GEL Laboratories LLC

a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
P 843.556.8171
F 843.766.1178

gel.com

April 06, 2018

Mr. Scot Fitzgerald
CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Re: CHPRC SAF W18-003
Work Order: 445702
SDG: GEL445702

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on March 13, 2018. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

Anna Dupree for
Heather Shaffer
Project Manager

Purchase Order: 300071 - 7H
Chain of Custody: W18-003-090, W18-003-099, W18-003-106, W18-003-108, W18-003-109, W18-003-110, W18-003-111, W18-003-114, W18-003-163, W18-003-164, W18-003-171, W18-003-172, W18-003-177, W18-003-179, W18-003-180, W18-003-182, W18-003-184 and W18-003-187
Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF W18-003
SDG: GEL445702

April 06, 2018

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on March 13, 2018, for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative.

Sample Identification
The laboratory received the following samples:

Laboratory Identification	Sample Description
445702001	B3HK08
445702002	B3HKH3
445702003	B3HKM7
445702004	B3HKN1
445702005	B3HKR4
445702006	B3HK19
445702007	B3HK20
445702008	B3HK30
445702009	B3HK39
445702010	B3HK52
445702011	B3HJM3
445702012	B3HJM5
445702013	B3HKB7
445702014	B3HK07
445702015	B3HKB6
445702016	B3HKB8
445702017	B3HKN0
445702018	B3HKN2
445702019	B3HKR3
445702020	B3HKR5
445702021	B3HK17
445702022	B3HK18

445702023	B3HK31
445702024	B3HK29
445702025	B3HK53
445702026	B3HK51

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: GC/MS Semivolatile, General Chemistry and Metals.

We certify that this package is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

Anna Dupree for
Heather Shaffer
Project Manager

Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL445702
Work Order #: 445702

GC/MS Semivolatile

Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CCV Requirements
All Calibration Verification Standards (CCV) did not meet the acceptance criteria as outlined in Method 8270D for sample 445702014 (B3HK07) and the associated QC. 2,4-Dinitrophenol and 4-Nitrophenol exceeded the %Drift criteria with a positive bias. Since there were no detects of the analytes in the associated sample, the biased high responses had no adverse impact on the reported data.

Quality Control (QC) Information

Laboratory Control Sample (LCS) Recovery
The LCS and/or LCSD (See Below) spike recoveries were not within the acceptance limits. The client established the limits of 70%-130%. Failures are expected. The data were reported per client request.

Sample	Analyte	Value
1203989702 (LCS)	Several	See applicable report

Metals

Determination of Metals by ICP

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CRDL/PQL Requirements
The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of potassium. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 445702011 (B3HJM3), 445702012 (B3HJM5), 445702014 (B3HK07), 445702017 (B3HKN0), 445702018 (B3HKN2), 445702019 (B3HKR3), 445702020 (B3HKR5), 445702023 (B3HK31), 445702024 (B3HK29), 445702025 (B3HK53) and 445702026 (B3HK51).

Quality Control (QC) Information

Method Blank (MB) Statement
The method blanks (MB) analyzed with this SDG met the acceptance criteria. However, where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data.

Sample	Analyte	Value
1203988595 (MB)	Silver	1.01 between (1 - 2.5)

Determination of Metals by ICP-MS

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Quality Control (QC) Information

Method Blank (MB) Statement
The method blanks (MB) analyzed with this SDG met the acceptance criteria. However, where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data.

Sample	Analyte	Value
1203988629 (MB)	Antimony	1.39 between (1 - 1.5)
	Tin	1.22 between (1 - 2.5)

General Chemistry

Carbon, Total Organic

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Total Organic Halogens (TOX)

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Ion Chromatography

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following samples 1203988535 (B3HKR4DUP), 1203988536 (B3HKR4PS), 445702001 (B3HK08), 445702002 (B3HKH3), 445702004 (B3HKN1) and 445702005 (B3HKR4) were diluted because target analyte concentrations exceeded the calibration range.

