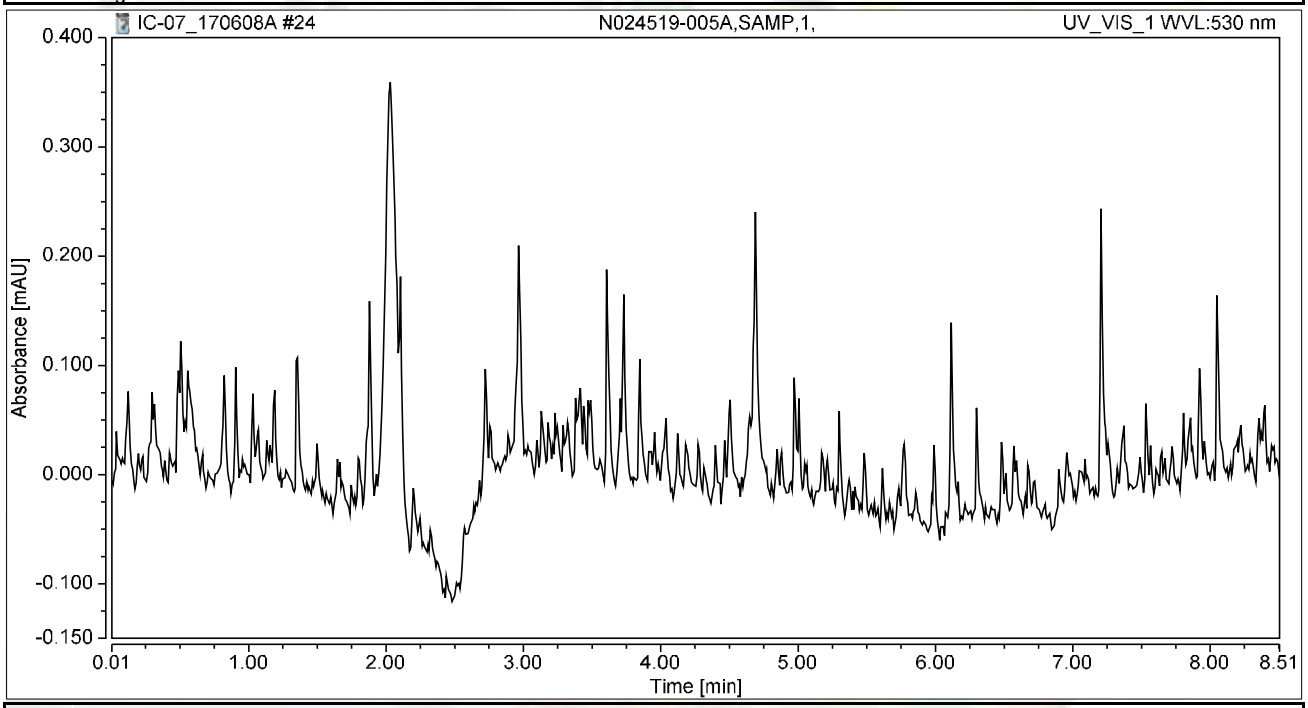
rba 6/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**N024519-005A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**15**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:38**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

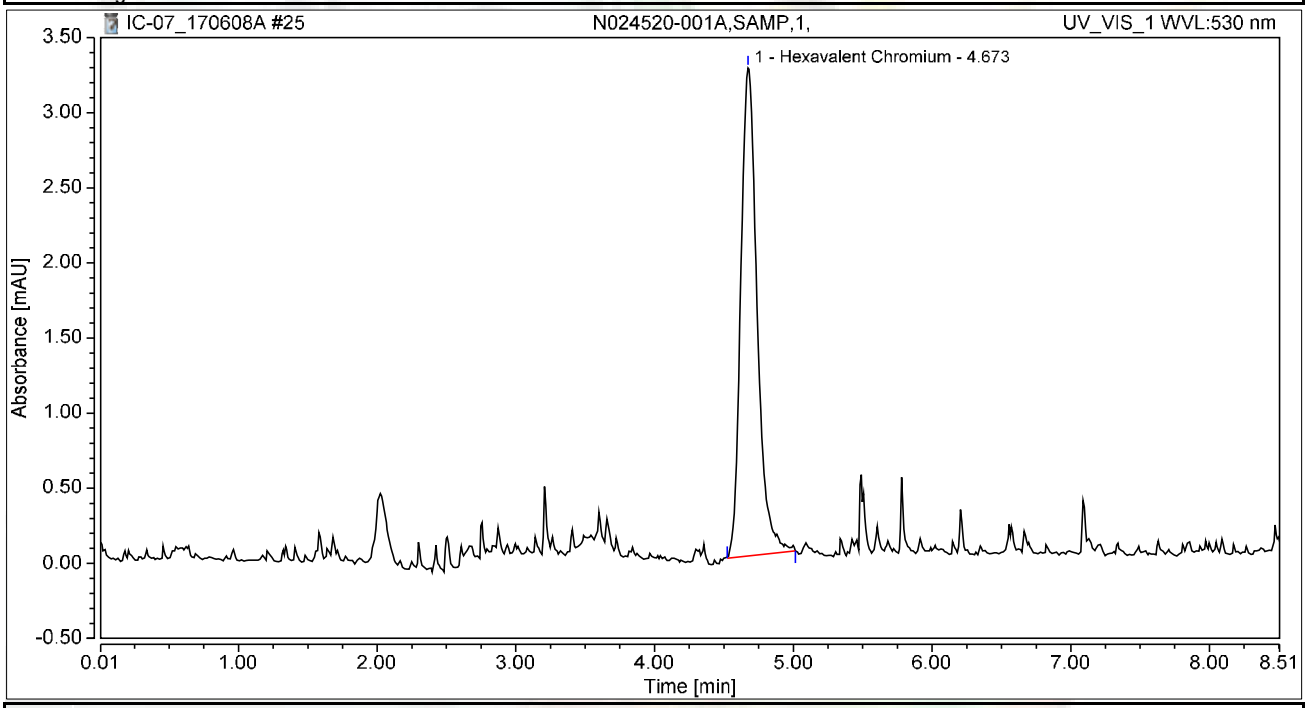
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024520-001A,SAMP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**16**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:47**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

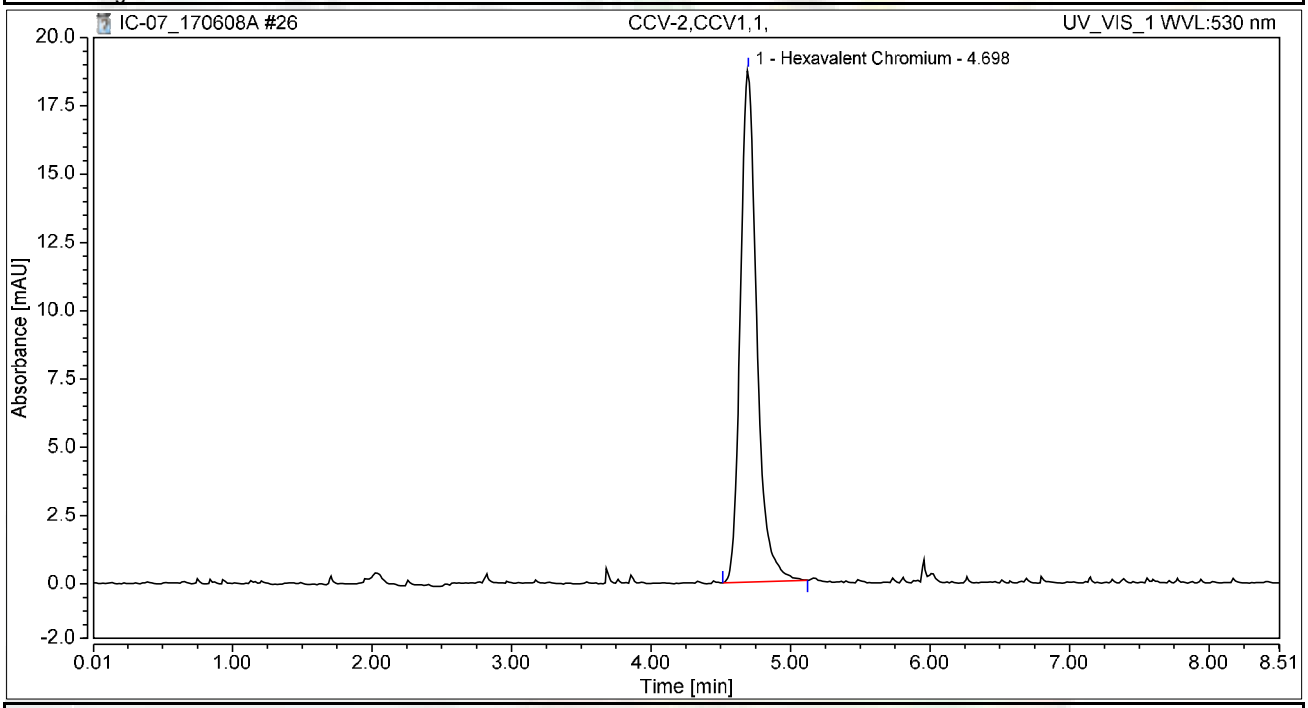
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.673	0.445	3.250	100.00	100.00	1.7222
Total:			**0.445**	**3.250**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCV-2,CCV1,1,**	*Run Time (min):*	**8.50**
Vial Number:	**17**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 10:57**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

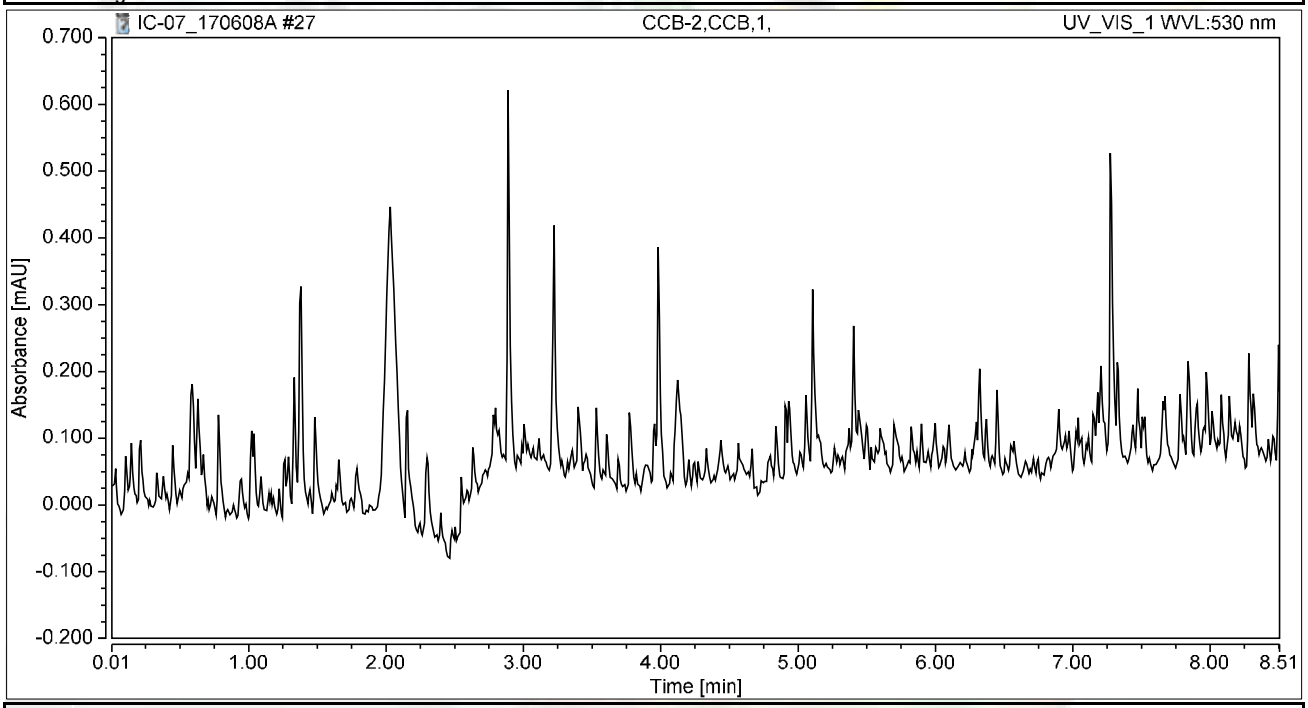
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.698	2.558	18.765	100.00	100.00	9.8995
Total:			**2.558**	**18.765**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-2,CCB,1,**	*Run Time (min):*	**8.50**
Vial Number:	**18**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 11:06**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

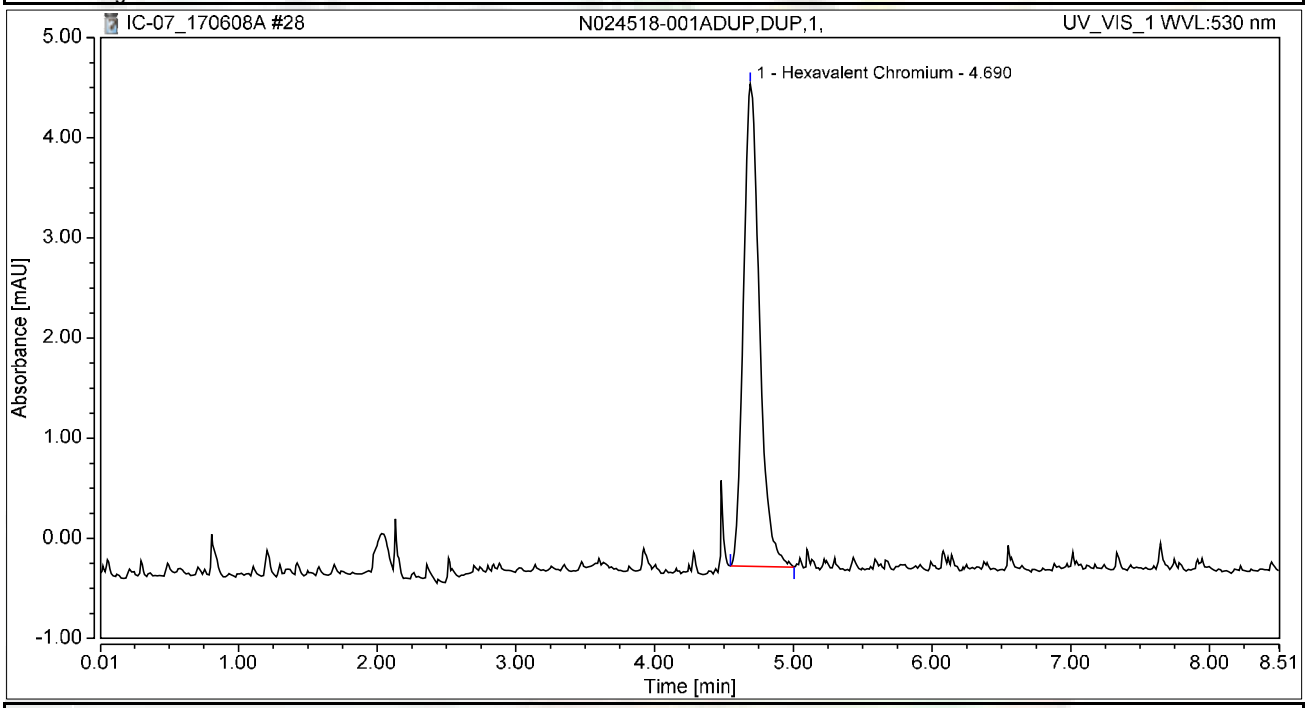
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024518-001ADUP,DUP,1,**	*Run Time (min):*	**8.50**
Vial Number:	**19**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 11:16**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

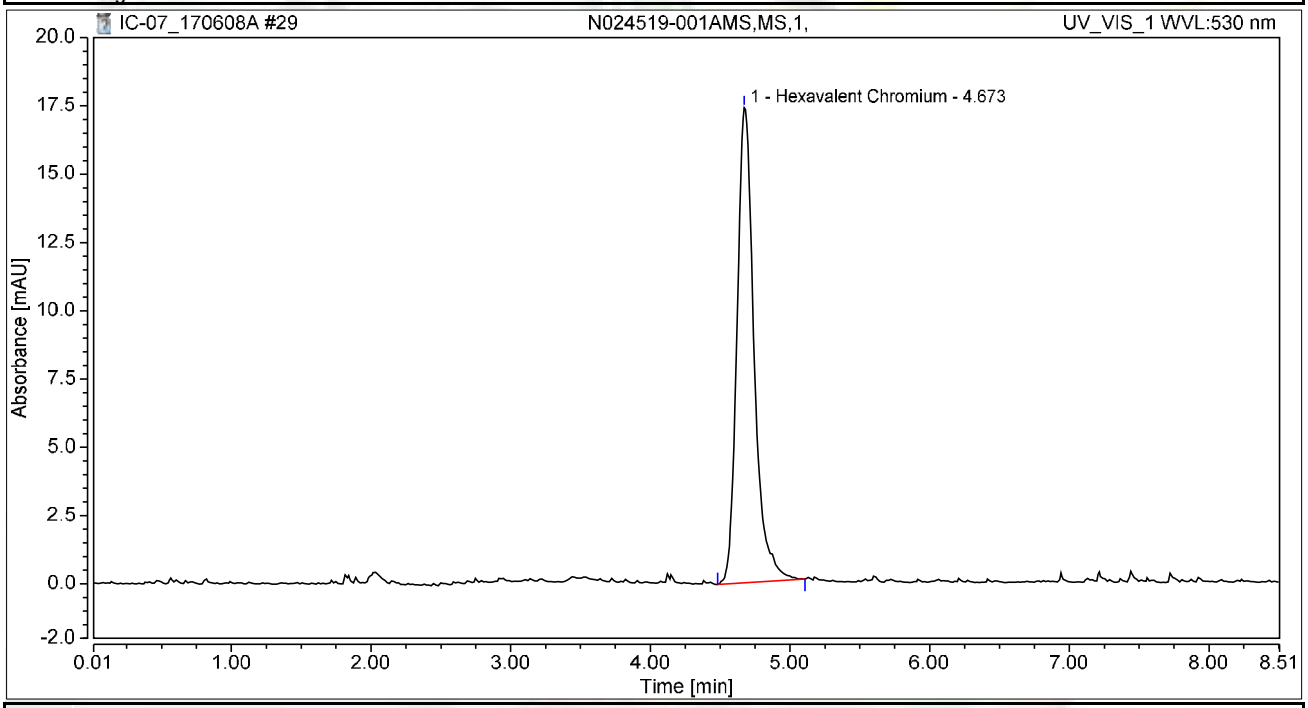
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.690	0.647	4.814	100.00	100.00	2.5045
Total:			**0.647**	**4.814**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024519-001AMS,MS,1,**	*Run Time (min):*	**8.49**
Vial Number:	**20**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 11:25**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

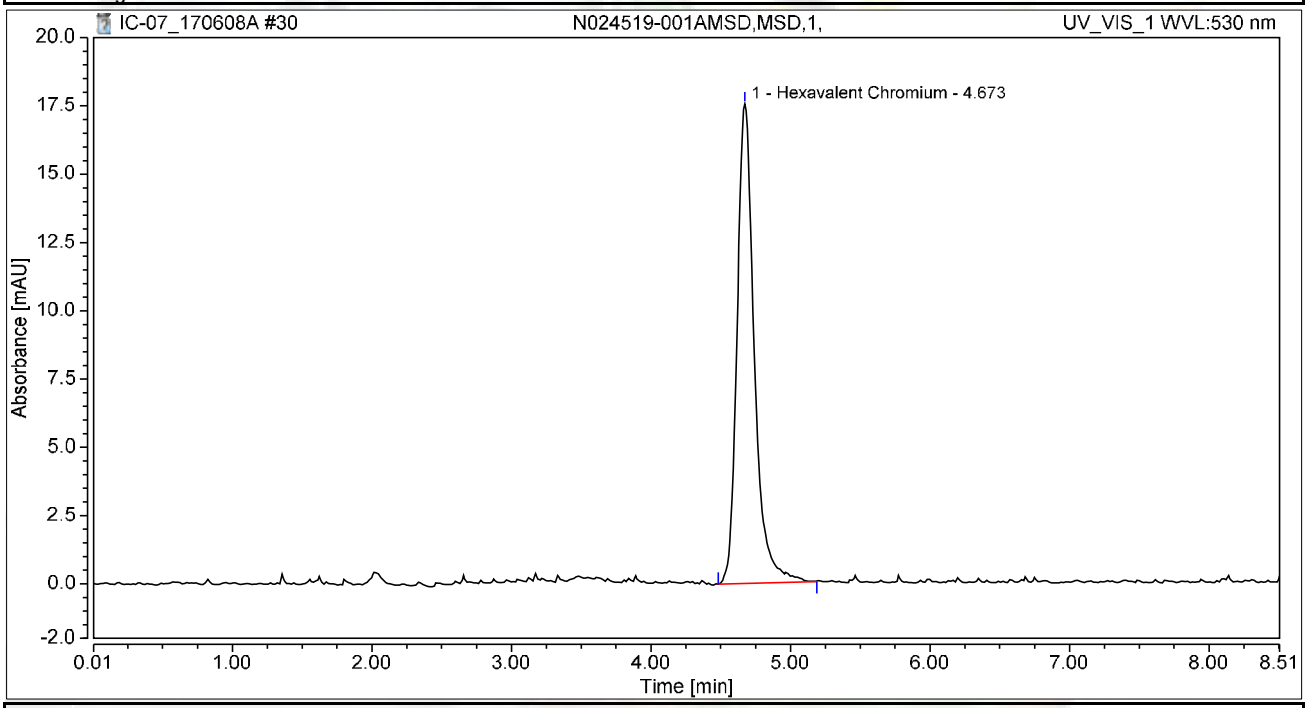
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.673	2.470	17.399	100.00	100.00	9.5566
Total:			**2.470**	**17.399**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024519-001AMSD,MSD,1,**	*Run Time (min):*	**8.50**
Vial Number:	**21**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 11:34**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

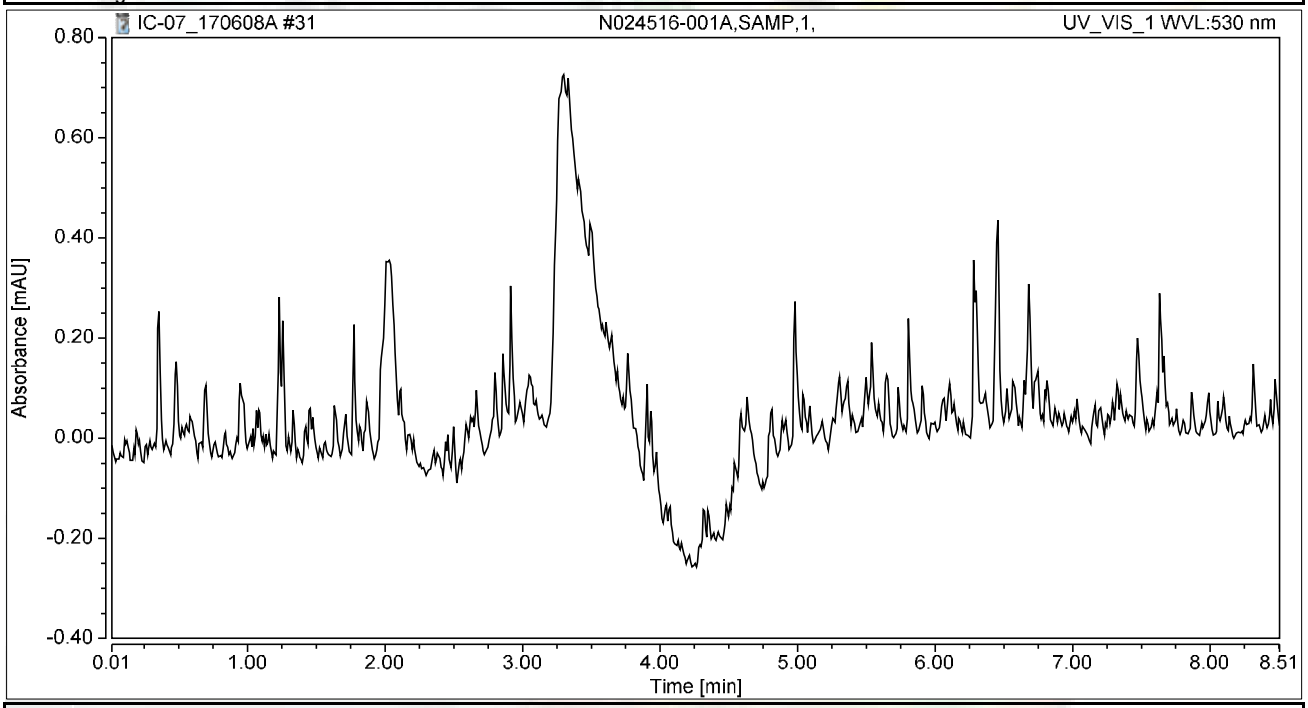
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.673	2.508	17.561	100.00	100.00	9.7051
Total:			**2.508**	**17.561**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024516-001A,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**22**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 11:44**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

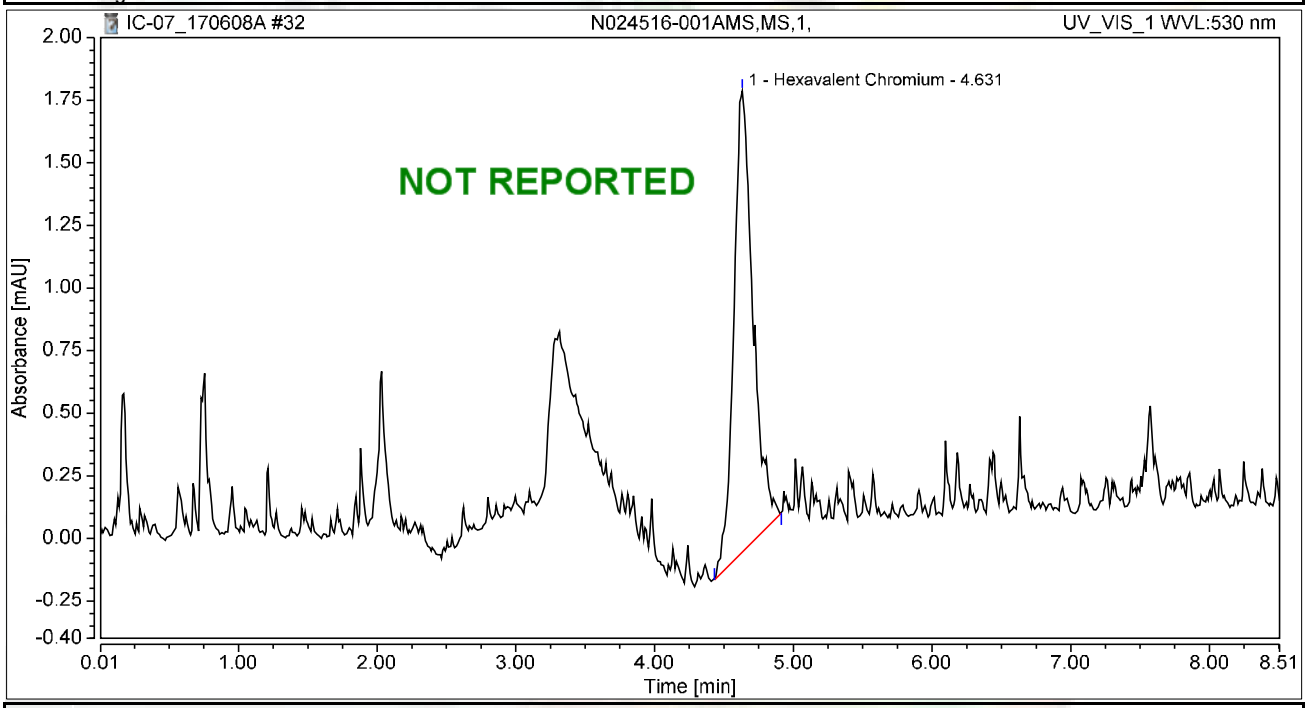
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024516-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**23**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 11:53**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

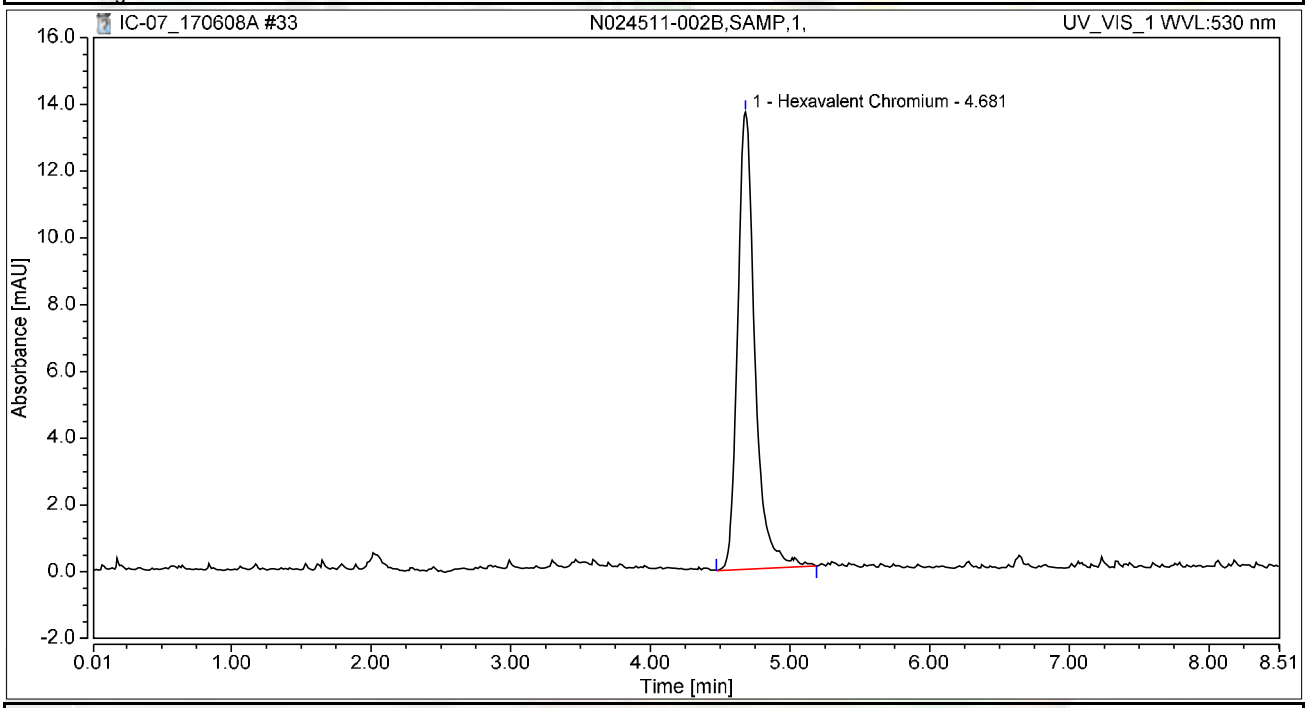
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.631	0.296	1.843	100.00	100.00	1.1442
Total:			**0.296**	**1.843**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024511-002B,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**25**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 12:13**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

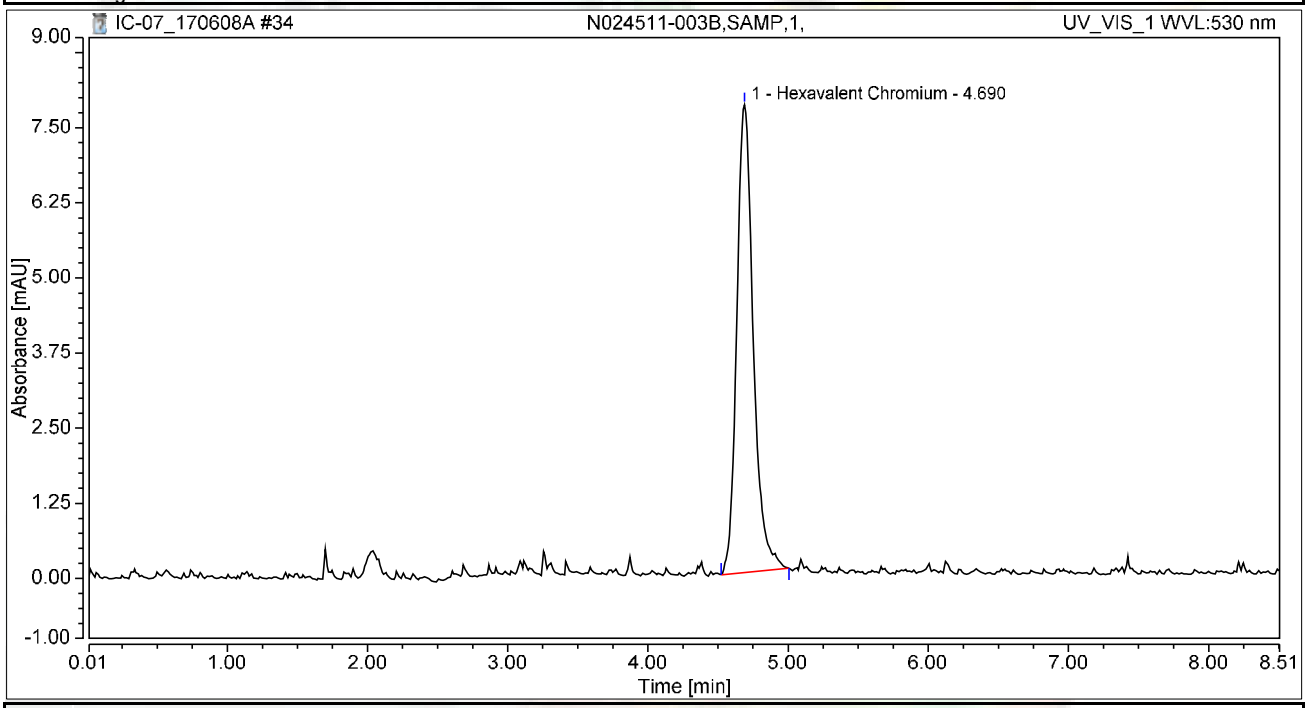
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.681	1.966	13.692	100.00	100.00	7.6081
Total:			**1.966**	**13.692**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024511-003B,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**26**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 12:24**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

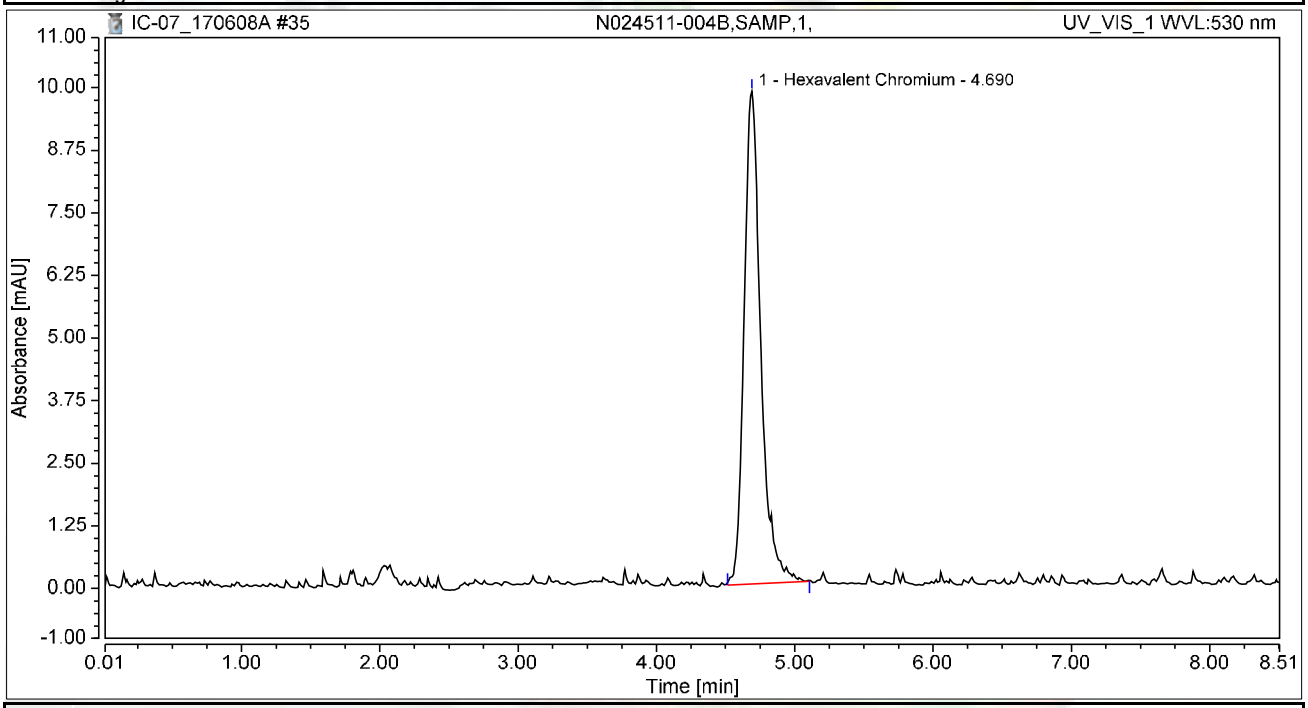
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.690	1.065	7.787	100.00	100.00	4.1194
Total:			**1.065**	**7.787**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024511-004B,SAMP,1,**	*Run Time (min):*	**8.49**
Vial Number:	**27**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 12:33**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

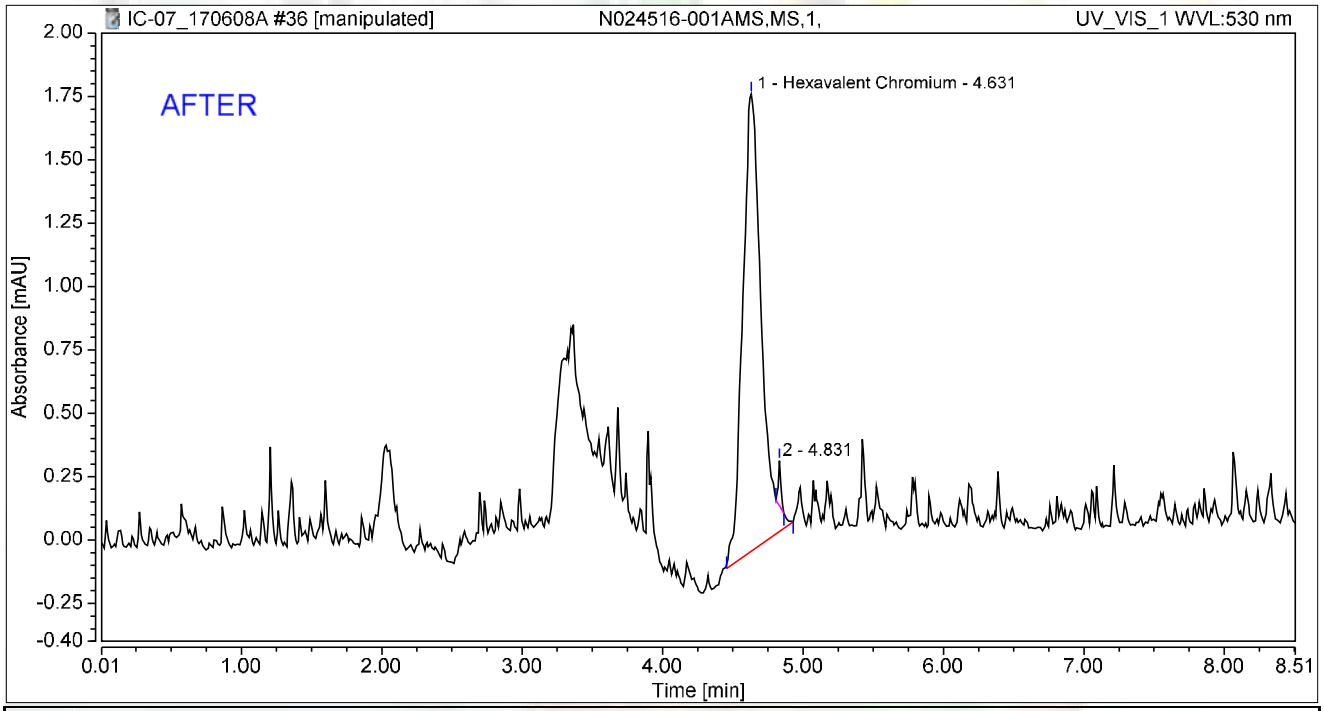
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.690	1.373	9.844	100.00	100.00	5.3134
Total:			**1.373**	**9.844**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**N024516-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.631	0.276	1.805	98.73	91.06	1.0694
2		4.831	0.004	0.177	1.27	8.94	n.a.
Total:			**0.280**	**1.982**	**100.00**	**100.00**	

rba 6/11/2017

Reviewed by: Nancy 6/12/2017

My first report/integration

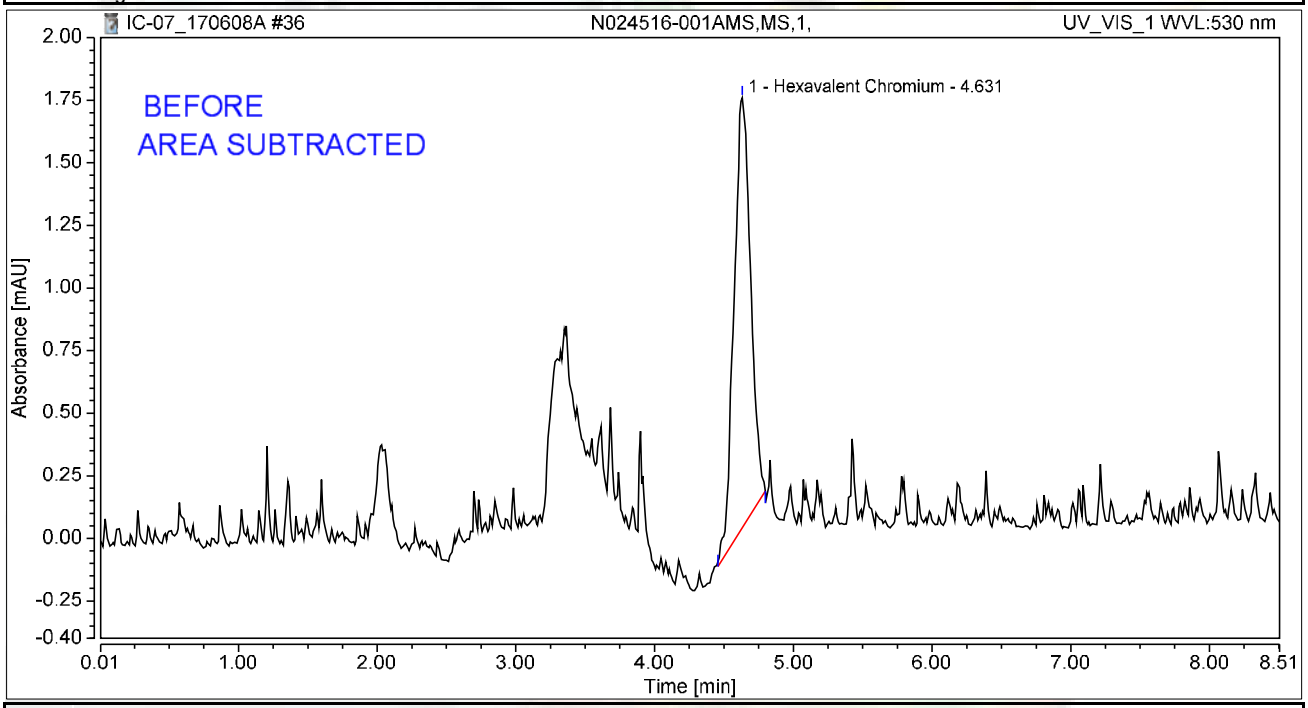
Chromeleon (c) Dionex
Version 7.1.1.1127

Chromatogram and Results

Injection Details

Injection Name:	**N024516-001AMS,MS,1,**	*Run Time (min):*	**8.50**
Vial Number:	**28**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 12:43**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.631	0.239	1.719	100.00	100.00	0.9260
Total:			**0.239**	**1.719**	**100.00**	**100.00**	

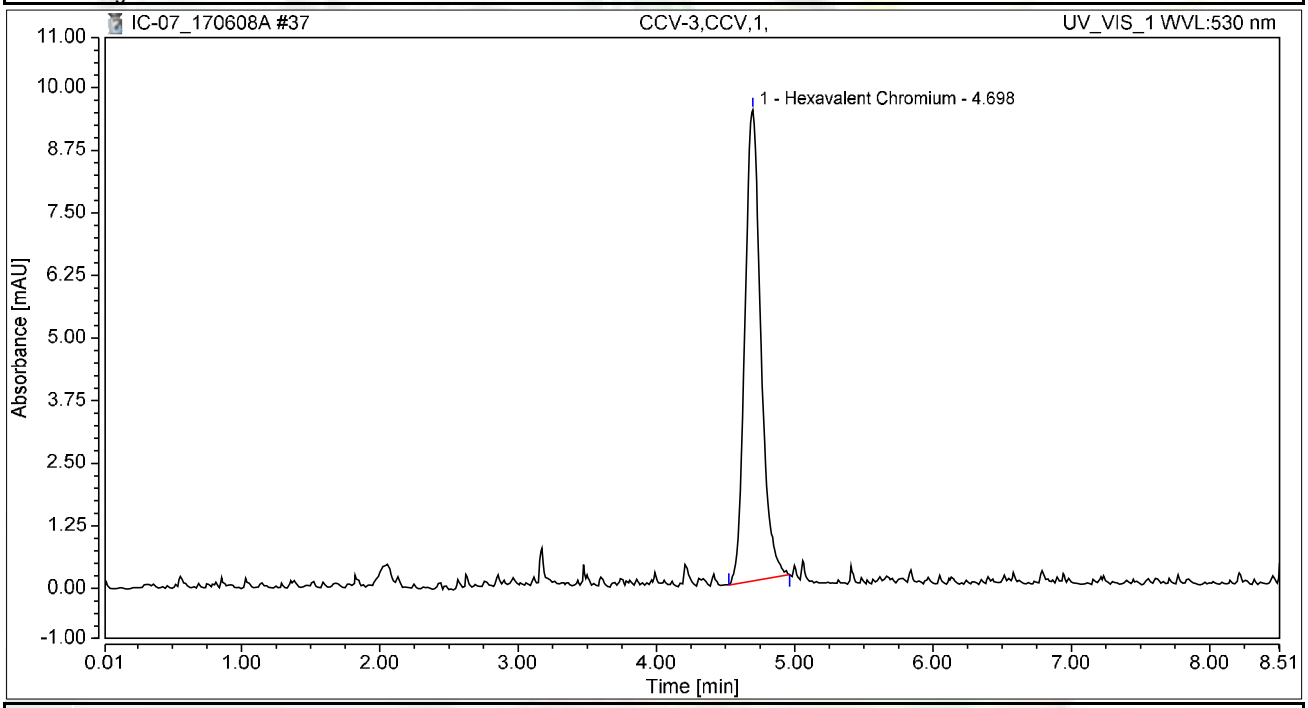
rba 6/11/2017

Chromatogram and Results

Injection Details

Injection Name:	**CCV-3,CCV,1,**	*Run Time (min):*	**8.49**
Vial Number:	**30**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 12:56**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