Analyte	445702			
	001	002	004	005
Chloride	2X	5X	1X	2X
Nitrate	2X	5X	5X	2X
Sulfate	2X	5X	1X	2X

Miscellaneous Information

Manual Integrations
Samples 1203988535 (B3HKR4DUP), 1203988536 (B3HKR4PS), 445702001 (B3HK08), 445702002 (B3HKH3), 445702003 (B3HKM7), 445702004 (B3HKN1) and 445702005 (B3HKR4) were manually integrated to correctly position the baseline as set in the calibration standards.

Ion Chromatography

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following samples 1203988542 (B3HK52DUP), 1203988543 (B3HK52PS), 445702008 (B3HK30), 445702009 (B3HK39) and 445702010 (B3HK52) were diluted because target analyte concentrations exceeded the calibration range.

Analyte	445702		
	008	009	010
Chloride	1X	5X	1X
Nitrate	5X	5X	2X
Sulfate	5X	5X	1X

Miscellaneous Information

Manual Integrations
Samples 1203988541 (LCS), 1203988542 (B3HK52DUP), 1203988543 (B3HK52PS), 445702007 (B3HK20), 445702008 (B3HK30), 445702009 (B3HK39) and 445702010 (B3HK52) were manually integrated to correctly position the baseline as set in the calibration standards.

Alkalinity

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702	C.O.C. # W18-003-163 Page 1 of 1

Collector: ~~Kathy Turner~~ /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506-97-72	**Ice Chest No.:** ~~TLB N/A 3-12-18~~ GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** ~~TLB N/A 3-12-18~~ 7800 0358 6814 0
Protocol RCRA CO 3/8/18	**Priority:** 30 Days	**Offsite Property No.:** ~~3-12-18 N/A TLB~~ 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK08	N	W	MAR 12 2018	1131	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: Kathy Turner /CHPRC — MAR 12 2018 1158 — JCF 3/12/18	Received By: CHRIS FULTON CHPRC — MAR 12 2018 1150	Matrix *	
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	S = Soil	DS = Drum Solids
Relinquished By: CHRIS FULTON CHPRC — MAR 12 2018 1400	Received By: FEDEX	SE = Sediment	DL = Drum Liquid
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	SO = Solid	T = Tissue
Relinquished By: Fed Ex	Received By: Chakeris Taylor GEL Laboratories — 3/13/18 0905	SL = Sludge	WI = Wipe
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	W = Water	L = Liquid
Relinquished By:	Received By:	O = Oil	V = Vegetation
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 — FSR ID = FSR57066 — A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-164

Page 1 of 1

Collector: ~~Kathy Turner~~ /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506-97-72	**Ice Chest No.:** N/A 3-12-18 GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A 3-12-18 1800 0586140
Protocol RCRA KS 3/8/18	**Priority:** 30 Days	**Offsite Property No.:** N/A 3-12-18 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKH3	N		MAR 12 2018	1003	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: ~~Kathy Turner~~ /CHPRC Kathy Turner MAR 12 2018 1020	Received By: Troy Bacon CHPRC Troy L. Bacon MAR 12 2018 10 20	Matrix *
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	S = Soil, DS = Drum Solids, SE = Sediment, DL = Drum Liquid, SO = Solid, T = Tissue, SL = Sludge, WI = Wipe, W = Water, L = Liquid, O = Oil, V = Vegetation, A = Air, X = Other
Relinquished By: Troy Bacon CHPRC Troy L. Bacon MAR 12 2018 1400	Received By: FEDEX	
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	
Relinquished By: Fed Ex	Received By: Chakeris Tarpley GEL Laboratories 3/13/18 0905	
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	
Relinquished By:	Received By:	
Print First and Last Name / Signature / Date/Time	Print First and Last Name / Signature / Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/30/2018

FSR ID = FSR57424

A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702	C.O.C. # W18-003-171 Page 1 of 1