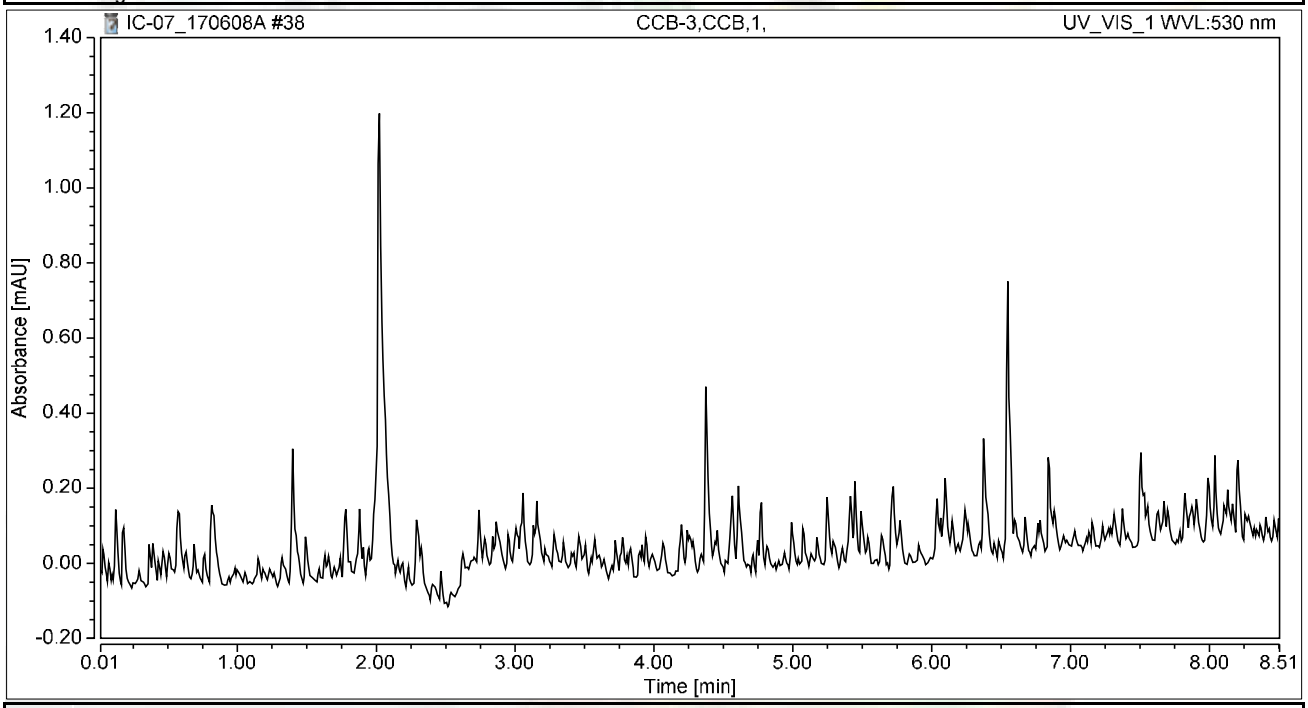
No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
1	Hexavalent Chromium	4.698	1.258	9.410	100.00	100.00	4.8675
Total:			**1.258**	**9.410**	**100.00**	**100.00**	

Chromatogram and Results

Injection Details

Injection Name:	**CCB-3,CCB,1,**	*Run Time (min):*	**8.49**
Vial Number:	**31**	*Injection Volume:*	**1000.00**
Injection Type:	**Unknown**	*Channel:*	**UV_VIS_1**
Calibration Level:		*Wavelength:*	**530.0**
Instrument Method:	**Hex Chrom 4 mm**	*Bandwidth:*	**n.a.**
Processing Method:	**170531_IC-07_Cr6_218_6_HIGH**	*Dilution Factor:*	**1.0000**
Injection Date/Time:	**08/Jun/17 13:07**	*Sample Weight:*	**1.0000**

Chromatogram



Integration Results

No.	Peak Name	Retention Time min	Area mAU*min	Height mAU	Relative Area %	Relative Height %	Amount ug/L
n.a.	Hexavalent Chromium	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Total:			**0.000**	**0.000**	**0.00**	**0.00**	

SM 2320B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115677 **Analyst:** LSR

ASSET #: N024516 **Date Analyzed:** 6/8/2017

Method: EPA 2320

Initial Calibration	1st Level Review Y	1st Level Review N	1st Level Review N/A	2nd Level Review Y	2nd Level Review N	2nd Level Review N/A
1. ICAL before initial sample analysis or every 24 hrs.			X			
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)			X			
3. ICV within ± 15% of expected value.			X			
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.			X			
5. CCV within ± 15% of expected value.			X			
6. Calibration blanks run after ICV and CCV?			X			
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)			X			
Sample Information						
8. All samples are within linear range.			X			
9. Are all samples analyzed within hold time.	X					
QC Items						
10. Method blank values are below the PQL .	X					
11. LCS compounds within control limits.	X					
12. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			
14. Runlog complete and included in package.	X					
15. Spectrophotometer tape included (Spec work only)			X			
16. Digestion log complete and included in package (if applicable)			X			
Preliminary Report						
17. Does the raw data match the preliminary report?	X					
18. Are analytical results correct?	X					
19. Is the QC summary report present and complete?	X					

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer: Julia Ramit Date: 6/12/2017

2nd Level Reviewer: 6/12/2017 Date: —

SAMPLE CALCULATION

Sample ID: **N024516-001C @ pH 7.50**

A. Standardization of Sulfuric Acid (titrant):

Normality of acid = (A) (B)/ (53.00) (C)

Where:

A, grams weighed for Na_2CO_3 solution (Na_2CO_3 Standardization Solution)
B, mL Na2CO3 solution taken for titration, and
C, ml of sulfuric acid used to inflection point

Spike Standards

Na_2CO_3 Standardization Solution, ACS Grade (1.00 ml = 2500ug as $CaCO_3$): Dissolve 2.650 grams of Na_2CO_3 in distilled water and dilute to 1 liter.

LCS/MS/MSD Stock $NaHCO_3$, ACS Grade (1.00 ml = 5000 ug as $CaCO_3$): Dissolve 0.8398 grams of $NaHCO_3$ in distilled water and dilute to 1 liter.

Therefore,

Normality of Acid = (2.65 g/L) (5mL) / (53.00) (11.55 mL)

= **0.02165 N**

B. CALCULATION OF ALKALINITY (for a 50 ml sample)

Total Alkalinity (as $CaCO_3$), mg/L = $M_{vol.}$ * N H_2SO_4 * DF * 1000

Where:

$M_{vol.}$ volume titrant used to reach pH 4.5, ml
N, Normality of H_2SO_4
DF, Dilution Factor = (50 ml) / (Vol. of Sample used)

Therefore,

Total Alkalinity (as $CaCO_3$), mg/L = (10.70) (0.02165 N) (1) * 1000

= 231.6550 mg**/L**

Reporting results in two significant figures,

= **230 mg/L** as CaCO3

Julia Ramit 6/12/2017

C. SPECIATED ALKALINITY:

Phenolphthalein Alkalinity

P alkalinity, mg/L as $CaCO_3$ = $P_{vol.}$ * N H_2SO_4 * DF * 1000

= (0) (0.02165 N) (1) * 1000

= **0**

Total Alkalinity

T alkalinity, mg/L as $CaCO_3$ = $M_{vol.}$ * N H_2SO_4 * DF * 1000

= (10.70 mL) (0.02165) (1) * 1000

= 231.6550 **mg/L** as CaCO3

Where:

$P_{vol.}$ - Volume titrant used to reach pH 8.3, ml
$M_{vol.}$ - Volume titrant used to reach pH 4.5, ml
N - Normality of H_2SO_4
DF - Dilution Factor = (50 ml) / (Vol. of Sample used)

Then OH, CO_3, HCO_3 alkalinities as $CaCO_3$ will be calculated as follows:

Result of Titration	**OH Alkalinity as $CaCO_3$**	**CO_3 Alkalinity as $CaCO_3$**	**HCO_3 Alkalinity as $CaCO_3$**
P = 0	0	0	T
P < ½ T	0	2P	T – 2P
P = ½ T	0	2P	0
P > ½ T	2P – T	2(T – P)	0
P = T	T	0	0

Therefore,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **231.6550 mg/L**

Reporting results in two significant figures,

OH Alkalinity as $CaCO_3$ = **0**

CO_3 Alkalinity as $CaCO_3$ = **0**

HCO_3 Alkalinity as $CaCO_3$ = **230 mg/L**

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

SAMPLE	PH SAMPLE	AMOUNT	V@8.3	VT TO 4.5	Sample Type
MB-1	5.15	50	0.00	0.050	MBLK
LCS-1	8.14	50	0.00	4.50	LCS
N024516-001C	7.50	50	0.00	10.70	SAMP
N024516-002C	7.44	50	0.00	7.00	SAMP
N024516-001CDUP	7.52	50	0.00	10.70	DUP
N024516-002CMS	7.71	50	0.00	11.30	MS
N024516-002CMSD	7.72	50	0.00	11.40	MSD

Standardization:		
Spike amt:	**5**	ml
Titrant used:	**11.55**	ml
N H2SO4	**0.02165**	Normal
Date Analyzed:	**6/8/17**	
Time:	**10:15 AM**	
Analyzed By:	**LSR**	
Sodium Carbonate:	**CINV-161205A**	
Sodium Bicarbonate:	**CINV-150601A**	
Sulfuric Acid:	**R170315B**	

Silica Ramit 6/12/2017

Date Analyzed:	6/8/17		Reagents:					Standardization:					P = 0
Time Started:	10:15 AM			Sodium Carbonate:		CINV-161205A			Spike amt:	5	mL		P < 1/2 T
Analyzed By:	LSR			Hydrochloric Acid:		0			Titrant used:	11.55	mL		P = 1/2 T
				Sulfuric Acid:		R170315B							P > 1/2 T
									N H2SO4	0.02165	N		P = T

Sample ID	Sample Vol/Wt.	Sample pH	Std. Code	Spike Amount	Spike Conc.	Normality, Titrant	Vol. Used to pH 8.3, ml.	Vol. Used pH 8.3 to 4.5, ml.	Total Vol. Used, ml.	DF (50ml/Vsamp.)	P Alkalinity	T Alkalinity	Comments
MB-1	50	5.15				0.02165	0.00	0.05	0.05	1	0.00	1.08	
LCS-1	50	8.14				0.02165	0.00	4.50	4.50	1	0.00	97.40	
N024516-001C	50	7.5				0.02165	0.00	10.70	10.70	1	0.00	231.60	
N024516-002C	50	7.44				0.02165	0.00	7.00	7.00	1	0.00	151.52	
N024516-001CDU	50	7.52				0.02165	0.00	10.70	10.70	1	0.00	231.60	
N024516-002CMS	50	7.71				0.02165	0.00	11.30	11.30	1	0.00	244.59	
N024516-002CMS	50	7.72				0.02165	0.00	11.40	11.40	1	0.00	246.75	

Silvia Ramit 6/12/2017

Speciated, Alkalinity as CaCO3

SM 2320B

Date Analyzed:	6/8/17
Time:	10:15 AM
Analyzed By:	LSR

SAMPLE ID	OH	CO3	HCO3	TOTAL	CHECK	COMMENT	REMARKS
MB-1	0.00	0.00	1.08	1.08	1.08		P = 0
LCS-1	0.00	0.00	97.40	97.40	97.40		P = 0
N024516-001C	0.00	0.00	231.60	231.60	231.60		P = 0
N024516-002C	0.00	0.00	151.52	151.52	151.52		P = 0
N024516-001CDUP	0.00	0.00	231.60	231.60	231.60		P = 0
N024516-002CMS	0.00	0.00	244.59	244.59	244.59		P = 0
N024516-002CMSD	0.00	0.00	246.75	246.75	246.75		P = 0

Julia Ramit 6/12/2017

Alkalinity Preparation and Runlog

Book #6

Matrix: H_2O

Date Extracted: ↓
Time Extracted: 6/8/17
Extracted By: LSR

Date Analyzed: 6/8/17
Time Analyzed: 1015
Analyzed By: LSR

Reagent Lot # / Reagent ID
Sodium Carbonate: CINV-161205A
Hydrochloric Acid: —
Sulfuric Acid: R170315B
Sodium Bicarbonate: CINV150601A

pH Meter CALIBRATION:
SLOPE: 96.1%
pH 7 - 7.02 - CINV 170125C
4 - 4.00 - 170125B
10 - 10.04 - 170331A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added	Spike Conc.	Norm. Titrant	Vol. At pH = 8.3	Vol. At pH = 4.5	Dilution (F/I)	Calculations	Comments
	STANDARDIZATION											
	#1	50mL	10.40	IWST170608A	5mL	0.05N	-	-	~~11.40~~ 11.60	50/50	N H_2SO_4 = (265g/L)(5mL) / (53)(V titrant)	= 0.021551724
	#2	↓	10.32	↓	↓	↓	-	-	11.50	↓		= 0.02173913
1)	UBLK	50mL	5.15	-	-	-	0.02165	0	0.05	50/50		Ave: 0.021645427
2)	LCS	↓	8.14	IWST170608B	1mL	0.05N	↓	0	4.50	↓		
3)	N024STL-001C	↓	7.50	-	-	-	↓	0	10.70	↓		
4)	2C	↓	7.44	-	-	-	↓	0	7.0	↓		
5)	1C DUP	↓	7.52	-	-	-	↓	0	10.70	↓		
6)	2C MS	↓	7.71	IWST170608B	1mL	0.05N	↓	0	11.30	↓		
7)	2C MSD	↓	7.72	↓	↓	↓	↓	0	11.40	↓		
8)												
9)												
10)												
11)												
12)												
13)												
14)												
15)												
16)				P = (V pH 8.3)(N H_2SO_4)(50, 100) / USX								
17)												
18)												
19)												
20)				T = (V pH 4.5)(N H_2SO_4)(50, 100) / USX								
	MS											
	MSD											
	LCS											

Julia Ramit 6/12/2017

EPA 300.0

IC Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

IC ARCUS
REV 2.0
011416

QC Batch Number: R115671
ASSET #: N024516

Instrument ID: IC-08
Analyst: RBA
Date Analyzed: 6/8/2017

Method:

[X] EPA 300.0
[ ] EPA 7199
[ ] EPA 218.6/EPA 218.7
[ ] EPA 218.6/EPA 218.7 LL
[ ] Others _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. ICAL before initial sample analysis and is not more than 4 weeks old.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995, r =0.999 (Cr6+))	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 injections and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value. (± 5% for EPA 218.6)	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Is the buffer less than MDL? If not, discontinue analysis. (Cr6+ only)			X			X
8. Do all calibration blanks (ICB and CCBs) meet criteria? (<1/2PQL for 300, <0.02 for Cr6+)	X			X		
9. Is low level check at PQL within ± 20% for 218.6/218.7/7199? ± 30% for 218.6/218.7LL?			X			X
Sample Information						
10. All samples are within linear range.	X			X		
11. All samples pH within 9.3-9.7 when analyzed?			X			X
12. Duplicate sample injections for every sample. (7199 only)			X			X
13. For Topock, matrix spike protocol performed on all samples? (Cr6+ only)			X			X
14. For Hinkley DOM samples, matrix spike protocol performed on all samples ? (Cr6+ only)			X			X
15. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			X
16. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			X
17. For samples that failed Cr vs Cr6+ criteria, is matrix spike protocol performed ?			X			X
18. For dilution and MS spike protocol, spike recovery within 90-110%? (Cr6+ only)			X			X
19. EPA 3060A digestion performed on solid samples (7199 only)			X			X
20. Are all peaks within RT window, ± 0.2 min?	X			X		
21. Are all samples analyzed within hold time?	X			X		
22. For Hinkley projects (DOM & ATU only), are samples with result ≤ 0.2 ug/L analyzed by low level method? (Cr6+ only)			X			X
QC Items						
23. Method blank values meets criteria. (<1/2 PQL for 300, <0.02 for Cr6+)	X			X		
24. LCS compounds are within control limits.	X			X		
25. MS/MSD, RPD's are within control limits.	X			X		
26. Soluble and Insoluble matrix spike within control limits (7199 solids only)			X			X
Raw Data and Miscellaneous Information						
27. Runlog complete and included in package.	X			X		
28. Extraction log complete and included in package (if applicable)			X			X
29. All manual integrations initialed, date and reasons included.	X			X		
30. Before and after manual integration chromatogram included in the package	X			X		
31. All samples and QC raw data present in package.	X			X		
Preliminary Report						
32. Does the raw data match the preliminary report?	X			X		
33. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X			X		
34 Is the QC summary report present and complete?	X			X		

Comments:

SECOND LEVEL REVIEW:

	Y	N	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct	X		
3. Is QC present and complete?	X		
4. Are analytical results correct? (dilutions,calculations)	X		
5. Is first level review correct and complete?	X		

1st Level Reviewer rba Date: 6/9/2017

2nd Level Reviewer 6/21/2017 Date: _____

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 300
TEST NAME: INORGANIC ANIONS BY IC
MATRIX: ~~WATER~~ Groundwater

FORMULA:

Calculate the Chloride concentration, in mg/L, in the orignal sample as follows:

Chloride, mg/L = A * DF

where:

A = mg/L, IC calculated concentration
DF = dilution factor

For **N024516-001C** concentration in mg/L is calculated as follows:

Chloride, mg/L = 5.8036 * 200

= 1160.72

Reporting result in two significant values,

Chloride, mg/L = 1200

rba 6/16/2017

ANALYSIS RUN LOG

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 11
Created: 5/22/2017 11:05:41 AM by IC-05
Last Update: 5/23/2017 4:14:27 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status	Inj. Date/Time
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 11:27:01 AM
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 11:42:19 AM
3	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 11:57:37 AM
4	Std - 0	Standard	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 12:49:52 PM
5	Std - 1	Standard	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 1:15:08 PM
6	Std - 2	Standard	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 1:30:26 PM
7	Std - 3	Standard	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 1:45:44 PM
8	Std - 4	Standard	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 2:01:02 PM
9	Std - 5	Standard	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 2:16:20 PM
10	ICV,ICV,1	Unknown	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 2:48:17 PM
11	ICB,ICB,1	Unknown	1000.0	Anions Default	Anions_170522	Finished	5/22/2017 3:03:35 PM

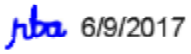
rba 5/24/2017

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 11
Created: 5/22/2017 11:05:41 AM by IC-05
Last Update: 5/23/2017 4:14:27 PM by IC-05

No.	Name	Comment
1	BLANK,BLANK,1	BLANK
2	BLANK,BLANK,1	BLANK
3	BLANK,BLANK,1	BLANK
4	Std - 0	iBLANK
5	Std - 1	STD-LOW
6	Std - 2	STD
7	Std - 3	STD
8	Std - 4	STD
9	Std - 5	STD-HIGH
10	ICV,ICV,1	ICV
11	ICB,ICB,1	ICB

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 70
Created: 6/8/2017 7:58:16 AM by IC-05
Last Update: 6/8/2017 3:41:07 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
1	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
2	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
3	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
4	Std - 0	Standard	1000.0	Anions Default	Anions_170522	Finished
5	Std - 1	Standard	1000.0	Anions Default	Anions_170522	Finished
6	Std - 2	Standard	1000.0	Anions Default	Anions_170522	Finished
7	Std - 3	Standard	1000.0	Anions Default	Anions_170522	Finished
8	Std - 4	Standard	1000.0	Anions Default	Anions_170522	Finished
9	Std - 5	Standard	1000.0	Anions Default	Anions_170522	Finished
10	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
11	CCV-1,CCV,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
12	CCB-1,CCB,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
13	MB-H2O,MBLK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
14	LCS-H2O,LCS,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
15	N024511-002C,SAMP,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
16	N024511-003C,SAMP,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
17	N024511-004C,SAMP,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
18	N024511-002C,SAMP,2	Unknown	1000.0	Anions Default	Anions_170522	Finished
19	N024511-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170522	Finished
20	N024511-003C,SAMP,20	Unknown	1000.0	Anions Default	Anions_170522	Finished
21	N024511-004C,SAMP,20	Unknown	1000.0	Anions Default	Anions_170522	Finished
22	N024511-003CDUP,DUP,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
23	CCV-2,CCV,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
24	CCB-2,CCB,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
25	N024511-003CMS,MS,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
26	N024511-003CMSD,MSD,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
27	N024511-003CMS,MS,2	Unknown	1000.0	Anions Default	Anions_170522	Finished
28	N024511-003CMSD,MSD,2	Unknown	1000.0	Anions Default	Anions_170522	Finished
29	N024453-007A,SAMP,200	Unknown	1000.0	Anions Default2	Anions_170522	Finished
30	N024453-009A,SAMP,1000	Unknown	1000.0	Anions Default2	Anions_170522	Finished
31	N024453-011A,SAMP,100	Unknown	1000.0	Anions Default2	Anions_170522	Finished
32	N024499-002B,SAMP,50	Unknown	1000.0	Anions Default	Anions_170522	Finished
33	N024516-001C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170522	Finished
34	N024516-002C,SAMP,50	Unknown	1000.0	Anions Default	Anions_170522	Finished
35	CCV-3,CCV,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
36	CCB-3,CCB,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
37	N024516-001CMS,MS,50	Unknown	1000.0	Anions Default	Anions_170522	Finished
38	N024516-001CMSD,MSD,50	Unknown	1000.0	Anions Default	Anions_170522	Finished
39	N024516-001CDUP,DUP,50	Unknown	1000.0	Anions Default	Anions_170522	Finished
40	N024516-001C,SAMP,200	Unknown	1000.0	Anions Default	Anions_170522	Finished
41	N024516-001CMS,MS,200	Unknown	1000.0	Anions Default	Anions_170522	Finished



Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 70
Created: 6/8/2017 7:58:16 AM by IC-05
Last Update: 6/8/2017 3:41:07 PM by IC-05

No.	Name	Inj. Date/Time	Comment
1	BLANK,BLANK,1	5/22/2017 11:27:01 AM	BLANK
2	BLANK,BLANK,1	5/22/2017 11:42:19 AM	BLANK
3	BLANK,BLANK,1	5/22/2017 11:57:37 AM	BLANK
4	Std - 0	5/22/2017 12:49:52 PM	iBLANK
5	Std - 1	5/22/2017 1:15:08 PM	STD-LOW
6	Std - 2	5/22/2017 1:30:26 PM	STD
7	Std - 3	5/22/2017 1:45:44 PM	STD
8	Std - 4	5/22/2017 2:01:02 PM	STD
9	Std - 5	5/22/2017 2:16:20 PM	STD-HIGH
10	BLANK,BLANK,1	6/8/2017 8:03:27 AM	BLANK
11	CCV-1,CCV,1	6/8/2017 8:18:46 AM	CCV
12	CCB-1,CCB,1	6/8/2017 8:34:04 AM	CCB
13	MB-H2O,MBLK,1	6/8/2017 8:49:21 AM	METHOD BLANK
14	LCS-H2O,LCS,1	6/8/2017 9:04:39 AM	LCS
15	N024511-002C,SAMP,1	6/8/2017 9:23:02 AM	SAMP,10mL
16	N024511-003C,SAMP,1	6/8/2017 9:38:20 AM	SAMP,10mL
17	N024511-004C,SAMP,1	6/8/2017 9:53:38 AM	SAMP,10mL
18	N024511-002C,SAMP,2	6/8/2017 10:13:11 AM	SAMP,5>10mL
19	N024511-002C,SAMP,50	6/8/2017 10:28:29 AM	SAMP,0.2>10mL
20	N024511-003C,SAMP,20	6/8/2017 10:43:47 AM	SAMP,0.5>10mL
21	N024511-004C,SAMP,20	6/8/2017 10:59:04 AM	SAMP,0.5>10mL
22	N024511-003CDUP,DUP,1	6/8/2017 11:14:22 AM	DUP,10mL
23	CCV-2,CCV,1	6/8/2017 11:29:40 AM	CCV
24	CCB-2,CCB,1	6/8/2017 11:44:58 AM	CCB
25	N024511-003CMS,MS,1	6/8/2017 12:00:16 PM	MS,10mL
26	N024511-003CMSD,MSD,1	6/8/2017 12:15:33 PM	MSD,10mL
27	N024511-003CMS,MS,2	6/8/2017 12:30:51 PM	MS,5>10mL
28	N024511-003CMSD,MSD,2	6/8/2017 12:46:09 PM	MSD,5>10mL
29	N024453-007A,SAMP,200	6/8/2017 1:01:27 PM	SAMP,0.05>10mL
30	N024453-009A,SAMP,1000	6/8/2017 1:23:44 PM	SAMP,0.01>10mL
31	N024453-011A,SAMP,100	6/8/2017 1:46:02 PM	SAMP,0.1>10mL
32	N024499-002B,SAMP,50	6/8/2017 2:08:20 PM	SAMP,0.2>10mL
33	N024516-001C,SAMP,50	6/8/2017 2:23:38 PM	SAMP,0.2>10mL
34	N024516-002C,SAMP,50	6/8/2017 2:38:56 PM	SAMP,0.2>10mL
35	CCV-3,CCV,1	6/8/2017 2:54:14 PM	CCV
36	CCB-3,CCB,1	6/8/2017 3:09:32 PM	CCB
37	N024516-001CMS,MS,50	6/8/2017 3:24:50 PM	MS,0.2>10mL
38	N024516-001CMSD,MSD,50	6/8/2017 3:40:08 PM	MSD,0.2>10mL
39	N024516-001CDUP,DUP,50	6/8/2017 3:55:26 PM	DUP,0.2>10mL
40	N024516-001C,SAMP,200	6/8/2017 4:10:45 PM	SAMP,0.05>10mL
41	N024516-001CMS,MS,200	6/8/2017 4:26:03 PM	MS,0.05>10mL

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 70
Created: 6/8/2017 7:58:16 AM by IC-05
Last Update: 6/8/2017 3:41:07 PM by IC-05

No.	Name	Type	Inj. Vol.	Program	Method	Status
42	N024516-001CMSD,MSD,200	Unknown	1000.0	Anions Default	Anions_170522	Finished
43	N024516-001CDUP,DUP,200	Unknown	1000.0	Anions Default	Anions_170522	Finished
44	N024516-002C,SAMP,500	Unknown	1000.0	Anions Default	Anions_170522	Finished
45	N024499-002B,SAMP,5	Unknown	1000.0	Anions Default	Anions_170522	Finished
46	N024499-002BDUP,DUP,5	Unknown	1000.0	Anions Default	Anions_170522	Finished
47	CCV-4,CCV,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
48	CCB-4,CCB,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
49	N024499-002BMS,MS,5	Unknown	1000.0	Anions Default	Anions_170522	Finished
50	N024499-002BMSD,MSD,5	Unknown	1000.0	Anions Default	Anions_170522	Finished
51	N024473-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_170522	Finished
52	N024474-001B,SAMP,5000	Unknown	1000.0	Anions Default	Anions_170522	Finished
53	N024474-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_170522	Finished
54	N024475-001B,SAMP,5000	Unknown	1000.0	Anions Default	Anions_170522	Finished
55	N024475-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_170522	Finished
56	N024476-001B,SAMP,20000	Unknown	1000.0	Anions Default	Anions_170522	Finished
57	N024476-001B,SAMP,500	Unknown	1000.0	Anions Default	Anions_170522	Finished
58	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
59	CCV-5,CCV,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
60	CCB-5,CCB,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
61	N024477-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_170522	Finished
62	N024478-001B,SAMP,5000	Unknown	1000.0	Anions Default	Anions_170522	Finished
63	N024478-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_170522	Finished
64	N024479-001B,SAMP,5000	Unknown	1000.0	Anions Default	Anions_170522	Finished
65	N024479-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_170522	Finished
66	N024480-001B,SAMP,10000	Unknown	1000.0	Anions Default	Anions_170522	Finished
67	N024480-001B,SAMP,200	Unknown	1000.0	Anions Default	Anions_170522	Finished
68	BLANK,BLANK,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
69	CCV-6,CCV,1	Unknown	1000.0	Anions Default	Anions_170522	Finished
70	CCB-6,CCB,1	Unknown	1000.0	Anions Default	Anions_170522	Finished

Title:
Datasource: D1NZHKQ1_local
Location: IC-08_ANIONS\2_Data\2016_Anions
Timebase: IC-08_ANIONS
#Samples: 70
Created: 6/8/2017 7:58:16 AM by IC-05
Last Update: 6/8/2017 3:41:07 PM by IC-05

No.	Name	Inj. Date/Time	Comment
42	N024516-001CMSD,MSD,200	6/8/2017 4:41:21 PM	MSD,0.05>10mL
43	N024516-001CDUP,DUP,200	6/8/2017 4:56:39 PM	DUP,0.05>10mL
44	N024516-002C,SAMP,500	6/8/2017 5:11:56 PM	SAMP,0.02>10mL
45	N024499-002B,SAMP,5	6/8/2017 5:27:15 PM	SAMP,2>10mL
46	N024499-002BDUP,DUP,5	6/8/2017 5:42:33 PM	DUP,2>10mL
47	CCV-4,CCV,1	6/8/2017 5:57:51 PM	CCV
48	CCB-4,CCB,1	6/8/2017 6:13:09 PM	CCB
49	N024499-002BMS,MS,5	6/8/2017 6:28:26 PM	MS,2>10mL
50	N024499-002BMSD,MSD,5	6/8/2017 6:43:44 PM	MSD,2>10mL
51	N024473-001B,SAMP,10000	6/8/2017 6:59:02 PM	SAMP,0.001>10mL
52	N024474-001B,SAMP,5000	6/8/2017 7:14:20 PM	SAMP,0.002>10mL
53	N024474-001B,SAMP,10000	6/8/2017 7:29:37 PM	SAMP,0.001>10mL
54	N024475-001B,SAMP,5000	6/8/2017 7:44:55 PM	SAMP,0.002>10mL
55	N024475-001B,SAMP,10000	6/8/2017 8:00:13 PM	SAMP,0.001>10mL
56	N024476-001B,SAMP,20000	6/8/2017 8:15:31 PM	SAMP,0.0005>10mL
57	N024476-001B,SAMP,500	6/8/2017 8:30:49 PM	SAMP,0.02>10mL
58	BLANK,BLANK,1	6/8/2017 8:46:07 PM	BLANK
59	CCV-5,CCV,1	6/8/2017 9:01:24 PM	CCV
60	CCB-5,CCB,1	6/8/2017 9:16:42 PM	CCB
61	N024477-001B,SAMP,10000	6/8/2017 9:32:00 PM	SAMP,0.001>10mL
62	N024478-001B,SAMP,5000	6/8/2017 9:47:18 PM	SAMP,0.002>10mL
63	N024478-001B,SAMP,10000	6/8/2017 10:02:36 PM	SAMP,0.001>10mL
64	N024479-001B,SAMP,5000	6/8/2017 10:17:53 PM	SAMP,0.002>10mL
65	N024479-001B,SAMP,10000	6/8/2017 10:33:11 PM	SAMP,0.001>10mL
66	N024480-001B,SAMP,10000	6/8/2017 10:48:29 PM	SAMP,0.001>10mL
67	N024480-001B,SAMP,200	6/8/2017 11:03:47 PM	SAMP,0.05>10mL
68	BLANK,BLANK,1	6/8/2017 11:19:05 PM	BLANK
69	CCV-6,CCV,1	6/8/2017 11:34:23 PM	CCV
70	CCB-6,CCB,1	6/8/2017 11:49:41 PM	CCB

Chromeleon © Dionex Corporation, Version 6.80 SR10 Build 2818 (166959)

INITIAL CALIBRATION DATA SUMMARY

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 5/22/2017

Initial Calibration:

Chloride	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	1	2	5	10	R^2
Area,mAU*min	0.0000	0.0732	0.1461	0.2950	0.7548	1.5776	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817B

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

(EPA 300) - INITIAL CALIBRATION

Instrument ID: IC-08
Date Calibrated: 5/22/2017

Initial Calibration:

Sulfate	STD0	STD1	STD2	STD3	STD4	STD5	
COMPOUND, in ug/L	0	0.5	2	4	10	20	R^2
Area,mAU*min	0.0000	0.0565	0.2210	0.4433	1.1315	2.3448	1.000

	Stock
Standard Concentration:	1000000 PPB
Standard ID:	ISST160817G

Calibration Acceptance Criteria: > 0.995 Correlation

* Please note that the instrument printout for Area were represented in three decimal places. The exact values are represented in the ICAL summary for calculation purposes.

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **ICV** SampType: **ICV** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **ICV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **5/22/2017** SeqNo: **2663233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	2.043	0.50	2.000	0	102	90	110				

Sample ID: **CCV-1** SampType: **CCV** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.970	0.50	2.000	0	98.5	90	110				

Sample ID: **CCV-2** SampType: **CCV** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663242**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.974	0.50	2.000	0	98.7	90	110				

Sample ID: **CCV-3** SampType: **CCV** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.975	0.50	2.000	0	98.7	90	110				

Sample ID: **CCV-4** SampType: **CCV** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.984	0.50	2.000	0	99.2	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **CCV-5** SampType: **CCV** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663260**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.982	0.50	2.000	0	99.1	90	110				

Sample ID: **CCV-6** SampType: **CCV** TestCode: **300_W_CLPG** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663266**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	1.981	0.50	2.000	0	99.0	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **ICV** SampType: **ICV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **ICV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **5/22/2017** SeqNo: **2663301**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.879	0.50	4.000	0	97.0	90	110				

Sample ID: **CCV-1** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663303**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.846	0.50	4.000	0	96.1	90	110				

Sample ID: **CCV-2** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663310**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.881	0.50	4.000	0	97.0	90	110				

Sample ID: **CCV-3** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663315**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.866	0.50	4.000	0	96.6	90	110				

Sample ID: **CCV-4** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663320**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.881	0.50	4.000	0	97.0	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **CCV-5** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663326**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.889	0.50	4.000	0	97.2	90	110				

Sample ID: **CCV-6** SampType: **CCV** TestCode: **300_W_SO4P** Units: **mg/L** Prep Date: RunNo: **115671**
Client ID: **CCV** Batch ID: **R115671** TestNo: **EPA 300.0** Analysis Date: **6/8/2017** SeqNo: **2663332**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	3.891	0.50	4.000	0	97.3	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
  Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **ICB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **5/22/2017**	SeqNo: **2663234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.117	0.50									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663243**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.114	0.50									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.115	0.50									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.116	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_CLPGE

Sample ID: **CCB-5**	SampType: **CCB**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663261**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	ND	0.50									

Sample ID: **CCB-6**	SampType: **CCB**	TestCode: **300_W_CLPG**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663267**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chloride	0.132	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **ICB**	SampType: **ICB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **ICB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **5/22/2017**	SeqNo: **2663302**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: **CCB-1**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663304**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.176	0.50									

Sample ID: **CCB-2**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663311**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: **CCB-3**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663316**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: **CCB-4**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663321**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.174	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 300_W_SO4PGE

Sample ID: **CCB-5**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663327**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	ND	0.50									

Sample ID: **CCB-6**	SampType: **CCB**	TestCode: **300_W_SO4P**	Units: **mg/L**	Prep Date:	RunNo: **115671**
Client ID: **CCB**	Batch ID: **R115671**	TestNo: **EPA 300.0**		Analysis Date: **6/8/2017**	SeqNo: **2663333**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sulfate	0.170	0.50									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

RETENTION TIME SUMMARY

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 6/8/2017

Sample Name		Retention Time	Evaluation
CCV-1	Sulfate	8.554	
CCV-2	Sulfate	8.550	
CCV-3	Sulfate	8.547	
CCV-4	Sulfate	8.574	
CCV-5	Sulfate	8.583	
CCV-6	Sulfate	8.587	
	Average	8.566	
	Applied RT Window	8.366 - 8.766	
MB-R115671_SO4	Sulfate	8.527	PASS
LCS-R115671_SO4	Sulfate	8.560	PASS
N024516-001C	Sulfate	8.554	PASS
N024516-002C	Sulfate	8.554	PASS
N024516-001CMS	Sulfate	8.553	PASS
N024516-001CMSD	Sulfate	8.550	PASS
N024516-001CDUP	Sulfate	8.547	PASS

RETENTION TIME (RT) SUMMARY

Instrument ID: IC-08

Analytical Sequence

Date Analyzed: 6/8/2017

Sample Name	Retention Time		Evaluation
CCV-1	Chloride	3.940	
CCV-2	Chloride	3.937	
CCV-3	Chloride	3.937	
CCV-4	Chloride	3.937	
CCV-5	Chloride	3.937	
CCV-6	Chloride	3.937	
	Average	3.938	
	Applied RT Window	3.738 - 4.138	
MB-R115671_~~SO4~~ Cl	Chloride	3.930	PASS
LCS-R115671_~~SO4~~ Cl	Chloride	3.937	PASS
N024516-001C	Chloride	3.937	PASS
N024516-001CMS	Chloride	3.940	PASS
N024516-001CMSD	Chloride	3.937	PASS
N024516-001CDUP	Chloride	3.937	PASS
N024516-002C	Chloride	3.938	PASS

6/22/2017

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography (PG&E)**
Method Number: EPA 300.0
Analysis Date(s): 2/22/2016, 2/23/2016
Analyst/Technician: Quennie Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.072	0.081	0.065	0.068	0.074	0.069	0.066	0.020	0.0055	**0.0174**	0.035	0.10
Chloride	0.205	0.218	0.212	0.218	0.208	0.202	0.208	0.10	0.0062	**0.0194**	0.050	0.50
Nitrite	0.045	0.058	0.043	0.046	0.050	0.055	0.040	0.020	0.0065	**0.0205**	0.030	0.50
Bromide	0.073	0.076	0.085	0.094	0.073	0.070	0.058	0.040	0.0114	**0.0359**	0.100	0.20
Nitrate	0.052	0.063	0.062	0.061	0.058	0.056	0.063	0.020	0.0042	**0.0130**	0.030	0.50
Phosphate	0.057	0.054	0.074	0.045	0.048	0.047	0.063	0.050	0.0103	**0.0325**	0.050	0.10
Sulfate	0.285	0.238	0.238	0.264	0.249	0.241	0.284	0.10	0.0208	**0.0655**	0.150	0.50

MDL/LOD & PQL Verification 2016 (2nd Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)**
Method Number: EPA Method 300.0
Analysis Date(s): 5/26/2016
Analyst: Quennie B. Manimtim

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-02**

Compound	MDL	LOD Spike Conc., mg/L	LOD actual Conc., mg/L	PQL Spike Conc., mg/L	PQL actual Conc., mg/L	%Recovery
Fluoride	**0.0174**	0.035	0.072	0.100	0.122	**122**
Chloride	**0.0194**	0.050	0.146	0.500	0.538	**108**
Nitrite	**0.0205**	0.030	0.063	0.050	0.060	**120**
Bromide	**0.0359**	0.100	0.077	0.200	0.239	**120**
Nitrate	**0.0130**	0.030	0.061	0.050	0.066	**132**
Phosphate	**0.0325**	0.050	0.074	0.100	0.132	**132**
Sulfate	**0.0655**	0.150	0.269	0.500	0.662	**132**

METHOD DETECTION LIMIT 2016

Method Name: **INORGANIC IONS by Ion Chromatography**
Method Number: EPA 300.0
Analysis Date(s): 9/19/2016 , 9/20/2016
Analyst/Technician: Ria Abes

Matrix: **WATER**
Unit: mg/L

Instrument Name: **IC-08**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	LOD	PQL
Fluoride	0.048	0.050	0.049	0.047	0.047	0.048	0.048	0.020	0.0011	**0.0034**	0.010	0.10
Chloride	0.217	0.214	0.214	0.214	0.215	0.216	0.214	0.025	0.0011	**0.0036**	0.010	0.50
Nitrite	0.044	0.046	0.045	0.044	0.045	0.044	0.044	0.020	0.0010	**0.0031**	0.010	0.05
Bromide	0.051	0.049	0.051	0.049	0.050	0.049	0.057	0.040	0.0029	**0.0090**	0.020	0.20
Nitrate	0.049	0.048	0.047	0.048	0.061	0.047	0.047	0.020	0.0049	**0.0154**	0.030	0.05
Phosphate	0.063	0.058	0.061	0.058	0.055	0.059	0.060	0.040	0.0025	**0.0080**	0.020	0.10
Sulfate	0.290	0.286	0.281	0.285	0.292	0.286	0.281	0.050	0.0041	**0.0129**	0.025	0.50

MDL/LOD & PQL Verification 2016 (4th Quarter)

Method Name: **Inorganic Ions by Ion Chromatography (Low Level)** Matrix: **WATER**
Method Number: EPA Method 300.0 Unit: mg/L
Analysis Date(s): 12/5/2016
Analyst: Ria B. Abes

Instrument Name: **IC-08**

Compound	MDL	LOD Spike Conc., mg/L	LOD Actual Conc., mg/L	PQL Spike Conc., mg/L	PQL Actual Conc., mg/L	%Recovery
Fluoride	**0.0034**	0.010	0.025	0.10	0.1029	**103**
Chloride	**0.0036**	0.010	0.120	0.50	0.5745	**115**
Nitrite	**0.0031**	0.010	0.028	0.05	0.0656	**131**
Bromide	**0.0090**	0.020	0.025	0.20	0.1962	**98**
Nitrate	**0.0154**	0.030	0.056	0.05	0.0744	**149**
Phosphate	**0.0080**	0.020	0.023	0.10	0.1004	**100**
Sulfate	**0.0129**	0.025	0.254	0.50	0.688	**138**

SM 3500-Cr B

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115875 **Analyst:** QBM

ASSET #: N024516 **Date Analyzed:** 6/20/2017

Method: 3500

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			x		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			x		
3. ICV within ± 15% of expected value.	X			x		
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X			x		
5. CCV within ± 15% of expected value.	X			x		
6. Calibration blanks run after ICV and CCV?	X			x		
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			x		
Sample Information						
8. All samples are within linear range.	X			x		
9. Are all samples analyzed within hold time.	X			x		
QC Items						
10. Method blank values are below the PQL .	X			x		
11. LCS compounds within control limits.	X			x		
12. MS/MSD, RPD's are within control limits	X			x		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			x
14. Runlog complete and included in package.	X			x		
15. Spectrophotometer tape included (Spec work only)	X			x		
16. Digestion log complete and included in package (if applicable)			X			x
Preliminary Report						
17. Does the raw data match the preliminary report?	X			x		
18. Are analytical results correct?	X			x		
19. Is the QC summary report present and complete?	X			x		

Comments:

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 6/21/2017 Date:

2nd Level Reviewer 6/21/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: SM 3500-Cr B
TEST NAME: Hexavalent Chromium by Colorimetric Method
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Hexavalent Chromium concentration, in ug/L, in the original sample as follows:

Hexavalent Chromium, ug/L = A * DF

Where:

A= ug/L, UV-VIS Hexavalent Chromium calculated concentration

DF= dilution factor

For **N024516-002A,** concentration in ug/L is calculated as follows:

Hexavalent Chromium, ug/L = 110.69 * 5

= 553.45 ug/L

Reporting result in 2 significant figures,

Hexavalent Chromium, ug/L = 550

6/21/2017

INITIAL CALIBRATION DATA SUMMARY

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	6/20/2017
Organisation	(None Entered)	Time of Report	6:43:01
Information	(None Entered)		

Calibration - EPA 3500_CRB_06202017.fqc

Operator Name	(None Entered)
Instrument ID	152119

Calibration Method - EPA 3500_CRB_06202017.fqc

Description	Hexavalent Chromium by EPA 3500 (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	6/20/2018
Method Status	Unlocked		

Standards Table - EPA 3500_CRB_06202017.fqc

Standard	Conc.	Use	540.0nm	Errors
Standard01	10.000	Yes	0.008	None
Standard02	50.000	Yes	0.043	None
Standard03	100.000	Yes	0.085	None
Standard04	250.000	Yes	0.216	None
Standard05	500.000	Yes	0.420	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

Errors Key

None	: No Errors Detected
I	: Invalid Data

Calibration Line / Curve Statistics

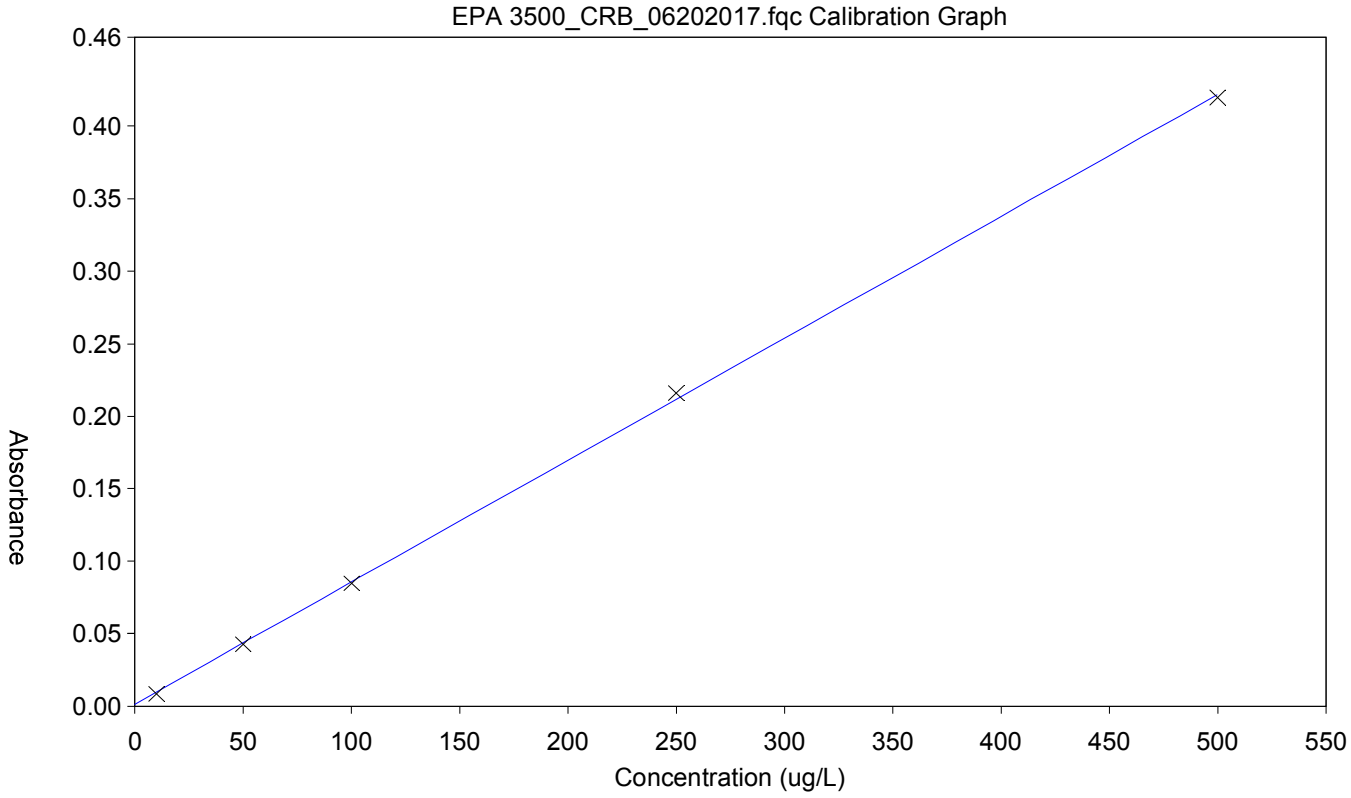
Equation	A = 0.0008 x Conc + 0.0013
Selected Fit	Linear
Coefficient	0.999763

THERMO SPECTRONIC ~ VISION32 SOFTWARE V1.25

Operator Name	(None Entered)		
Department	(None Entered)	Date of Report	6/20/2017
Organisation	(None Entered)	Time of Report	6:43:01
Information	(None Entered)		