Collector: Roger Friesz Jr. /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506 -99/14	**Ice Chest No.:** TBD N/A 3-12-18 GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~ KS 3/8/18	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** TBD N/A 3-12-18 7800 0380 8140
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** ~~N/A~~ TBD 3-12-18 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKM7	N	W	3-12-18	1003	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: Roger Friesz Jr. /CHPRC	MAR 12 2018 1045	Received By: Troy Bacon CHPRC Troy L. Bacon	MAR 12 2018 1045
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: Troy Bacon CHPRC Troy L. Bacon	MAR 12 2018 1400	Received By: FEDEX	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: Fed Ex		Received By: Chakeris Tarplin GEL Laboratories	3/13/18 0905
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By:		Received By:	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 FSR ID = FSR57200 A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-172

Page 1 of 1

Collector: Roger Friesz Jr. /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506 -99/14	**Ice Chest No.:** ~~N/A~~ TLB 3-12-18 GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~ KS 3/8/18	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** ~~N/A~~ TLB 3-12-18 7800 0386840
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** N/A TLB 3-12-18 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKN1	N	W	3-12-18	0916	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: Roger Friesz Jr. /CHPRC — Print First and Last Name / Signature / MAR 12 2018 1045 Date/Time	Received By: Troy Bacon CHPRC Troy L Bacon — Print First and Last Name / Signature / MAR 12 2018 1045 Date/Time	Matrix *
Relinquished By: Troy Bacon CHPRC Troy L Bacon — Print First and Last Name / Signature / MAR 12 2018 1400 Date/Time	Received By: FEDEX — Print First and Last Name / Signature / Date/Time	S = Soil, DS = Drum Solids, SE = Sediment, DL = Drum Liquid, SO = Solid, T = Tissue, SL = Sludge, WI = Wipe, W = Water, L = Liquid, O = Oil, V = Vegetation, A = Air, X = Other
Relinquished By: Fed Ex — Print First and Last Name / Signature / Date/Time	Received By: Chakeris Tarplin GEL Laboratories — Print First and Last Name / Signature / 3/13/18 0906 Date/Time	
Relinquished By: — Print First and Last Name / Signature / Date/Time	Received By: — Print First and Last Name / Signature / Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018

FSR ID = FSR57230

A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-177

Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506-98155	**Ice Chest No.:** 073218 N/A GLWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** 073218 N/A 780D038648HD 9147
Protocol RCRA KS 3/8/18	**Priority:** 30 Days	**Offsite Property No.:** 073218 N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKR4	N	W	3-12-18	0842	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: Juan Aguilar /CHPRC — MAR 12 2018 1100	Received By: Janelle Zunker CHPRC — MAR 12 2018 1100	Matrix *
Print First and Last Name — Signature — Date/Time	Print First and Last Name — Signature — Date/Time	S = Soil, DS = Drum Solids
Relinquished By: Janelle Zunker CHPRC — MAR 12 2018 1400	Received By: FEDEX	SE = Sediment, DL = Drum Liquid
Print First and Last Name — Signature — Date/Time	Print First and Last Name — Signature — Date/Time	SO = Solid, T = Tissue
Relinquished By: Fed Ex	Received By: Chakeris Tarplin GEL Laboratories — 3/13/18 0905	SL = Sludge, WI = Wipe
Print First and Last Name — Signature — Date/Time	Print First and Last Name — Signature — Date/Time	W = Water, L = Liquid
Relinquished By:	Received By:	O = Oil, V = Vegetation
Print First and Last Name — Signature — Date/Time	Print First and Last Name — Signature — Date/Time	A = Air, X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018

FSR ID = FSR57232

A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702	C.O.C. # W18-003-179 Page 1 of 1