Sum of Residuals (<0.0001)

Calibration Graph



ICAL/CCV: IWST170620A
ICV/LCS/MS/MSD: ISST170620B
10%H2SO4: R160920A
1,5-Diphenylcarbazide Solution: R170620B

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: n024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **115875**
Client ID: **CCV**	Batch ID: **R115875**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/20/2017**	SeqNo: **2670864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	100.932	10	100.0	0	101	90	110				

Sample ID **ICV**	SampType: **ICV**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **115875**
Client ID: **ICV**	Batch ID: **R115875**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/20/2017**	SeqNo: **2670866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	259.442	10	250.0	0	104	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: n024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 3500_CrBPGE

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **115875**
Client ID: **CCB**	Batch ID: **R115875**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/20/2017**	SeqNo: **2670863**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	-0.243	10									

Sample ID **ICB**	SampType: **ICB**	TestCode: **3500_CrBPG**	Units: **µg/L**	Prep Date:	RunNo: **115875**
Client ID: **ICB**	Batch ID: **R115875**	TestNo: **SM 3500-Cr B**		Analysis Date: **6/20/2017**	SeqNo: **2670865**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium, Hexavalent	-0.335	10									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

Calibration Method - EPA 3500_CRB_06202017.fqc 6/20/2017 18:43

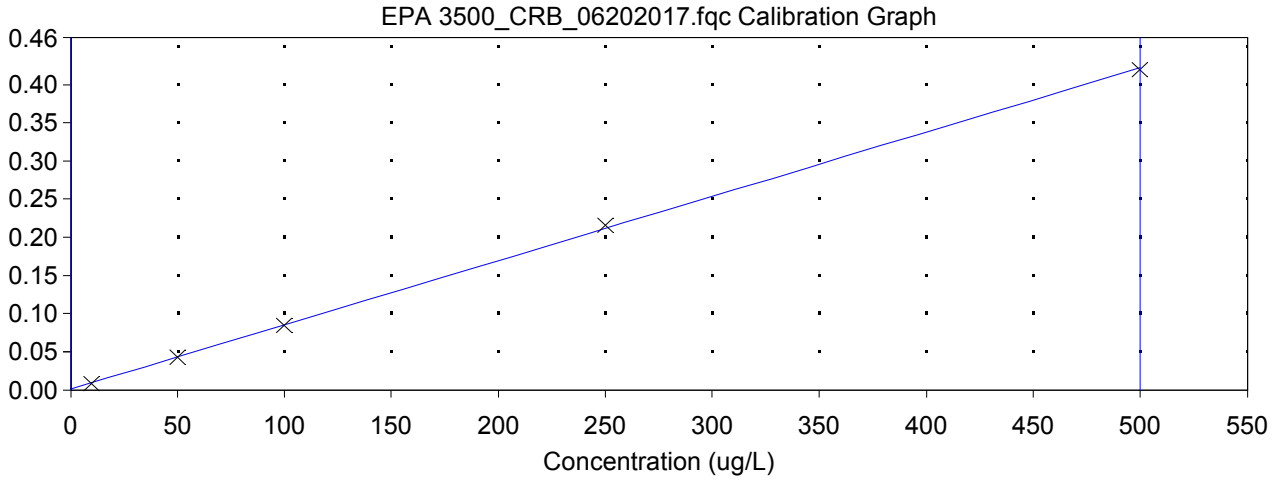
Description	Hexavalent Chromium by EPA 3500 (Colorimetric)		
Operator Name	QBM		
Quant Mode	Single Lambda	Standards	5
Lambda 1	540.0 nm	Replicates	1
Lambda 2	Off	Initial Curve Fit	Linear
Lambda 3	Off	Conc. Units	ug/L
Integ. Time	00:00:01	Conc. Dec. Places	3
Lamp Change	325.0 nm	Flier Detection	Off
Bandwidth	2.0 nm	Valid Until	6/20/2018
Method Status	Unlocked		

Calibration Line / Curve Statistics

Equation	A = 0.0008 x Conc + 0.0013
Selected Fit	Linear
Coefficient	0.999763
Sum of Residuals	(<0.0001)

Standard	Conc.	Use	540.0nm	Errors
Standard01	10.000	Yes	0.008	None
Standard02	50.000	Yes	0.043	None
Standard03	100.000	Yes	0.085	None
Standard04	250.000	Yes	0.216	None
Standard05	500.000	Yes	0.420	None

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.



Batch : Hexavalent Chromium_06202017001.qre

	Sample	540.0nm	Conc.	Errors
1	,ICV,ICV,1,	0.219	259.442	None
2	,ICB,ICB,1,	0.001	-0.335	I
3	,MB-,MBLK,1,	0.001	-0.312	I
4	,LCS-,LCS,1,	0.086	100.420	None
5	,N024516-002A,SAMP,5,	0.094	110.690	None
6	,N024516-002ADUP,DUP,5,	0.094	110.591	None
7	,N024516-002AMS,MS,5,	0.178	210.408	None
8	,N024516-002AMSD,MSD,5,	0.177	209.468	None
9	,CCV-1,CCV,1,	0.086	100.932	None
10	,CCB-1,CCB,1,	0.001	-0.243	I

All calculations have been performed to double precision as defined by ANSI/IEEE STD 754-1985 but have been rounded for display purposes.

ICAL/CCV: IWST170620A
ICV/LCS/MS/MSD: ISST170620B
10%H2SO4: R160920A
1,5-Diphenylcarbazide Solution: R170620B

6/21/2017

SM 4500-NO3F

Wet Chemistry Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: R115849, R115850 **Analyst:** REB

ASSET #: N024516 **Date Analyzed:** 6/19/2017

Method: 4500_NO3

Initial Calibration	1st Level Review Y	N	N/A	2nd Level Review Y	N	N/A
1. ICAL before initial sample analysis or every 24 hrs.	X			X		
2. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X			X		
3. ICV within ± 10% of expected value.	X			X		
Continuing Calibration						
4. CCV after every 10 samples and at the end of analysis sequence.	X			X		
5. CCV within ± 10% of expected value.	X			X		
6. Calibration blanks run after ICV and CCV?	X			X		
7. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X			X		
Sample Information						
8. All samples are within linear range.	X			X		
9. Are all samples analyzed within hold time.	X			X		
QC Items						
10. Method blank values are below the PQL .	X			X		
11. LCS compounds within control limits.	X			X		
12. MS/MSD, RPD's are within control limits	X			X		
Raw Data and Miscellaneous Information						
13. Are Non-Conformances documented			X			X
14. Runlog complete and included in package.	X			X		
15. Spectrophotometer tape included (Spec work only)			X			X
16. Digestion log complete and included in package (if applicable)			X			X
Preliminary Report						
17. Does the raw data match the preliminary report?	X			X		
18. Are analytical results correct?	X			X		
19. Is the QC summary report present and complete?	X			X		

Comments:

% Rec of LCS failed, high bias in R115849. However, reported samples are ND.

SECOND LEVEL REVIEW:

	Yes	No	N/A
1. All assigned sample(s) analyzed	X		
2. Matrix / units correct	X		
3. Does batch meet QC requirements?	X		
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)	X		
5. Is first level review correct and complete?	X		

1st Level Reviewer RB 06/21/17 Date:

2nd Level Reviewer 2 6/21/2017 Date:

SAMPLE CALCULATION

Sample Calculation

METHOD: EPA 4500NO3F
TEST NAME: Nitrate/Nitrite-N by Automated Cadmium Reduction
MATRIX: ~~Water~~ Groundwater

FORMULA:

Calculate the Nitrate/Nitrite-N concentration, in mg/L, in the original sample as follows:

Nitrate/Nitrite-N, mg/L = A * DF

where:

A = mg/L, Nitrate/Nitrite-N instrument calculated concentration
DF = dilution factor

For **N024516-002D** concentration in mg/L is calculated as follows:

Nitrate/Nitrite-N, mg/L = 0.5675*5

= 2.8375 mg/L

Reporting results in two significant figures:
Nitrate/Nitrite-N, mg/L = 2.8

RB 06/21/17

INITIAL CALIBRATION DATA SUMMARY

EPA 353.2 NO3 as N (NO3CD) - Endpoint

General setup

Measuring unit	**ppm**
Number of decimals	4
Stabilization time (sec)	26
Measurement time (sec)	3
Sample volume (µl)	450
Filter	546
Reagent prime	No
CD Reduction	Yes

Limits and dilution

Low level	**-0.2**
High level	4
Max linearity	4
Blank min	0
Blank max	0.049
Postdilution factor %	10
Factor Calculations	No

Washes

Number of final washes	6
Wash every	R1, R2

O.D.Corrections

Carry Over	**No**
Carry Over value	0.0000
Blank	No
Gain	No

Reagents

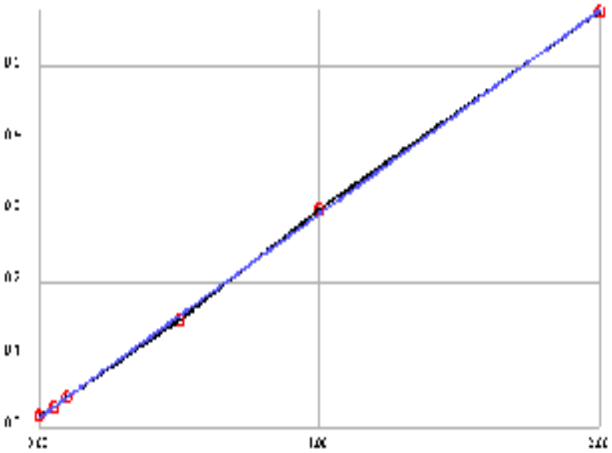
N.	Volume (µl)	Incubation time (sec)
1	200	102
2	300	663
3	0	0

QC

N.	Value	Tolerance
1	1	0.1

Calibration

Curve type	Linear (Calibrants)
Curve forced to zero	No
Blank inclusion	No



Formula	y = 0.2815x + 0.0137
Correlation	.999823

Calibrant	Energy	Set	Conc
1	0.0151	0.0000	0.0049
2	0.0281	0.0500	0.0511
3	0.0418	0.1000	0.0997
4	0.1481	0.5000	0.4773
5	0.3016	1.0000	1.0226
6	0.5752	2.0000	1.9944

Notes:

2% CuSO4- R170615A
R1 Buffer- R170615B
R2 Coloring reagent- R170619B

STD 1°- ISST160817E
STD 2°- ISST170419E

06/20/17

INITIAL CALIBRATION AND CONTINUING CALIBRATON VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115849**
Client ID: **ICV**	Batch ID: **R115849**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669854**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115849**
Client ID: **CCV**	Batch ID: **R115849**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669864**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.529	0.050	0.5000	0	106	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115849**
Client ID: **CCV**	Batch ID: **R115849**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669876**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.508	0.050	0.5000	0	102	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICV**	SampType: **ICV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115850**
Client ID: **ICV**	Batch ID: **R115850**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669880**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.537	0.050	0.5000	0	107	90	110				

Sample ID **CCV-1**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115850**
Client ID: **CCV**	Batch ID: **R115850**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669882**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.474	0.050	0.5000	0	94.8	90	110				

Sample ID **CCV-2**	SampType: **CCV**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115850**
Client ID: **CCV**	Batch ID: **R115850**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669895**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	0.454	0.050	0.5000	0	90.8	90	110				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INITIAL CALIBRATION AND CONTINUING CALIBRATON BLANK SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115849**
Client ID: **ICB**	Batch ID: **R115849**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669855**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115849**
Client ID: **CCB**	Batch ID: **R115849**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669866**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115849**
Client ID: **CCB**	Batch ID: **R115849**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669879**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 4500N03F_W

Sample ID **ICB**	SampType: **ICB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115850**
Client ID: **ICB**	Batch ID: **R115850**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669881**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-1**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115850**
Client ID: **CCB**	Batch ID: **R115850**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669884**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Sample ID **CCB-2**	SampType: **CCB**	TestCode: **4500N03F_W**	Units: **mg/L**	Prep Date:	RunNo: **115850**
Client ID: **CCB**	Batch ID: **R115850**	TestNo: **SM4500-NO3**		Analysis Date: **6/19/2017**	SeqNo: **2669897**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate/Nitrite as N	ND	0.050									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

LOGBOOK DATA, QUANTITATION REPORT and/or SPECTRA

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Time start: 06-19-2017 10:23
Time end: 06-19-2017 12:47

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	12:15:05	0.0181		0.0188
2	<BLANK>	12:16:00	0.0163		0.0183
3	<CAL1>	12:17:00	0.0049	[0]	0.0151
4	<CAL2>	12:17:55	0.0511	[0.05]	0.0281
5	<CAL3>	12:18:50	0.0997	[0.1]	0.0418
6	<CAL4>	12:19:51	0.4773	[0.5]	0.1481
7	<CAL5>	12:20:45	1.0226	[1]	0.3016
8	<CAL6>	12:21:41	1.9944	[2]	0.5752
9	,BLANK,BLANK,1,	12:22:42	0.0390		0.0247
10	,ICV,ICV,1,	12:23:36	0.5370		0.1649
11	,ICB,ICB,1,	12:24:38	0.0166		0.0184
12	,MB-H2O,MBLK,1,	12:25:33	0.0074		0.0158
13	,LCS-H2O,LCS,1,	12:26:28	0.7686		0.2301
14	,N024499-002E,SAMP,5,	12:27:28	0.6318		0.1916
15	,N024499-002EDUP,DUP,5,	12:28:24	0.6446		0.1952
16	,N024499-002EMS,MS,5,	12:29:19	1.1011		0.3237
17	,N024499-002EMSD,MSD,5,	12:30:21	1.1007		0.3236
18	,N024516-001D,SAMP,1,	12:31:15	0.0426		0.0257
19	,N024516-002D,SAMP,5,	12:31:58	0.6624		0.2002
20	,BLANK,	12:32:46	0.0202		0.0194
21	,BLANK,	12:33:36	0.0113		0.0169
22	,CCV-1,CCV,1,	12:34:19	0.5288		0.1626
23	,CCB-1,CCB,1,	12:35:01	0.0152		0.0180
24	,N024473-001H,SAMP,100,	12:35:50	0.0074		0.0158
25	,N024474-001H,SAMP,100,	12:36:32	0.0131		0.0174
26	,N024475-001H,SAMP,200,	12:37:15	0.0500		0.0278

RB 06/20/17

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
27	,N024476-001H,SAMP,100,	12:38:03	0.0248		0.0207
28	,N024477-001H,SAMP,100,	12:38:46	0.0330		0.0230
29	,N024478-001H,SAMP,100,	12:39:36	0.0252		0.0208
30	,N024479-001H,SAMP,100,	12:40:17	0.0248		0.0207
31	,N024480-001H,SAMP,50,	12:41:01	0.0092		0.0163
32	,N024535-001H,SAMP,500,	12:41:49	0.8737		0.2597
33	,BLANK,	12:42:32	0.0383		0.0245
34	,CCV-2,CCV,1,	12:43:20	0.5079		0.1567
35	,CCV-2,CCV,1,	12:44:03	0.5189		0.1598
36	,CCV-2,CCV,1,	12:44:45	0.5189		0.1598
37	,CCB-2,CCB,1,	12:45:34	0.0092		0.0163

06/20/17

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Time start: 06-19-2017 15:55
Time end: 06-19-2017 17:06

			EPA 353.2 NO3 as N		
			ppm	Flags	OD
1	<BLANK>	16:52:53	0.0099		0.0165
2	,CCV,CCV,1,	16:53:42	0.4741		0.1472
3	,CCB,CCB,1,	16:54:24	0.0106		0.0167
4	,MB-H2O,MBLK,1,	16:55:07	0.0067		0.0156
5	,LCS-H2O,LCS,1,	16:55:55	0.4919		0.1522
6	,N024516-002D,SAMP,5,	16:56:38	0.5675		0.1735
7	,N024516-002DDUP,DUP,5,	16:57:21	0.5892		0.1796
8	,N024516-002DMS,MS,5,	16:58:09	0.9760		0.2885
9	,N024516-002DMSD,MSD,5,	16:58:52	1.0190		0.3006
10	,N024499-002E,SAMP,5,	16:59:40	0.5953		0.1813
11	,N024475-001H,SAMP,100,	17:00:24	0.0710		0.0337
12	,N024535-001H,SAMP,500,	17:01:11	0.7775		0.2326
13	,BLANK,	17:01:55	0.0234		0.0203
14	,CCV-2,CCV,1,	17:02:38	0.4542		0.1416
15	,CCV-2,CCV,1,	17:03:26	0.4937		0.1527
16	,CCB-2,CCB,1,	17:04:09	0.0120		0.0171

RB 06/20/17

Nitrate/Nitrite as N by Cadmium Reduction Preparation and Runlog

Matrix:

Method: SM 4500-NO3-F/ EPA 353.2
Insturument: Easy Chem Analyzer

Date Analyzed: 06/19/17
Time Analyzed: 10:23 AM
Analyzed By: REB

Reagent ID #
Ammonium Chloride reagent/Buffer: R170615B
Color reagent: R170619B
2% Copper Sulfate: R170615A
Ammonium Hydroxide: CINV-170424A

	Sample ID.	Sample Wt./Vol.	Sample pH	Std Code	Spike Amt Added (mL)	Spike Conc.(PPM)	Final Volume (mL)	Dilution (F/I)	Reading & Calculations (mg/L)
1)	N024473-001H		8.53						
2)	N024474-001H		5.63						
3)	N024475-001H		9.31 *						
4)	N024476-001H		8.91						
5)	N024477-001H		5.43						
6)	N024478-001H		7.75						
7)	N024479-001H		8.97						
8)	N024480-001H		8.19						
9)	N024499-002E		8.94						
10)	N024516-001D		7.94						
11)	N024516-002D		7.56						
12)	N024535-001H		6.25						
13)									
14)									
15)									
16)									
17)									
18)									
19)									
20)									
21)									
22)									
23)									

*pH cannot be adjusted to <9, sample was analyzed with dilution, pH of diluted sample was within acceptable range.

Advanced Technology Laboratories, Inc.
Book # 1

EPA 6010B
Dissolved

Metals Technical Batch Review Checklist (CH2MHILL)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62508
ASSET #: N024516

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 6/13/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS Only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12. Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.		X				
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20 For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Ca in N024516-001B PS/MS failed. However, LCS passed criteria.

Dilution test failed for Mg. However, LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 6/16/2017 Date: —

2nd Level Reviewer 6/16/2017 Date: —

Metals Technical Batch Review Checklist (CH2MHILL)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62508
ASSET #: N024516

Instrument ID: ICP-02
Analyst: CEI
Date Analyzed: 6/15/2017

Method:

[X] EPA 6010B / 200.7
[ ] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS Only)			X			
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12. Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?			X			
19. For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?			X			
20 For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits		X				
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

%Rec of Na in N024516-002B PS/MS/MSD failed. However, LCS passed criteria.

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer _____ 6/16/2017 Date: _____

2nd Level Reviewer _____ 6/16/2017 Date: _____

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6010B
TEST NAME: Heavy Metals by ICP
MATRIX: Groundwater

FORMULA:

Calculate the Calcium concentration, in ug/L , in the original sample as follows:

Calcium , ug/L = A * DF * PF *CF

where:

A = mg/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL
CF= Conversion Factor from mg/L to ug/L, 1000

For Sample **N024516-001B** , the concentration ir ug/L is calculated as follows:

Calcium , ug/L = 159.566 * 1 * (25/25) * 1000

Calcium , ug/L = 159566

Reporting results in two significant figures,

Calcium , ug/L = 160000

% RSD SUMMARY

RSD SUMMARY: 170613B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Ca	0	10.41	15	PASS
Standard1	ICAL	1	Ca	0.2	5.91	15	PASS
Standard2	ICAL	1	Ca	1	1.62	15	PASS
Standard3	ICAL	1	Ca	2	1.36	15	PASS
Standard4	ICAL	1	Ca	5	1.11	15	PASS
Standard5	ICAL	1	Ca	7.5	0.62	15	PASS
Standard6	ICAL	1	Ca	10	85.085	15	NR!
Standard6	ICAL	1	Ca	10	1.7	15	PASS
Standard7	ICAL	1	Ca	20	0.53	15	PASS
ICV	ICV	1	Ca	10.069	0.37	15	PASS
ICB	ICB	1	Ca	-0.034	119.18	15	<PQL
LLICV1	CCV1	1	Ca	0.19	6.51	20	PASS
ICSA1	ICSA	1	Ca	512.3	0.98	15	PASS
ICSAB1	ICSAB	1	Ca	558.66	0.32	15	PASS
MB-62508	MBLK	1	Ca	0.0079	196.18	15	<PQL
LCS1-62508	LCS	1	Ca	10.61	0.79	15	PASS
N024516-001B	SAMP	1	Ca	159.57	0.37	15	PASS
CCV1	CCV	1	Ca	10.52	0.65	15	PASS
CCB1	CCB	1	Ca	0.0025	1540.99	15	<PQL
N024516-001B	SAMP	5	Ca	31.82	1.99	15	PASS
N024516-001B-PS	PS	1	Ca	165.1	0.3	15	PASS
N024516-001B-MS1	MS	1	Ca	166.62	0.29	15	PASS
N024516-001B-MSD1	MSD	1	Ca	168.67	0.55	15	PASS
N024516-002B	SAMP	1	Ca	197.54	1.14	15	PASS
CCV2	CCV	1	Ca	10.35	0.26	15	PASS
CCB2	CCB	1	Ca	-0.03	40.37	15	<PQL
LLCCV1	CCV2	1	Ca	0.22	20.52	20	<PQL
ICSA2	ICSA	1	Ca	521.35	0.35	15	PASS
ICSAB2	ICSAB	1	Ca	566.78	0.35	15	PASS
CalBlk	IBLK	1	Fe	0	13.91	15	PASS
Standard1	ICAL	1	Fe	0.02	2.52	15	PASS
Standard2	ICAL	1	Fe	0.05	1.22	15	PASS
Standard3	ICAL	1	Fe	2	0.76	15	PASS
Standard4	ICAL	1	Fe	5	0.23	15	PASS
Standard5	ICAL	1	Fe	7.5	0.73	15	PASS
Standard6	ICAL	1	Fe	10	95.37	15	NR!
Standard6	ICAL	1	Fe	10	2.029	15	PASS
Standard7	ICAL	1	Fe	20	0.028	15	PASS
ICV	ICV	1	Fe	10.38	0.32	15	PASS
ICB	ICB	1	Fe	0.0025	53.12	15	<PQL
LLICV1	CCV1	1	Fe	0.022	3.81	20	PASS
ICSA1	ICSA	1	Fe	179.21	0.12	15	PASS

RSD SUMMARY: 170613B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
ICSAB1	ICSAB	1	Fe	185.02	0.081	15	PASS
MB-62508	MBLK	1	Fe	-0.00079	46.84	15	<PQL
LCS1-62508	LCS	1	Fe	0.11	1.051	15	PASS
N024516-001B	SAMP	1	Fe	0.02	4.53	15	PASS
CCV1	CCV	1	Fe	10.6	0.5	15	PASS
CCB1	CCB	1	Fe	0.00038	226.28	15	<PQL
N024516-001B	SAMP	5	Fe	0.0035	25.79	15	<PQL
N024516-001B-PS	PS	1	Fe	0.13	0.86	15	PASS
N024516-001B-MS1	MS	1	Fe	0.11	0.68	15	PASS
N024516-001B-MSD1	MSD	1	Fe	0.11	1.0053	15	PASS
N024516-002B	SAMP	1	Fe	0.011	2.17	15	PASS
CCV2	CCV	1	Fe	10.53	0.66	15	PASS
CCB2	CCB	1	Fe	0.00067	102.55	15	<PQL
LLCCV1	CCV2	1	Fe	0.023	2.64	20	PASS
ICSA2	ICSA	1	Fe	180.31	0.059	15	PASS
ICSAB2	ICSAB	1	Fe	185.49	0.21	15	PASS
CalBlk	IBLK	1	Mg	0	13.48	15	PASS
Standard1	ICAL	1	Mg	0.1	1.36	15	PASS
Standard2	ICAL	1	Mg	1	1.55	15	PASS
Standard3	ICAL	1	Mg	2	0.98	15	PASS
Standard4	ICAL	1	Mg	5	0.17	15	PASS
Standard5	ICAL	1	Mg	7.5	0.8	15	PASS
Standard6	ICAL	1	Mg	10	43.18	15	NR!
Standard6	ICAL	1	Mg	10	1.98	15	PASS
Standard7	ICAL	1	Mg	20	0.043	15	PASS
ICV	ICV	1	Mg	10.31	0.25	15	PASS
ICB	ICB	1	Mg	-0.0011	57.64	15	<PQL
LLICV1	CCV1	1	Mg	0.1	3.017	20	PASS
ICSA1	ICSA	1	Mg	482.41	0.35	15	PASS
ICSAB1	ICSAB	1	Mg	522.83	0.21	15	PASS
MB-62508	MBLK	1	Mg	-0.00008	581.71	15	<PQL
LCS1-62508	LCS	1	Mg	10.31	0.099	15	PASS
N024516-001B	SAMP	1	Mg	36.32	0.066	15	PASS
CCV1	CCV	1	Mg	10.62	0.48	15	PASS
CCB1	CCB	1	Mg	-0.0016	15.6	15	<PQL
N024516-001B	SAMP	5	Mg	8.14	1.34	15	PASS
N024516-001B-PS	PS	1	Mg	44.43	0.26	15	PASS
N024516-001B-MS1	MS	1	Mg	44.82	0.14	15	PASS
N024516-001B-MSD1	MSD	1	Mg	45.11	0.18	15	PASS
N024516-002B	SAMP	1	Mg	26.29	0.17	15	PASS
CCV2	CCV	1	Mg	10.51	0.68	15	PASS
CCB2	CCB	1	Mg	-0.0017	22.17	15	<PQL

RSD SUMMARY: 170613B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
LLCCV1	CCV2	1	Mg	0.12	1.16	20	PASS
ICSA2	ICSA	1	Mg	487.88	0.17	15	PASS
ICSAB2	ICSAB	1	Mg	525.5	0.29	15	PASS

RSD SUMMARY: 170615B

Instrument ID: ICP-02

Sample Name	Type	DF	Analyte	Reported Conc	RSD	Criteria	Comment
CalBlk	IBLK	1	Na	0	0.73	15	PASS
Standard1	ICAL	1	Na	0.1	6.55	15	PASS
Standard2	ICAL	1	Na	1	0.47	15	PASS
Standard3	ICAL	1	Na	5	0.43	15	PASS
Standard4	ICAL	1	Na	10	0.065	15	PASS
Standard5	ICAL	1	Na	20	0.31	15	PASS
Standard6	ICAL	1	Na	40	0.29	15	PASS
ICV	ICV	1	Na	9.78	0.28	15	PASS
ICB	ICB	1	Na	-0.032	6.39	15	PASS
ICSA1	ICSA	1	Na	-0.061	12.12	15	PASS
ICSAB1	ICSAB	1	Na	9.97	0.59	15	PASS
MB-62508	MBLK	1	Na	-0.059	10.75	15	PASS
LCS2-62508	LCS	1	Na	19.72	0.49	15	PASS
N024516-001B	SAMP	1	Na	672.71	0.84	15	PASS
N024516-002B	SAMP	1	Na	1201.6	0.35	15	PASS
CCV1	CCV	1	Na	10.002	0.59	15	PASS
CCB1	CCB	1	Na	0.068	1.7	15	PASS
N024516-001B	SAMP	25	Na	29.21	0.15	15	PASS
N024516-002B	SAMP	50	Na	27.2	0.8	15	PASS
N024516-002B	SAMP	250	Na	5.61	0.25	15	PASS
N024516-002B-PS	PS	50	Na	28.27	0.55	15	PASS
CCV2	CCV	1	Na	9.88	0.22	15	PASS
CCB2	CCB	1	Na	0.019	6.5	15	PASS
N024516-002B-MS2	MS	50	Na	28.8	0.34	15	PASS
N024516-002B-MSD2	MSD	50	Na	29.24	0.21	15	PASS
CCV3	CCV	1	Na	9.91	0.44	15	PASS
CCB3	CCB	1	Na	-0.022	37.46	15	<PQL
CCV4	CCV	1	Na	9.86	0.77	15	PASS
CCB4	CCB	1	Na	-0.06	8.69	15	PASS
ICSA2	ICSA	1	Na	-0.08	16.73	15	<PQL
ICSAB2	ICSAB	1	Na	9.95	0.78	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170613B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170430K,0.5<50mL
Standard2	MWST-170601G
Standard3	MWST-170601K,5<50mL
Standard4	MWST-170601K,12.5<50mL
Standard5	MWST-170601K,15<40mL
Standard6	MWST-170601K,25<50mL
Standard7	MWST-170601K
ICV	MWST-170430G
CCV	MWST-170601K,25<50mL
ICSA/ICSAB	MWST-170601L/ MWST-170430H
Int. Std. (Y)	MSST-170404Q/R
PS Spike	MWST-170601Q/-170430B/-170601R

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/13/2017	02:17:10 PM
2	Standard1	ICAL	1	06/13/2017	02:21:32 PM
3	Standard2	ICAL	1	06/13/2017	02:26:21 PM
11	Standard3	ICAL	1	06/13/2017	02:31:11 PM
12	Standard4	ICAL	1	06/13/2017	02:36:03 PM
6	Standard5	ICAL	1	06/13/2017	02:41:57 PM
7	Standard6	ICAL	1	06/13/2017	02:47:47 PM
7	Standard6	ICAL	1	06/13/2017	02:53:32 PM
8	Standard7	ICAL	1	06/13/2017	02:59:22 PM
9	ICV	ICV	1	06/13/2017	03:04:47 PM
1	ICB	ICB	1	06/13/2017	03:10:41 PM
2	LLICV1	CCV1	1	06/13/2017	03:22:11 PM
4	ICSA1	ICSA	1	06/13/2017	03:27:01 PM
5	ICSAB1	ICSAB	1	06/13/2017	03:32:58 PM
98	MB-62507	MBLK	1	06/13/2017	03:38:55 PM
99	LCS-62507	LCS	1	06/13/2017	03:45:51 PM
100	N024499-002D	SAMP	1	06/13/2017	03:51:44 PM
101	N024499-002D	SAMP	5	06/13/2017	03:57:37 PM
102	N024499-002D-PS	PS	1	06/13/2017	04:02:28 PM
103	N024499-002D-MS	MS	1	06/13/2017	04:08:21 PM
104	N024499-002D-MSD	MSD	1	06/13/2017	04:14:14 PM
105	MB-62508	MBLK	1	06/13/2017	04:20:07 PM
106	LCS1-62508	LCS	1	06/13/2017	04:24:58 PM
107	N024516-001B	SAMP	1	06/13/2017	04:30:51 PM
7	CCV1	CCV	1	06/13/2017	04:36:44 PM
1	CCB1	CCB	1	06/13/2017	04:42:36 PM
108	N024516-001B	SAMP	5	06/13/2017	04:47:24 PM
109	N024516-001B-PS	PS	1	06/13/2017	04:52:16 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
110	N024516-001B-MS1	MS	1	06/13/2017	04:58:10 PM
111	N024516-001B-MSD1	MSD	1	06/13/2017	05:04:05 PM
112	N024516-002B	SAMP	1	06/13/2017	05:09:59 PM
7	CCV2	CCV	1	06/13/2017	05:15:51 PM
1	CCB2	CCB	1	06/13/2017	05:21:43 PM
2	LLCCV1	CCV2	1	06/13/2017	05:26:32 PM
4	ICSA2	ICSA	1	06/13/2017	05:31:21 PM
5	ICSAB2	ICSAB	1	06/13/2017	05:37:18 PM

INJECTION LOG: 170615B

Instrument ID: ICP-02

STANDARD CODE	
Standard1	MWST-170601A,0.025<50mL
Standard2	MWST-170601A,0.25<50mL
Standard3	MWST-170601A,1.25<50mL
Standard4	MWST-170601A,2.5<50mL
Standard5	MWST-170601A,5<50mL
Standard6	MWST-170601A,10<50mL
ICV	MWST-170228B
CCV	MWST-170601A,2.5<50mL
ICSA/ICSAB	MWST-170601L/MWST-170601B
Int. Std. (Sc):	MSST-170404Q
PS Spike	MSST-130329D/E

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
1	CalBlk	IBLK	1	06/15/2017	10:12:25 AM
26	Standard1	ICAL	1	06/15/2017	10:15:42 AM
27	Standard2	ICAL	1	06/15/2017	10:19:00 AM
28	Standard3	ICAL	1	06/15/2017	10:22:48 AM
29	Standard4	ICAL	1	06/15/2017	10:26:36 AM
30	Standard5	ICAL	1	06/15/2017	10:30:24 AM
31	Standard6	ICAL	1	06/15/2017	10:34:13 AM
32	ICV	ICV	1	06/15/2017	10:38:03 AM
1	ICB	ICB	1	06/15/2017	10:41:52 AM
33	ICSA1	ICSA	1	06/15/2017	10:45:10 AM
34	ICSAB1	ICSAB	1	06/15/2017	10:48:27 AM
38	MB-62508	MBLK	1	06/15/2017	10:53:59 AM
39	LCS2-62508	LCS	1	06/15/2017	10:57:17 AM
40	N024516-001B	SAMP	1	06/15/2017	11:01:07 AM
41	N024516-002B	SAMP	1	06/15/2017	11:05:58 AM
42	MB-62486	MBLK	1	06/15/2017	11:10:51 AM
43	LCS2-62486	LCS	1	06/15/2017	11:14:09 AM
44	N024483-001C	SAMP	100	06/15/2017	11:17:59 AM
45	N024473-001A	SAMP	100	06/15/2017	11:21:16 AM
46	N024474-001A	SAMP	100	06/15/2017	11:26:05 AM
47	N024475-001A	SAMP	100	06/15/2017	11:31:09 AM
29	CCV1	CCV	1	06/15/2017	11:36:00 AM
1	CCB1	CCB	1	06/15/2017	11:39:48 AM
48	N024476-001A	SAMP	100	06/15/2017	11:43:05 AM
49	N024477-001A	SAMP	100	06/15/2017	11:47:56 AM
50	N024478-001A	SAMP	100	06/15/2017	11:52:47 AM
51	N024479-001A	SAMP	100	06/15/2017	11:57:35 AM
52	N024480-001A	SAMP	100	06/15/2017	12:02:26 PM
53	N024535-001A	SAMP	100	06/15/2017	12:07:16 PM

A/S Loc	Sample Name	Type	DF	Acq Date	Acq Time
54	N024516-001B	SAMP	25	06/15/2017	12:12:06 PM
55	N024516-002B	SAMP	50	06/15/2017	12:15:25 PM
56	N024516-002B	SAMP	250	06/15/2017	12:18:44 PM
57	N024516-002B-PS	PS	50	06/15/2017	12:22:03 PM
29	CCV2	CCV	1	06/15/2017	12:25:22 PM
1	CCB2	CCB	1	06/15/2017	12:29:10 PM
58	N024516-002B-MS2	MS	50	06/15/2017	12:32:27 PM
59	N024516-002B-MSD2	MSD	50	06/15/2017	12:35:46 PM
60	N024483-001C	SAMP	5	06/15/2017	12:39:05 PM
61	N024483-001C	SAMP	25	06/15/2017	12:42:25 PM
62	N024483-001C-PS	PS	5	06/15/2017	12:45:45 PM
63	N024483-001C-MS2	MS	5	06/15/2017	12:49:35 PM
64	N024483-001C-MSD2	MSD	5	06/15/2017	12:53:25 PM
65	N024473-001A	SAMP	2500	06/15/2017	12:57:15 PM
66	N024474-001A	SAMP	2500	06/15/2017	01:00:35 PM
67	N024475-001A	SAMP	2500	06/15/2017	01:03:55 PM
29	CCV3	CCV	1	06/15/2017	01:07:44 PM
1	CCB3	CCB	1	06/15/2017	01:11:33 PM
68	N024476-001A	SAMP	1000	06/15/2017	01:14:51 PM
69	N024477-001A	SAMP	2500	06/15/2017	01:18:12 PM
70	N024478-001A	SAMP	2500	06/15/2017	01:22:01 PM
71	N024479-001A	SAMP	2500	06/15/2017	01:25:51 PM
72	N024480-001A	SAMP	1000	06/15/2017	01:29:10 PM
73	N024535-001A	SAMP	2500	06/15/2017	01:32:30 PM
29	CCV4	CCV	1	06/15/2017	01:35:50 PM
1	CCB4	CCB	1	06/15/2017	01:39:39 PM
33	ICSA2	ICSA	1	06/15/2017	01:42:56 PM
34	ICSAB2	ICSAB	1	06/15/2017	01:46:13 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/12/2017 7:48:40**
Prep End Date: **6/12/2017 1:00:00**
Prep Batch **62508** Prep Code: **3010_W**

Reviewed/ Date: 6/16/2017
Initials/ Date: FOR 6/16/2017
Technician **Mark Gesmundo**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95**	**DB-2-39**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS1-62508	Aqueous		25	☐	0	0	25	1.000		
LCS2-62508	Aqueous		25	☐	0	0	25	1.000		
MB-62508	Aqueous		25	☐	0	0	25	1.000		
N024516-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024516-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024516-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024516-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024516-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024516-002B-MS	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8997	HYDROCHLORIC ACID
9004	NITRIC ACID

MWST-170601R
MWST-170430J
MWST-170430B

Spk ID	Spike Name	SampType	AmtAdd
MSST-111006A	Potassium	LCS,MS,MSD	0.05
MSST-130329D	Sodium	LCS,MS,MSD	0.05
MSST-170116A	Strontium	LCS,MS,MSD	0.125
~~MWST-161201F~~	ICP Solution C	LCS,MS,MSD	0.5
~~MWST-161205D~~	ICP Solution A	LCS,MS,MSD	0.5
~~MWST-170107E~~	ICP Solution B	LCS,MS,MSD	0.5

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170613B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Magnesium								
CalBlk	06/13/2017	02:17:10 PM	Mg	279.079	55	0.00	mg/L	
Standard1	06/13/2017	02:21:32 PM	Mg	279.079	1227	0.1000	mg/L	
Standard2	06/13/2017	02:26:21 PM	Mg	279.079	10785	1.000	mg/L	
Standard3	06/13/2017	02:31:11 PM	Mg	279.079	21951	2.000	mg/L	
Standard4	06/13/2017	02:36:03 PM	Mg	279.079	56247	5.000	mg/L	
Standard5	06/13/2017	02:41:57 PM	Mg	279.079	82174	7.500	mg/L	
~~Standard6~~	~~06/13/2017~~	~~02:47:47 PM~~	~~Mg~~	~~279.079~~	~~18658~~	~~10.000~~	mg/L	
Standard6	06/13/2017	02:53:32 PM	Mg	279.079	111818	10.000	mg/L	
Standard7	06/13/2017	02:59:22 PM	Mg	279.079	213564	20.000	mg/L	0.9998
Calcium								
CalBlk	06/13/2017	02:17:10 PM	Ca	227.546	-55	0.00	mg/L	
Standard1	06/13/2017	02:21:32 PM	Ca	227.546	52	0.2000	mg/L	
Standard2	06/13/2017	02:26:21 PM	Ca	227.546	232	1.000	mg/L	
Standard3	06/13/2017	02:31:11 PM	Ca	227.546	494	2.000	mg/L	
Standard4	06/13/2017	02:36:03 PM	Ca	227.546	1271	5.000	mg/L	
Standard5	06/13/2017	02:41:57 PM	Ca	227.546	1854	7.500	mg/L	
~~Standard6~~	~~06/13/2017~~	~~02:47:47 PM~~	~~Ca~~	~~227.546~~	~~-33622~~	~~10.000~~	mg/L	
Standard6	06/13/2017	02:53:32 PM	Ca	227.546	2525	10.000	mg/L	
Standard7	06/13/2017	02:59:22 PM	Ca	227.546	4989	20.000	mg/L	1.0000
Iron								
CalBlk	06/13/2017	02:17:10 PM	Fe	273.953	83	0.00	mg/L	
Standard1	06/13/2017	02:21:32 PM	Fe	273.953	542	0.0200	mg/L	
Standard2	06/13/2017	02:26:21 PM	Fe	273.953	1664	0.050	mg/L	
Standard3	06/13/2017	02:31:11 PM	Fe	273.953	45934	2.000	mg/L	
Standard4	06/13/2017	02:36:03 PM	Fe	273.953	117890	5.000	mg/L	
Standard5	06/13/2017	02:41:57 PM	Fe	273.953	172086	7.500	mg/L	
~~Standard6~~	~~06/13/2017~~	~~02:47:47 PM~~	~~Fe~~	~~273.953~~	~~15486~~	~~10.000~~	mg/L	
Standard6	06/13/2017	02:53:32 PM	Fe	273.953	233688	10.000	mg/L	
Standard7	06/13/2017	02:59:22 PM	Fe	273.953	442839	20.000	mg/L	0.9997

6/16/2017

INITIAL CALIBRATION SUMMARY: 170615B

Instrument ID: ICP-02

Sample ID	Date	Time	Elem	Wavelength	Corrected Intensity	Concentration	Units	R
Sodium								
CalBlk	06/15/2017	10:12:25 AM	Na	589.594	784	0.00	mg/L	
Standard1	06/15/2017	10:15:42 AM	Na	589.594	134	0.1000	mg/L	
Standard2	06/15/2017	10:19:00 AM	Na	589.594	1406	1.000	mg/L	
Standard3	06/15/2017	10:22:48 AM	Na	589.594	6944	5.000	mg/L	
Standard4	06/15/2017	10:26:36 AM	Na	589.594	14918	10.000	mg/L	
Standard5	06/15/2017	10:30:24 AM	Na	589.594	28902	20.000	mg/L	
Standard6	06/15/2017	10:34:13 AM	Na	589.594	58682	40.000	mg/L	1.0000

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV** SampType: **ICV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115752**
Client ID: **ICV** Batch ID: **R115752** TestNo: **EPA 6010B** Analysis Date: **6/13/2017** SeqNo: **2666232**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10069.474	500	10000	0	101	90	110				
Iron	10384.481	20	10000	0	104	90	110				
Magnesium	10314.964	100	10000	0	103	90	110				

Sample ID **LLICV1** SampType: **CCV1** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115752**
Client ID: **ZZZZZZ** Batch ID: **R115752** TestNo: **EPA 6010B** Analysis Date: **6/13/2017** SeqNo: **2666234**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	185.109	500	200.0	0	92.6	80	120				
Iron	21.579	20	20.00	0	108	80	120				
Magnesium	102.092	100	100.0	0	102	80	120				

Sample ID **CCV1** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115752**
Client ID: **CCV** Batch ID: **R115752** TestNo: **EPA 6010B** Analysis Date: **6/13/2017** SeqNo: **2666247**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10519.597	500	10000	0	105	90	110				
Iron	10601.145	20	10000	0	106	90	110				
Magnesium	10618.229	100	10000	0	106	90	110				

Sample ID **CCV2** SampType: **CCV** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115752**
Client ID: **CCV** Batch ID: **R115752** TestNo: **EPA 6010B** Analysis Date: **6/13/2017** SeqNo: **2666254**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	10352.895	500	10000	0	104	90	110				
Iron	10533.424	20	10000	0	105	90	110				
Magnesium	10510.951	100	10000	0	105	90	110				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115752**
Client ID: **ZZZZZZ**	Batch ID: **R115752**	TestNo: **EPA 6010B**		Analysis Date: **6/13/2017**	SeqNo: **2666256**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	221.621	500	200.0	0	111	70	130				
Iron	23.447	20	20.00	0	117	70	130				
Magnesium	115.574	100	100.0	0	116	70	130				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICV**	SampType: **ICV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **ICV**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668396**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9779.740	500	10000	0	97.8	90	110				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **CCV**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668410**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	10001.580	500	10000	0	100	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **CCV**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668422**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9885.013	500	10000	0	98.9	90	110				

Sample ID **CCV3**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **CCV**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9905.723	500	10000	0	99.1	90	110				

Sample ID **CCV4**	SampType: **CCV**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **CCV**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668442**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9860.297	500	10000	0	98.6	90	110				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115752**
Client ID: **ICB**	Batch ID: **R115752**	TestNo: **EPA 6010B**		Analysis Date: **6/13/2017**	SeqNo: **2666233**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-33.530018	500									
Iron	2.526	20									
Magnesium	-1.080746	100									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115752**
Client ID: **CCB**	Batch ID: **R115752**	TestNo: **EPA 6010B**		Analysis Date: **6/13/2017**	SeqNo: **2666248**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	2.527	500									
Iron	0.383	20									
Magnesium	-1.556491	100									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115752**
Client ID: **CCB**	Batch ID: **R115752**	TestNo: **EPA 6010B**		Analysis Date: **6/13/2017**	SeqNo: **2666255**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	-29.549637	500									
Iron	0.668	20									
Magnesium	-1.71753	100									

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICB**	SampType: **ICB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **ICB**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668397**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-31.509756	500									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **CCB**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668411**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	67.972	500									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **CCB**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668423**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	19.188	500									

Sample ID **CCB3**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **CCB**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668435**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-22.043558	500									

Sample ID **CCB4**	SampType: **CCB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **CCB**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668443**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-60.133602	500									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115752**
Client ID: **ICSA** Batch ID: **R115752** TestNo: **EPA 6010B** Analysis Date: **6/13/2017** SeqNo: **2666235**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	499781.236	50	500000	0	100	80	120				
Calcium	512297.711	500	500000	0	102	80	120				
Iron	179208.186	20	200000	0	89.6	80	120				
Magnesium	482412.999	100	500000	0	96.5	80	120				

Sample ID **ICSAB1** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115752**
Client ID: **ICSAB** Batch ID: **R115752** TestNo: **EPA 6010B** Analysis Date: **6/13/2017** SeqNo: **2666236**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	543703.972	50	500000	0	109	80	120				
Calcium	558659.264	500	500000	0	112	80	120				
Iron	185017.125	20	200000	0	92.5	80	120				
Magnesium	522825.434	100	500000	0	105	80	120				

Sample ID **ICSA2** SampType: **ICSA** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115752**
Client ID: **ICSA** Batch ID: **R115752** TestNo: **EPA 6010B** Analysis Date: **6/13/2017** SeqNo: **2666257**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	505818.776	50	500000	0	101	80	120				
Calcium	521351.428	500	500000	0	104	80	120				
Iron	180311.274	20	200000	0	90.2	80	120				
Magnesium	487882.952	100	500000	0	97.6	80	120				

Sample ID **ICSAB2** SampType: **ICSAB** TestCode: **6010_WDPG** Units: **ug/L** Prep Date: RunNo: **115752**
Client ID: **ICSAB** Batch ID: **R115752** TestNo: **EPA 6010B** Analysis Date: **6/13/2017** SeqNo: **2666258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	549815.787	50	500000	0	110	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115752**
Client ID: **ICSAB**	Batch ID: **R115752**	TestNo: **EPA 6010B**		Analysis Date: **6/13/2017**	SeqNo: **2666258**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	566777.715	500	500000	0	113	80	120				
Iron	185492.716	20	200000	0	92.7	80	120				
Magnesium	525501.929	100	500000	0	105	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **ICSA**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668398**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-61.152016	500									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **ICSAB**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668399**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9969.186	500	10000	0	99.7	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **ICSA**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668444**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	-79.753023	500									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **ICSAB**	Batch ID: **R115799**	TestNo: **EPA 6010B**		Analysis Date: **6/15/2017**	SeqNo: **2668445**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	9946.918	500	10000	0	99.5	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170613B