Collector: Roger Friesz Jr. /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506 . 99/14	**Ice Chest No.:** TLB N/A 3-12-18 GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~ RS 3/8/18	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** TLB N/A 3-12-18 780035268140
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** TLB N/A 3-12-18 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK19	N	W	3-12-18	0745	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: Roger Friesz Jr. /CHPRC — Print First and Last Name	Signature	MAR 12 2018 1045 — Date/Time	Received By: Troy Bacon CHPRC — Print First and Last Name / Signature / MAR 12 2018 1045 — Date/Time
Relinquished By: Troy Bacon CHPRC — Print First and Last Name	Signature	MAR 12 2018 1400 — Date/Time	Received By: FEDEX — Print First and Last Name / Signature / Date/Time
Relinquished By: Fed Ex — Print First and Last Name	Signature	Date/Time	Received By: Chakeris Tarpley GEL Laboratories — Print First and Last Name / Signature / 3/13/18 0905 — Date/Time
Relinquished By: — Print First and Last Name	Signature	Date/Time	Received By: — Print First and Last Name / Signature / Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 — FSR ID = FSR57239 — A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702	C.O.C. # W18-003-180 Page 1 of 1

Collector:	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506 -99/14	**Ice Chest No.:** ~~N/A~~ TLB 3-12-18 GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~ KS 3/8/18	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** ~~N/A~~ TLB 3-12-18 9780038608140
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** ~~N/A~~ TLB 3-12-18 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK20	N	W	3-12-18	0828	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: ~~Peter C. Bay Jr.~~ /CHPRC	MAR 12 2018 1045	Received By: Troy Bacon CHPRC	MAR 12 2018 1045
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: Troy Bacon CHPRC	MAR 12 2018 1400	Received By: FEDEX	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: Fed Ex		Received By: Chakeris Tarplin GEL Laboratories	3/13/18 0905
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By:		Received By:	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquid
SO	= Solid	T	= Tissue
SL	= Sludge	WI	= Wipe
W	= Water	L	= Liquid
O	= Oil	V	= Vegetation
A	= Air	X	= Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

REV. 0

Printed On 1/15/2018 FSR ID = FSR57234 A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702	C.O.C. # W18-003-182 Page 1 of 1

Collector: Juan Aguilar ICHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506-98 ISS	**Ice Chest No.:** ~~N/A~~ 9763128 GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~ ICS 3/8/18	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** ~~N/A~~ 9763128 7800 0380 5140 9147
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** ~~N/A~~ 9763128

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK30	N	W	3-12-18	0905	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: Juan Aguilar ICHPRC	Signature: MAR 12 2018	Date/Time: 1100	Received By: Janelle Zunker CHPRC	Signature: MAR 12 2018	Date/Time: 1100
Relinquished By: Janelle Zunker CHPRC	Signature: MAR 12 2018	Date/Time: 1400	Received By: FEDEX	Signature:	Date/Time:
Relinquished By: Fed Ex	Signature:	Date/Time:	Received By: Chakeris Tarplie GEL Laboratories	Signature:	Date/Time: 3/13/18 0905
Relinquished By:	Signature:	Date/Time:	Received By:	Signature:	Date/Time:

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 FSR ID = FSR57190 A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702	C.O.C. # W18-003-184 Page 1 of 1

Collector: Roger Friesz Jr. /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506 - 99/14	**Ice Chest No.:** ~~N/A~~ GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** ~~N/A~~ 8003 0384 8140
Protocol RCRA ICS 3/8/18	**Priority:** 30 Days	**Offsite Property No.:** ~~N/A~~ 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK39	N	W	3-12-18	1102	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

Relinquished By: Roger Friesz Jr. /CHPRC — Print First and Last Name / Signature / MAR 12 2018 1155 Date/Time	Received By: Janelle Zunker CHPRC — Print First and Last Name / Signature / MAR 12 2018 Date/Time	Matrix *
Relinquished By: Janelle Zunker CHPRC — Print First and Last Name / Signature / MAR 12 2018 1400 Date/Time	Received By: FEDEX — Print First and Last Name / Signature / Date/Time	S = Soil, SE = Sediment, SO = Solid, SL = Sludge, W = Water, O = Oil, A = Air; DS = Drum Solids, DL = Drum Liquid, T = Tissue, WI = Wipe, L = Liquid, V = Vegetation, X = Other
Relinquished By: Fed Ex — Print First and Last Name / Signature / Date/Time	Received By: Chakeris Tarplin GEL Laboratories — Print First and Last Name / Signature / 3/13/18 0905 Date/Time	
Relinquished By: — Print First and Last Name / Signature / Date/Time	Received By: — Print First and Last Name / Signature / Date/Time	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 — FSR ID = FSR57205 — A-6004-842 (REV 3)