Instrument ID: ICP-02

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	0.99	99.39	65-125	PASS
Standard2	ICAL	1	1.14	113.89	65-125	PASS
Standard3	ICAL	1	1.026	102.57	65-125	PASS
Standard4	ICAL	1	1.0009	100.09	65-125	PASS
Standard5	ICAL	1	1.056	105.6	65-125	PASS
Standard6	ICAL	1	0.0014	0.14	65-125	NR!
Standard6	ICAL	1	0.98	97.75	65-125	PASS
Standard7	ICAL	1	0.98	97.7	65-125	PASS
ICV	ICV	1	0.99	98.94	65-125	PASS
ICB	ICB	1	1	99.81	65-125	PASS
LLICV1	CCV1	1	1	99.93	65-125	PASS
ICSA1	ICSA	1	0.92	92.2	65-125	PASS
ICSAB1	ICSAB	1	0.84	84.027	65-125	PASS
MB-62508	MBLK	1	1.16	115.7	65-125	PASS
LCS1-62508	LCS	1	1.032	103.24	65-125	PASS
N024516-001B	SAMP	1	1.011	101.11	65-125	PASS
CCV1	CCV	1	1.12	112.33	65-125	PASS
CCB1	CCB	1	1.14	114.29	65-125	PASS
N024516-001B	SAMP	5	1.057	105.71	65-125	PASS
N024516-001B-PS	PS	1	0.99	98.9	65-125	PASS
N024516-001B-MS1	MS	1	1.012	101.19	65-125	PASS
N024516-001B-MSD1	MSD	1	0.99	98.83	65-125	PASS
N024516-002B	SAMP	1	0.93	93.19	65-125	PASS
CCV2	CCV	1	1.078	107.79	65-125	PASS
CCB2	CCB	1	1.091	109.11	65-125	PASS
LLCCV1	CCV2	1	1.083	108.31	65-125	PASS
ICSA2	ICSA	1	0.99	98.94	65-125	PASS
ICSAB2	ICSAB	1	0.9	90	65-125	PASS

INTERNAL STANDARD: 170615B

Instrument ID: ICP-02

Scandium

Sample Name	Type	DF	Yttrium, 1.0 mg/L			
			Reported Conc	%REC	Criteria	Comment
CalBlk	IBLK	1	1	100	65-125	PASS
Standard1	ICAL	1	1.037	103.71	65-125	PASS
Standard2	ICAL	1	1.046	104.63	65-125	PASS
Standard3	ICAL	1	1.035	103.49	65-125	PASS
Standard4	ICAL	1	1.0074	100.74	65-125	PASS
Standard5	ICAL	1	1.039	103.93	65-125	PASS
Standard6	ICAL	1	1.034	103.42	65-125	PASS
ICV	ICV	1	1.045	104.52	65-125	PASS
ICB	ICB	1	1.013	101.26	65-125	PASS
ICSA1	ICSA	1	1.056	105.57	65-125	PASS
ICSAB1	ICSAB	1	1.011	101.13	65-125	PASS
MB-62508	MBLK	1	1.018	101.76	65-125	PASS
LCS2-62508	LCS	1	1.037	103.72	65-125	PASS
N024516-001B	SAMP	1	0.98	98.34	65-125	PASS
N024516-002B	SAMP	1	0.95	95.12	65-125	PASS
CCV1	CCV	1	1.019	101.88	65-125	PASS
CCB1	CCB	1	1.025	102.51	65-125	PASS
N024516-001B	SAMP	25	1.0094	100.94	65-125	PASS
N024516-002B	SAMP	50	1	99.79	65-125	PASS
N024516-002B	SAMP	250	1.0056	100.56	65-125	PASS
N024516-002B-PS	PS	50	1	99.89	65-125	PASS
CCV2	CCV	1	1.011	101.08	65-125	PASS
CCB2	CCB	1	1.023	102.27	65-125	PASS
N024516-002B-MS2	MS	50	1	99.99	65-125	PASS
N024516-002B-MSD2	MSD	50	1	99.96	65-125	PASS
CCV3	CCV	1	1.024	102.39	65-125	PASS
CCB3	CCB	1	1.034	103.39	65-125	PASS
CCV4	CCV	1	1.014	101.42	65-125	PASS
CCB4	CCB	1	1.022	102.23	65-125	PASS
ICSA2	ICSA	1	1.08	107.98	65-125	PASS
ICSAB2	ICSAB	1	1.025	102.51	65-125	PASS

6/16/2017
for

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-Metals in Soil

Dilution Test Summary

Work Order No.: N024516
Test Method: EPA 6010B
Analysis Date: 6/13/2017

Matrix: Groundwater
Batch No.: 62508

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to ~~Ca and~~ Fe. The calculated concentration is <25RL.
Dilution test failed for Mg. However, PS passed criteria.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024516-001B DT 5X	Calcium	ug/L	159125.3	PASS	159566.1	0.28%	10
N024516-001B DT 5X	Iron	ug/L	17.67743	NA	20.06101	11.88%	10
N024516-001B DT 5X	Magnesium	ug/L	40687.91	FAIL	36323.35	12.02%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-Metals in Soil

Dilution Test Summary

Work Order No.: N024516
Test Method: EPA 6010B
Analysis Date: 6/15/2017

Matrix: Groundwater
Batch No.: 62508

Instrument ID: ICP-02
Instrument Description: Perkin Elmer Optima DV Series

Comments:

Analyzed By: Mary Claire Ignacio

~~Dilution test is not applicable to Na. The calculated concentration is <25RL.~~

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024516-002B DT 250X	Sodium	ug/L	1403703	PASS	1359839	3.23%	10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_WDPGEPPB

Sample ID **N024516-001B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115752**
Client ID: **ZZZZZZ**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/13/2017**	SeqNo: **2666250**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	165096.679	500	10000	159600	55.3	80	120				S
Iron	128.644	20	100.0	20.06	109	80	120				
Magnesium	44426.176	100	10000	36320	81.0	80	120				

Sample ID **N024516-002B-PS**	SampType: **PS**	TestCode: **6010_WDPG**	Units: **ug/L**	Prep Date:	RunNo: **115799**
Client ID: **ZZZZZZ**	Batch ID: **62508**	TestNo: **EPA 6010B**	**EPA 3010A**	Analysis Date: **6/15/2017**	SeqNo: **2668421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Sodium	1413675.084	25000	20000	1360000	269	80	120				S

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

METHOD DETECTION LIMIT 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Acceptance Criteria: MDL < spike < 10XMDL

Analyte	Wavelength	#1	#2	#3	#4	#5	#6	#7	Spike Conc., mg/L	SD	MDL	PQL
Ag	328.069	0.0021	0.0020	0.0020	0.0020	0.0019	0.0020	0.0020	0.00125	0.00005062	**0.00016**	**0.0025**
Al	237.312	0.0272	0.0288	0.0288	0.0267	0.0269	0.0277	0.0276	0.025	0.00085451	**0.00269**	**0.050**
As	188.983	0.0054	0.0049	0.0037	0.0044	0.0060	0.0041	0.0048	0.005	0.00075065	**0.00236**	**0.010**
B	249.679	0.0735	0.0561	0.0463	0.0445	0.0396	0.0464	0.0398	0.05	0.01193786	**0.03752**	**0.10**
Ba	233.529	0.0007	0.0007	0.0006	0.0006	0.0006	0.0007	0.0007	0.000625	0.00003047	**0.00010**	**0.0025**
Be	313.104	0.0007	0.0006	0.0006	0.0006	0.0006	0.0006	0.0007	0.0005	0.00004386	**0.00014**	**0.0010**
Ca	227.546	0.0967	0.1086	0.0893	0.0864	0.0826	0.0978	0.0988	0.1	0.00880307	**0.02767**	**0.20**
Cd	214.437	0.0006	0.0006	0.0007	0.0006	0.0007	0.0006	0.0006	0.000313	0.00003910	**0.00012**	**0.0025**
Co	228.614	0.0011	0.0011	0.0010	0.0010	0.0009	0.0010	0.0011	0.00125	0.00005473	**0.00017**	**0.0025**
Cr	267.719	0.0004	0.0003	0.0004	0.0004	0.0004	0.0003	0.0004	0.0005	0.00004860	**0.00015**	**0.0010**
Cu	324.753	0.0013	0.0015	0.0015	0.0022	0.0022	0.0016	0.0015	0.0025	0.00034907	**0.00110**	**0.0050**
Fe	273.953	0.0115	0.0117	0.0112	0.0102	0.0105	0.0114	0.0114	0.01	0.00057502	**0.00181**	**0.020**
Mg	279.079	0.0227	0.0231	0.0204	0.0225	0.0221	0.0222	0.0250	0.025	0.00138863	**0.00436**	**0.10**
Mn	257.607	0.0013	0.0013	0.0013	0.0012	0.0012	0.0012	0.0012	0.00125	0.00004429	**0.00014**	**0.010**
Mo	202.03	0.0031	0.0032	0.0031	0.0030	0.0026	0.0029	0.0029	0.0025	0.00018274	**0.00057**	**0.0050**
Ni	231.604	0.0019	0.0020	0.0020	0.0022	0.0022	0.0021	0.0021	0.0025	0.00012429	**0.00039**	**0.0050**
Pb	220.351	0.0049	0.0049	0.0048	0.0044	0.0048	0.0048	0.0050	0.005	0.00018831	**0.00059**	**0.010**
Sb	206.836	0.0035	0.0038	0.0020	0.0034	0.0033	0.0032	0.0046	0.005	0.00076686	**0.00241**	**0.010**
Se	196.025	0.0017	0.0033	0.0025	0.0025	0.0015	0.0034	0.0025	0.005	0.00070697	**0.00222**	**0.010**
Sn	189.927	0.0051	0.0048	0.0052	0.0051	0.0044	0.0045	0.0050	0.005	0.00031282	**0.00098**	**0.010**
Ti	334.943	0.0011	0.0011	0.0011	0.0010	0.0011	0.0010	0.0010	0.00125	0.00005159	**0.00016**	**0.010**
Tl	190.794	0.0067	0.0060	0.0064	0.0047	0.0062	0.0067	0.0062	0.0075	0.00070505	**0.00222**	**0.015**
V	292.404	0.0007	0.0007	0.0007	0.0006	0.0006	0.0007	0.0007	0.00125	0.00006264	**0.00020**	**0.0025**
Zn	206.201	0.0024	0.0026	0.0024	0.0024	0.0024	0.0024	0.0033	0.0025	0.00034911	**0.00110**	**0.010**

LOD/PQL Verification 2016

Method Name: **Metals by ICP**
Method Number: EPA 200.7/ 6010
Analysis Date(s): 4/1/2016, 4/4/2016
Analyst: Mary Claire Ignacio

Matrix: **WATER**
Unit: mg/L

Instrument Name: **ICP-02**

Analyte	MDL	PQL	PQL VER	% REC	LOD	LOD VER
Ag	0.00016	0.0025	0.00223	89	0.0005	0.00080
Al	0.00269	0.050	0.05320	106	0.01	0.02090
As	0.00236	0.010	0.00834	83	0.0075	0.00617
B	0.03752	0.10	0.13977	140	0.05	0.05058
Ba	0.00010	0.0025	0.00265	106	0.00025	0.00104
Be	0.00014	0.0010	0.00106	106	0.0005	0.00046
Ca	0.02767	0.20	0.17684	88	0.1	0.08140
Cd	0.00012	0.0025	0.00262	105	0.00025	0.00104
Co	0.00017	0.0025	0.00263	105	0.0005	0.00101
Cr	0.00015	0.0010	0.00122	122	0.0005	0.00046
Cu	0.00110	0.0050	0.00436	87	0.0025	0.00144
Fe	0.00181	0.020	0.01970	99	0.005	0.00643
Mg	0.00436	0.10	0.09828	98	0.01	0.04118
Mn	0.00014	0.010	0.01016	102	0.0005	0.00426
Mo	0.00057	0.0050	0.00540	108	0.001	0.00241
Ni	0.00039	0.0050	0.00462	92	0.001	0.00156
Pb	0.00059	0.010	0.01026	103	0.001	0.00406
Sb	0.00241	0.010	0.00830	83	0.005	0.00305
Se	0.00222	0.010	0.01297	130	0.005	0.00721
Sn	0.00098	0.010	0.01092	109	0.0025	0.00442
Ti	0.00016	0.010	0.00996	100	0.0005	0.00384
Tl	0.00222	0.015	0.01485	99	0.005	0.00610
V	0.00020	0.0025	0.00246	98	0.0005	0.00089
Zn	0.00110	0.010	0.01092	109	0.0025	0.00412

Method Detection Limit

Analytical Method: EPA 6010B / 200.7
Digestion Method: EPA 3010A
Date of Analysis: 2/21/2017
Instrument Name: ICP2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: mg/L

Analyte	1	2	3	4	5	6	7	SD	Ave	AMT SPIKED	%RSD	MDL	PQL
Potassium	0.15443	0.16201	0.14301	0.16141	0.16124	0.12965	0.14652	0.01215	0.15118	0.1000	8.0	0.03815	0.5
Sodium	0.11445	0.11459	0.11678	0.11286	0.11394	0.09515	0.10066	0.00835	0.10978	0.1000	7.6	0.02621	0.5
Strontium	0.02939	0.03046	0.0307	0.02962	0.03209	0.02708	0.02772	0.00174	0.02958	0.0250	5.9	0.00545	0.05

LOD & PQL VERIFICATION

Analytical Method: EPA 6010B / 200.7 **Matrix:** Water
Date of Analysis: 2/21/2017 **Units:** mg/L
Instrument Name: ICP2
Analyst: MI

Compound	MDL	LOD		PQL		
		Spike	Recovered	Spike	Recovered	% Recovery
Sodium	0.02621	0.10	0.08408	0.5	0.52080	104.2
Potassium	0.03815	0.10	0.13587	0.5	0.48231	96.5
Strontium	0.00545	0.02	0.02459	0.05	0.06052	121.0

EPA 6020
Dissolved

Metals Technical Batch Review Checklist (ARCUS02)

ASSET LABORATORIES - LAS VEGAS

FIRST LEVEL REVIEW:

QC Batch Number: 62467
ASSET #: N024516

Instrument ID: ICPMS-02
Analyst: CEI
Date Analyzed: 6/8/2017

Method:

[ ] EPA 6010B / 200.7
[X] EPA 6020 / 200.8
[ ] EPA 7470A / 7471A/245.1
[ ] Other _____

Initial Calibration and Initial Calibration Verification	1st Level Review			2nd Level Review		
	Y	N	N/A	Y	N	N/A
1. Does correlation coefficient,r, meet criteria ?(r = 0.995)	X					
2. For ICV, all analytes within ± 10% of expected value? (±5% for EPA 200.7)	X					
3. Does the ICP/MS meet tune criteria? (ICP/MS only)	X					
4. % RSD calculated from 3 injections?	X					
5. Is low level check at PQL within ± 20% of expected value? (ICP/ICPMS only)	X					
Interference Check						
6. ICS A and AB at the start and end of sequence or twice during an 8-hr period.	X					
7. Are ICSA and AB within ± 20% of expected value?	X					
Continuing Calibration						
8. CCV after every 10 samples and end of analysis sequence.	X					
9. For CCV, all analytes within ± 10% of expected value?	X					
10. Calibration blank after ICVand CCV analysis.	X					
11. Do all calibration blanks (ICB and CCBs) meet criteria? (< PQL)	X					
12 Is low level check twice during 8 hr period or at end within ± 30% of expected value? (ICP/ICPMS only)	X					
Sample Information						
13. All samples are within linear dynamic range.	X					
14. All hits above PQL have %RSD of less than or equal to 15%? (ICP/ICPMS only)	X					
15. Are all samples analyzed/digested within hold time.	X					
16. Dilution test performed and within ± 10% of undiluted sample.	X					
17. When dilution test fails, post digestion spike recovery within 80-120% of expected value.	X					
18. For samples < 4 ppb, does the Cr result differs with Cr6+ by no more than 0.7 ppb?	X					
19 For samples > 4 ppb, does the Cr result differs with Cr6+ by no more than 20%?	X					
20. For samples that failed Cr6 vs CrT criteria, are samples reanalyzed for confirmation?			X			
21. For samples with Total and Dissolved analysis, is Total concentration higher or equal to Dissolved concentration?			X			
QC Items						
22. IS are within control limits (70-125% for ICPMS).	X					
23. Method blank values are below the PQL .	X					
24. LCS compounds within control limits.	X					
25. MS/MSD, RPD's are within control limits	X					
Raw Data and Miscellaneous Information						
26. Are Non-Conformances documented		X				
27. Runlog complete and included in package.	X					
28. Digestion log complete and included in package (if applicable)	X					
29. All sample raw data present in package.	X					
Preliminary Report						
30. Does the raw data match the preliminary report?	X					
31. Are analytical results correct?(Ex. dilutions, calculations.etc.)	X					
32. Are special instructions met?	X					

Comments:

	Yes	No	N/A
1. All assigned sample(s) analyzed			
2. Matrix / units correct			
3. Does batch meet QC requirements?			
4. Are analytical results correct? (Ex. dilutions, calculations.etc.)			
5. Is first level review correct and complete?			

1st Level Reviewer 6/16/2017 Date:

2nd Level Reviewer 6/16/2017 Date:

SAMPLE CALCULATION

SAMPLE CALCULATION

METHOD: EPA 6020
TEST NAME: Heavy Metals by ICP-MS
MATRIX: Groundwater

FORMULA:

Calculate the Chromium concentration, in ug/L , in the original sample as follows:

Chromium , ug/L = A * DF * PF

where:

A = ug/L, calculated concentration
DF = Dilution Factor
PF = Final Volume of Digestate, mL / Amount of Sample, mL

For Sample **N024516-002B** , the concentration in ug/L is calculated as follows:

Chromium , ug/L = 109.385 * 5 * (25/25)

Chromium , ug/L = 546.925

Reporting results in two significant figures,

Chromium , ug/L = 550

% RSD SUMMARY

PERCENT RSD SUMMARY: 170608A

Instrument ID: ICPMS-02

Sample Name	Type	DF	52 Cr [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.094	15.36	15	<PQL
Std2-0.5/5 ppb	ICAL	1	0.52	3.81	15	PASS
Std3-5/50 ppb	ICAL	1	5.08	0.74	15	PASS
Std4-10/100 ppb	ICAL	1	10.19	0.096	15	PASS
Std5-20/200 ppb	ICAL	1	20.55	0.26	15	PASS
Std6-40/400 ppb	ICAL	1	39.87	1.73	15	PASS
Std7-100/1000 ppb	ICAL	1	101.47	0.91	15	PASS
Std8-200/2000 ppb	ICAL	1	199.22	0.32	15	PASS
ICV	ICV	1	10.5	0.73	15	PASS
ICB	ICB	1	0.0058	42.19	15	<PQL
LLICV	CCV1	1	1.046	2.25	20	PASS
ICSA1	ICSA	1	0.036	25.96	15	<PQL
ICSAB1	ICSAB	1	20.95	0.86	15	PASS
MB-62467	MBLK	1	0.027	17.23	15	<PQL
LCS-62467	LCS	1	10.49	2.6	15	PASS
N024518-001B	SAMP	1	2.58	1.56	15	PASS
N024518-001B	SAMP	5	0.56	1.84	15	PASS
N024518-001B-PS	PS	1	11.92	2.15	15	PASS
N024518-001B-MS	MS	1	11.65	0.38	15	PASS
N024518-001B-MSD	MSD	1	11.59	1.3	15	PASS
N024519-001B	SAMP	1	4.3	2.2	15	PASS
N024519-002B	SAMP	1	2.054	1.87	15	PASS
N024519-003B	SAMP	1	1	3.54	15	PASS
CCV1	CCV	1	20.35	1.48	15	PASS
CCB1	CCB	1	<0.000	N/A	15	<PQL
N024519-004B	SAMP	1	1.27	3.26	15	PASS
N024516-001B	SAMP	1	0.2	5.52	15	PASS
N024516-002B	SAMP	1	498.24	1.8	15	PASS
LCS-62467	LCS	1	10.96	1.76	15	PASS
N024516-002B	SAMP	5	109.38	0.74	15	PASS
CCV2	CCV	1	20.84	0.25	15	PASS
CCB2	CCB	1	<0.000	N/A	15	<PQL
LLCCV1	CCV2	1	1.068	4.5	20	PASS
ICSA2	ICSA	1	0.05	16.81	15	<PQL
ICSAB2	ICSAB	1	20.94	1.98	15	PASS

PERCENT RSD SUMMARY: 170608A

Instrument ID: ICPMS-02

Sample Name	Type	DF	55 Mn [2]			
			Conc. [ppb]	RSD	Criteria	Comment
Cal Blank	IBLK	1	0	N/A	15	<PQL
Std1-0.1/1 ppb	ICAL	1	0.14	3.54	15	PASS
Std2-0.5/5 ppb	ICAL	1	0.53	10.3	15	PASS
Std3-5/50 ppb	ICAL	1	5.081	2.93	15	PASS
Std4-10/100 ppb	ICAL	1	10.13	2.08	15	PASS
Std5-20/200 ppb	ICAL	1	20.35	0.7	15	PASS
Std6-40/400 ppb	ICAL	1	40.056	1.0088	15	PASS
Std7-100/1000 ppb	ICAL	1	101.46	0.12	15	PASS
Std8-200/2000 ppb	ICAL	1	199.22	1.29	15	PASS
ICV	ICV	1	105.69	0.5	15	PASS
ICB	ICB	1	0.0064	58.27	15	<PQL
LLICV	CCV1	1	0.55	14.51	20	PASS
ICSA1	ICSA	1	<0.000	N/A	15	<PQL
ICSAB1	ICSAB	1	18.52	1.032	15	PASS
MB-62467	MBLK	1	0.023	23.57	15	<PQL
LCS-62467	LCS	1	103.4	1.21	15	PASS
CCV1	CCV	1	20.38	0.79	15	PASS
CCB1	CCB	1	0.00073	402.83	15	<PQL
N024516-001B	SAMP	1	178.4	2.02	15	PASS
N024516-002B	SAMP	1	8.99	2.64	15	PASS
LCS-62467	LCS	1	104.95	1.85	15	PASS
N024516-002B	SAMP	5	2	0.45	15	PASS
CCV2	CCV	1	20.37	0.82	15	PASS
CCB2	CCB	1	0.007	62.46	15	<PQL
LLCCV1	CCV2	1	0.57	3.13	20	PASS
ICSA2	ICSA	1	<0.000	N/A	15	<PQL
ICSAB2	ICSAB	1	18.59	0.71	15	PASS

ANALYSIS RUN LOG

INJECTION LOG: 170608A

Instrument ID: ICPMS-02

Data File	Sample Name	Type	DF	Acq. Date-Time
A0608001.D	RINSE	RINSE	1	06/08/17 11:06 AM
A0608002.D	Cal Blank	IBLK	1	06/08/17 11:11 AM
A0608003.D	Std1-0.1/1 ppb	ICAL	1	06/08/17 11:17 AM
A0608004.D	Std2-0.5/5 ppb	ICAL	1	06/08/17 11:23 AM
A0608005.D	Std3-5/50 ppb	ICAL	1	06/08/17 11:28 AM
A0608006.D	Std4-10/100 ppb	ICAL	1	06/08/17 11:34 AM
A0608007.D	Std5-20/200 ppb	ICAL	1	06/08/17 11:39 AM
A0608008.D	Std6-40/400 ppb	ICAL	1	06/08/17 11:45 AM
A0608009.D	Std7-100/1000 ppb	ICAL	1	06/08/17 11:50 AM
A0608010.D	Std8-200/2000 ppb	ICAL	1	06/08/17 11:59 AM
A0608011.D	ICV	ICV	1	06/08/17 12:05 PM
A0608012.D	ICB	ICB	1	06/08/17 12:10 PM
A0608013.D	LLICV	CCV1	1	06/08/17 12:16 PM
A0608014.D	ICSA1	ICSA	1	06/08/17 12:21 PM
A0608015.D	ICSAB1	ICSAB	1	06/08/17 12:28 PM
A0608016.D	MB-62467	MBLK	1	06/08/17 12:34 PM
A0608017.D	LCS-62467	LCS	1	06/08/17 12:39 PM
A0608018.D	N024518-001B	SAMP	1	06/08/17 12:45 PM
A0608019.D	N024518-001B	SAMP	5	06/08/17 12:50 PM
A0608020.D	N024518-001B-PS	PS	1	06/08/17 12:56 PM
A0608021.D	N024518-001B-MS	MS	1	06/08/17 1:01 PM
A0608022.D	N024518-001B-MSD	MSD	1	06/08/17 1:07 PM
A0608023.D	N024519-001B	SAMP	1	06/08/17 1:12 PM
A0608024.D	N024519-002B	SAMP	1	06/08/17 1:18 PM
A0608025.D	N024519-003B	SAMP	1	06/08/17 1:23 PM
A0608026.D	CCV1	CCV	1	06/08/17 1:29 PM
A0608027.D	CCB1	CCB	1	06/08/17 1:35 PM
A0608028.D	N024519-004B	SAMP	1	06/08/17 1:40 PM
A0608029.D	N024516-001B	SAMP	1	06/08/17 1:46 PM
A0608030.D	N024516-002B	SAMP	1	06/08/17 1:51 PM
A0608031.D	LCS-62467	LCS	1	06/08/17 1:57 PM
A0608032.D	N024516-002B	SAMP	5	06/08/17 2:02 PM
A0608033.D	CCV2	CCV	1	06/08/17 2:08 PM
A0608034.D	CCB2	CCB	1	06/08/17 2:13 PM
A0608035.D	LLCCV1	CCV2	1	06/08/17 2:19 PM
A0608036.D	ICSA2	ICSA	1	06/08/17 2:25 PM
A0608037.D	ICSAB2	ICSAB	1	06/08/17 2:31 PM

SAMPLE PREPARATION LOG

ASSET Laboratories

PREP BATCH REPORT

Prep Start Date: **6/8/2017 7:40:59 A**
Prep End Date: **6/8/2017 12:00:00**
Reviewed/ Date: 6/16/2017
Initials/ Date: 6/16/2017

Prep Batch **62467** Prep Code: **3010_W_MSDI** Technician **Claire Ignacio**

Prep Factor Units	Temp. (°C):	Location:
mL / mL	**95.0**	**02-28**

Sample ID	Matrix	pH	SampAmt	3 Replicates	Sol Added	Sol Recov	Fin Vol	factor	Clean Up Code	TURB Check
LCS-62467	Aqueous		25	☐	0	0	25	1.000		
MB-62467	Aqueous		25	☐	0	0	25	1.000		
N024516-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024516-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024518-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024518-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024518-001B-MS	Groundwater	<2	25	☐	0	0	25	1.000		
N024519-001B	Groundwater	<2	25	☐	0	0	25	1.000		
N024519-002B	Groundwater	<2	25	☐	0	0	25	1.000		
N024519-003B	Groundwater	<2	25	☐	0	0	25	1.000		
N024519-004B	Groundwater	<2	25	☐	0	0	25	1.000		

Clean Up Code: A = ACID; F = FLORISIL; S = SILICA GEL; M = MERCURY; G = GPC

Number	Reagent Name
8570	HYDROCHLORIC ACID
8736	NITRIC ACID

Spk ID	Spike Name	SampType	AmtAdd
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution A		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution B		0.25
2MWST-170428	ICV/MS/MSD/LCS/LCSD Solution C		0.25

INSTRUMENT TUNING CHECK

QC Tune Report

Data File: C:\ICPMH\1\7500\QCTUNE.D
Date Acquired: 8 Jun 2017 09:35:50 am
Operator:
Misc Info:
Vial Number: 0
Current Method: C:\ICPMH\1\METHODS\TuneCHK.m

Minimum Response(CPS)

Element	Actual	Required	Flag
9 Be	101117.00	0.00	
24 Mg	322895.00	0.00	
25 Mg	42347.00	0.00	
26 Mg	48537.50	0.00	
59 Co	415576.00	0.00	
115 In	629288.00	0.00	
206 Pb	170116.00	0.00	
207 Pb	145275.00	0.00	
208 Pb	363352.00	0.00	

RSD (%)

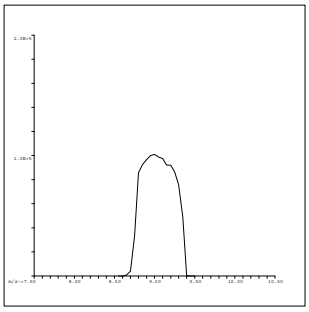
Element	Actual	Required	Flag
9 Be	0.93	5.00	
24 Mg	0.29	5.00	
25 Mg	0.93	5.00	
26 Mg	1.31	5.00	
59 Co	1.49	5.00	
115 In	1.74	5.00	
206 Pb	2.67	5.00	
207 Pb	2.09	5.00	
208 Pb	1.25	5.00	

Ion Ratio

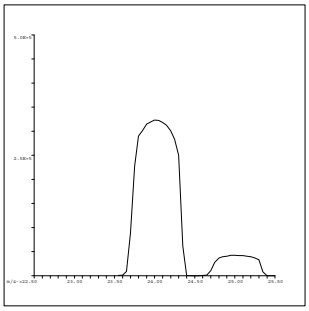
Element	Actual	Required	Flag
9 Be			
24 Mg			
25 Mg			
26 Mg			
59 Co			
115 In			
206 Pb			
207 Pb			
208 Pb			

Maximum Bkg. Count(CPS)

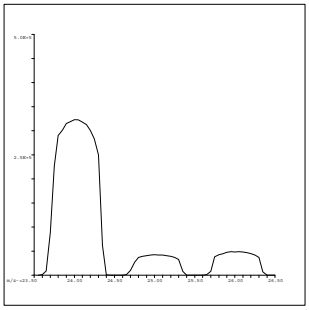
Element	Actual	Required	Flag



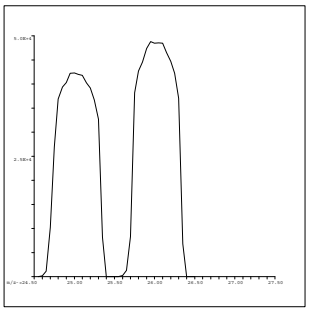
9 Be
Mass Calib.
Actual: 9.00
Required: 8.90-9.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



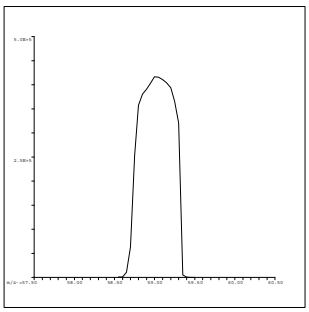
24 Mg
Mass Calib.
Actual: 24.00
Required: 23.90-24.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



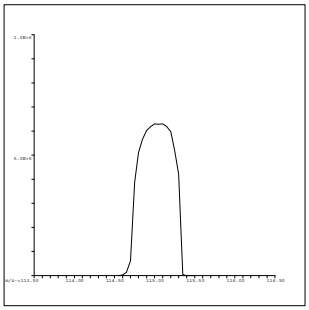
25 Mg
Mass Calib.
Actual: 25.00
Required: 24.90-25.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



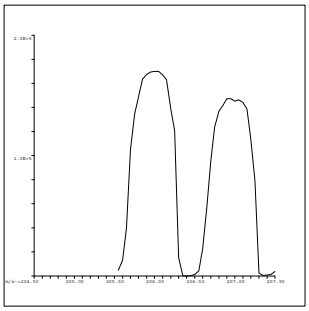
26 Mg
Mass Calib.
Actual: 26.00
Required: 25.90-26.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



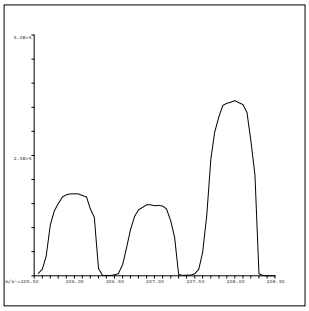
59 Co
Mass Calib.
Actual: 59.05
Required: 58.90-59.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



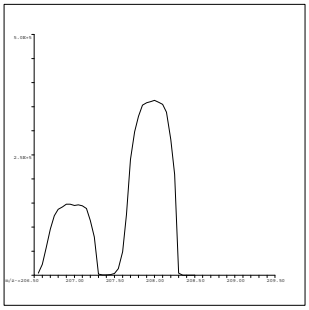
115 In
Mass Calib.
Actual: 115.05
Required: 114.90-115.10
Flag:
Peak Width
Actual: 0.60
Required: 0.75
Flag:



206 Pb
Mass Calib.
Actual: 206.00
Required: 205.90-206.10
Flag:
Peak Width
Actual: 0.70
Required: 0.75
Flag:



207 Pb
Mass Calib.
Actual: 207.00
Required: 206.90-207.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:



208 Pb
Mass Calib.
Actual: 208.00
Required: 207.90-208.10
Flag:
Peak Width
Actual: 0.65
Required: 0.75
Flag:

QC Tune Result:Pass

INITIAL CALIBRATION DATA SUMMARY

INITIAL CALIBRATION SUMMARY: 170608A

Instrument ID: ICPMS-02

Analyte	Data File	A0608002.D	A0608003.D	A0608004.D	A0608005.D	A0608006.D	A0608007.D	A0608008.D	A0608009.D	A0608010.D	
	Acq. Date-Time	06/08/2017 11:11 AM	06/08/2017 11:17 AM	06/08/2017 11:23 AM	06/08/2017 11:28 AM	06/08/2017 11:34 AM	06/08/2017 11:39 AM	06/08/2017 11:45 AM	06/08/2017 11:50 AM	06/08/2017 11:59 AM	
	Type	CalBlk	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	CalStd	
	Level	1	2	3	4	5	6	7	8	9	
	Sample Name	Cal Blank	Std1-0.1/1 ppb	Std2-0.5/5 ppb	Std3-5/50 ppb	Std4-10/100 ppb	Std5-20/200 ppb	Std6-40/400 ppb	Std7-100/1000 ppb	Std8-200/2000 ppb	
	Concentration	0.00	0.1/1 ug/L	0.5/5 ug/L	5/50 ug/L	10/100 ug/L	20/200 ug/L	40/400 ug/L	100/1000 ug/L	200/2000 ug/L	R
45 Sc (ISTD) [2]	CPS	59603.3	60766.3	59678.7	61086.2	61261	60506.1	60528.9	58997.7	57686	
55 Mn [2]	CPS	25.6	381.8	1318.9	12641.3	25266.9	50086.7	98580.7	243364.8	467143.7	1.0000
52 Cr [2]	CPS	187.8	682.2	2845.9	26743.2	53629	106602.3	206610.9	512375.4	983482.7	1.0000

Standard Code
ICAL: 2MSST-160906A
ICAL: 2MSST-160906B
ICAL: 2MWST-170428B
IS Mix: 2MWST-170107A

Calibration Acceptance Criteria: > 0.995 Correlation

INITIAL CALIBRATION AND CONTINUING CALIBRATION VERIFICATION SUMMARY

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICV**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662405**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	105.691	0.50	100.0	0	106	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ZZZZZZ**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.551	0.50	0.5000	0	110	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **CCV**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662420**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.385	0.50	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **CCV**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662427**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	20.368	0.50	20.00	0	102	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ZZZZZZ**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662429**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	0.573	0.50	0.5000	0	115	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICV**	SampType: **ICV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICV**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662378**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	10.498	1.0	10.00	0	105	90	110				

Sample ID **LLICV**	SampType: **CCV1**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ZZZZZZ**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662380**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.046	1.0	1.000	0	105	80	120				

Sample ID **CCV1**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **CCV**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662393**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.351	1.0	20.00	0	102	90	110				

Sample ID **CCV2**	SampType: **CCV**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **CCV**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662400**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.837	1.0	20.00	0	104	90	110				

Sample ID **LLCCV1**	SampType: **CCV2**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ZZZZZZ**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662402**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	1.068	1.0	1.000	0	107	70	130				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT BLANKS

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **CCB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **CCB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662428**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICB**	SampType: **ICB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662379**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB1**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **CCB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662394**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Sample ID **CCB2**	SampType: **CCB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **CCB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662401**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	ND	1.0									

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits
- Calculations are based on raw values
- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

SUMMARY OF INSTRUMENT CHECK (ICSA & ICSAB)

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICSA**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICSAB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662409**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.520	0.50	20.00	0	92.6	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICSA**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662430**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	0.50									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICSAB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662431**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	18.588	0.50	20.00	0	92.9	80	120				

Qualifiers:

B Analyte detected in the associated Method Blank
ND Not Detected at the Reporting Limit
DO Surrogate Diluted Out
E Value above quantitation range
R RPD outside accepted recovery limits
Calculations are based on raw values
H Holding times for preparation or analysis exceeded
S Spike/Surrogate outside of limits due to matrix interference

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID **ICSA1**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICSA**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662381**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.036	1.0									

Sample ID **ICSAB1**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICSAB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662382**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.949	1.0	20.00	0	105	80	120				

Sample ID **ICSA2**	SampType: **ICSA**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICSA**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662403**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	0.050	1.0									

Sample ID **ICSAB2**	SampType: **ICSAB**	TestCode: **6020DIS_CrP**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID: **ICSAB**	Batch ID: **R115657**	TestNo: **EPA 6020**		Analysis Date: **6/8/2017**	SeqNo: **2662404**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	20.937	1.0	20.00	0	105	80	120				

Qualifiers:

- B Analyte detected in the associated Method Blank
- ND Not Detected at the Reporting Limit
- DO Surrogate Diluted Out
- E Value above quantitation range
- R RPD outside accepted recovery limits

Calculations are based on raw values

- H Holding times for preparation or analysis exceeded
- S Spike/Surrogate outside of limits due to matrix interference

INTERNAL STANDARD SUMMARY

INTERNAL STANDARD: 170608A

Instrument ID: ICPMS-02

Sample Name	Type	DF	45 Sc (ISTD) [2]				
			CPS	REF	%REC	Comment	Criteria
Cal Blank	IBLK	1	59603.3	59603.3	100	PASS	70-125
Std1-0.1/1 ppb	ICAL	1	60766.3	59603.3	101.95	PASS	70-125
Std2-0.5/5 ppb	ICAL	1	59678.7	59603.3	100.13	PASS	70-125
Std3-5/50 ppb	ICAL	1	61086.2	59603.3	102.49	PASS	70-125
Std4-10/100 ppb	ICAL	1	61261	59603.3	102.78	PASS	70-125
Std5-20/200 ppb	ICAL	1	60506.1	59603.3	101.51	PASS	70-125
Std6-40/400 ppb	ICAL	1	60528.9	59603.3	101.55	PASS	70-125
Std7-100/1000 ppb	ICAL	1	58997.7	59603.3	98.98	PASS	70-125
Std8-200/2000 ppb	ICAL	1	57686	59603.3	96.78	PASS	70-125
ICV	ICV	1	67315.4	59603.3	112.94	PASS	70-125
ICB	ICB	1	59394.8	59603.3	99.65	PASS	70-125
LLICV	CCV1	1	54767.6	59603.3	91.89	PASS	70-125
ICSA1	ICSA	1	65099.2	59603.3	109.22	PASS	70-125
ICSAB1	ICSAB	1	65288.7	59603.3	109.54	PASS	70-125
MB-62467	MBLK	1	74333.9	59603.3	124.71	PASS	70-125
LCS-62467	LCS	1	73781.7	59603.3	123.79	PASS	70-125
N024518-001B	SAMP	1	66136.3	59603.3	110.96	PASS	70-125
N024518-001B	SAMP	5	55866.9	59603.3	93.73	PASS	70-125
N024518-001B-PS	PS	1	61499.8	59603.3	103.18	PASS	70-125
N024518-001B-MS	MS	1	64377.2	59603.3	108.01	PASS	70-125
N024518-001B-MSD	MSD	1	64880.4	59603.3	108.85	PASS	70-125
N024519-001B	SAMP	1	60590.1	59603.3	101.66	PASS	70-125
N024519-002B	SAMP	1	60381.4	59603.3	101.31	PASS	70-125
N024519-003B	SAMP	1	61127.5	59603.3	102.56	PASS	70-125
CCV1	CCV	1	60545.5	59603.3	101.58	PASS	70-125
CCB1	CCB	1	55286.2	59603.3	92.76	PASS	70-125
N024519-004B	SAMP	1	61254.7	59603.3	102.77	PASS	70-125
N024516-001B	SAMP	1	61639.4	59603.3	103.42	PASS	70-125
N024516-002B	SAMP	1	64647.4	59603.3	108.46	PASS	70-125
LCS-62467	LCS	1	56784.5	59603.3	95.27	PASS	70-125
N024516-002B	SAMP	5	62078.6	59603.3	104.15	PASS	70-125
CCV2	CCV	1	66408.6	59603.3	111.42	PASS	70-125
CCB2	CCB	1	59037.7	59603.3	99.051	PASS	70-125
LLCCV1	CCV2	1	55114.5	59603.3	92.47	PASS	70-125
ICSA2	ICSA	1	62196.1	59603.3	104.35	PASS	70-125
ICSAB2	ICSAB	1	61309.5	59603.3	102.86	PASS	70-125

SERIAL DILUTION/
POST DIGESTION SPIKE

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024516
Test Method: EPA 6020
Analysis Date: 6/8/2017

Matrix: Groundwater
Batch No.: 62467

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Cr. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024518-001B DT 5X	Chromium	ug/L	2.787822	NA	2.583072	7.93%	10

Note: NA - Not applicable

ASSET Laboratories

ICP-MS-Metals in Water

Dilution Test Summary

Work Order No.: N024516
Test Method: EPA 6020
Analysis Date: 6/8/2017

Matrix: Groundwater
Batch No.: 62467

Instrument ID: ICP-MS #2
Instrument Description: Agilent 7700x

Comments:

Analyzed By: Mary Claire Ignacio

Dilution test is not applicable to Mn. The calculated concentration is <25RL.

Sample ID	Analyte	Units	Calc Val	OQual	SAMPRefVal	%DIFF	%DIFFlimit
N024518-001B DT 5X	Manganese	ug/L	0	NA	0		10

Note: NA - Not applicable

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020_DIS

Sample ID	**N024518-001B-PS**	SampType: **PS**	TestCode: **6020_DIS**	Units: **µg/L**	Prep Date:	RunNo: **115657**
Client ID:	**ZZZZZZ**	Batch ID: **62467**	TestNo: **EPA 6020**	**EPA 3010A**	Analysis Date: **6/8/2017**	SeqNo: **2662414**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	93.743	0.50	100.0	0	93.7	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

CLIENT: ARCADIS U.S., Inc. - California
Work Order: N024516
Project: PG&E Topock - PMP, RC000753.801B

ANALYTICAL QC SUMMARY REPORT

TestCode: 6020DIS_CrPGE

Sample ID	N024518-001B-PS	SampType:	PS	TestCode:	6020DIS_CrP	Units:	µg/L	Prep Date:		RunNo:	115657
Client ID:	ZZZZZZ	Batch ID:	62467	TestNo:	EPA 6020	EPA 3010A		Analysis Date:	6/8/2017	SeqNo:	2662387

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	11.921	1.0	10.00	2.583	93.4	80	120				

Qualifiers:

B	Analyte detected in the associated Method Blank	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike/Surrogate outside of limits due to matrix interference
DO	Surrogate Diluted Out		Calculations are based on raw values		

MDL STUDY

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI

Matrix: Water
Amount of Sample: 25 mL
Units: ug/L

MDL<SPIKE<10XMDL

Analyte	AMT SPIKED, ppb	1	2	3	4	5	6	7	SD	MDL
ANTIMONY	0.100	0.091	0.078	0.067	0.089	0.069	0.088	0.087	0.0100	0.0314
ARSENIC	0.050	0.054	0.045	0.064	0.053	0.047	0.051	0.039	0.0079	0.0249
BARIUM	0.100	0.199	0.158	0.159	0.206	0.167	0.196	0.207	0.0222	0.0699
BERYLLIUM	0.100	0.090	0.089	0.072	0.104	0.077	0.103	0.107	0.0137	0.0431
CADMIUM	0.100	0.105	0.093	0.089	0.122	0.093	0.121	0.122	0.0151	0.0474
CHROMIUM	0.100	0.088	0.096	0.092	0.093	0.085	0.100	0.102	0.0061	0.0193
COBALT	0.100	0.102	0.088	0.084	0.096	0.085	0.104	0.100	0.0084	0.0263
COPPER	0.500	0.789	0.565	0.564	0.559	0.574	0.563	0.596	0.0836	0.2629
IRON	1.000	0.685	0.581	0.566	1.123	0.578	0.843	1.075	0.2394	0.7524
LEAD	0.100	0.108	0.098	0.088	0.116	0.089	0.113	0.112	0.0117	0.0367
MANGANESE	0.100	0.162	0.122	0.123	0.160	0.133	0.156	0.154	0.0177	0.0555
MOLYBDENUM	0.100	0.100	0.095	0.079	0.109	0.080	0.098	0.109	0.0123	0.0386
NICKEL	0.100	0.126	0.095	0.090	0.119	0.105	0.110	0.106	0.0126	0.0396
SELENIUM	0.100	0.113	0.104	0.091	0.104	0.092	0.110	0.110	0.0088	0.0276
SILVER	0.100	0.028	0.065	0.071	0.079	0.076	0.079	0.082	0.0188	0.0590
THALLIUM	0.100	0.084	0.076	0.067	0.091	0.070	0.088	0.087	0.0094	0.0296
URANIUM	0.100	0.099	0.090	0.082	0.104	0.083	0.105	0.106	0.0104	0.0328
VANADIUM	0.100	0.126	0.111	0.110	0.126	0.116	0.123	0.122	0.0068	0.0213
ZINC	0.500	0.930	0.695	0.905	0.781	0.765	0.744	0.810	0.0853	0.2681

Method Detection Limit 2016

Analytical Method: EPA 6020 / 200.8
Digestion Method: EPA 3010A
Date of Analysis: 4/5/2016,4/6/2016
Digestion Date: 4/1/2016
Instrument Name: ICPMS2
Analysts: MEI
Units: ug/L

Analyte	MDL	LOD	ACTUAL LOD	PQL	ACTUAL PQL	% REC
ANTIMONY	0.0314	0.100	0.187	0.50	0.515	103
ARSENIC	0.0249	0.050	0.049	0.10	0.103	103
BARIUM	0.0699	0.250	0.403	1.00	1.245	125
BERYLLIUM	0.0431	0.100	0.185	0.50	0.524	105
CADMIUM	0.0474	0.100	0.174	0.50	0.501	100
CHROMIUM	0.0193	0.075	0.321	1.00	0.973	97
COBALT	0.0263	0.100	0.163	0.50	0.475	95
COPPER	0.2629	0.500	0.328	1.00	1.062	106
IRON	0.7524	2.500	0.605	10.00	11.338	113
LEAD	0.0367	0.100	0.343	1.00	1.018	102
MANGANESE	0.0555	0.050	0.193	0.50	0.605	121
MOLYBDENUM	0.0386	0.050	0.247	0.50	0.660	132
NICKEL	0.0396	0.050	0.341	1.00	1.002	100
SELENIUM	0.0276	0.050	0.170	0.50	0.502	100
SILVER	0.0590	0.050	0.247	1.00	1.029	103
THALLIUM	0.0296	0.050	0.186	0.50	0.549	110
URANIUM	0.0328	0.050	0.181	0.50	0.533	107
VANADIUM	0.0213	0.050	0.221	1.00	0.873	87
ZINC	0.2681	0.500	3.286	10.00	10.085	101