04/18/2018

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445.702

C.O.C. # W18-003-187

Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018 GEL	**Logbook No.:** HNF-N-506-98155	**Ice Chest No.:** N/A GWS-731
Shipped To (Lab): ~~TestAmerica Incorporated, Rich~~ KS 3/8/18	**Method of Shipment** GOVERNMENT VEHICLE	**Bill of Lading/Air Bill No.:** N/A 7800 D3568140 9147
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** N/A

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK52	N	W	3-12-18	1038	1x125-mL P	300.0_ANIONS_IC: COMMON	48 Hours	Cool <=6C

04/18/2018

Relinquished By: Print First and Last Name	Signature	MAR 1 2 2018 1100 Date/Time	Received By: Janelle Zunker CHPRC Print First and Last Name / Signature / MAR 1 2 2018 1100 Date/Time
Relinquished By: Janelle Zunker CHPRC Print First and Last Name	Signature	MAR 1 2 2018 1400 Date/Time	Received By: FEDEX Print First and Last Name / Signature / Date/Time
Relinquished By: Fed Ex Print First and Last Name	Signature	Date/Time	Received By: Chakeris Tarplin GEL Laboratories Print First and Last Name / Signature / 3/13/18 0905 Date/Time
Relinquished By: Print First and Last Name	Signature	Date/Time	Received By: Print First and Last Name / Signature / Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018

FSR ID = FSR57237

A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-090

Page 1 of 1

Collector: CHRIS FULTON CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650	
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071	
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506 98/54	**Ice Chest No.:** GWS-660	
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7899 9121 5711	
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9145	

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HJM3	N	W	MAR 0 9 2018	1218	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B3HJM3	N	W			1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2
B3HJM5	Y	W	MAR 0 9 2018		1x500-mL G/P	6010_METALS_ICP: GW 04; 6020_METALS_ICPMS: GW 01	6 Months	HNO3 to pH <2

04/18/2018

Relinquished By: CHRIS FULTON CHPRC	Signature	MAR 0 9 2018 1255 Date/Time	Received By: SSU-1 Print First and Last Name / Signature / MAR 0 9 2018 1255 Date/Time
Relinquished By: SSU-1 Print First and Last Name	Signature	MAR 1 2 2018 0755 Date/Time	Received By: Troy Bacon CHPRC Print First and Last Name / Signature / MAR 1 2 2018 0755 Date/Time
Relinquished By: Troy Bacon CHPRC Print First and Last Name	Signature	MAR 1 2 2018 1400 Date/Time	Received By: FEDEX Print First and Last Name / Signature / Date/Time
Relinquished By: Fed Ex Print First and Last Name	Signature	Date/Time	Received By: Chakeris Tarpin GEL Laboratories Print First and Last Name / Signature / 3/13/18 0905 Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/29/2018

FSR ID = FSR57419

A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702 65105	C.O.C. # W18-003-099 Page 1 of 2

Collector: Kathy Turner /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506-97-72	**Ice Chest No.:** GWS-394
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7800 0386 8931
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKB7	N	W	MAR 12 2018	1131	1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2 / Cool <=6C
B3HKB7	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3HK07	N	W			1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B3HK07	N	W			1x500-mL G/P	6010_METALS_ICP: COMMON; 6020_METALS_ICPMS: Uranium (1)	6 Months	HNO3 to pH <2
B3HK07	N	W			4x1-L aG	8270_PHENOLIC_GC: COMMON	7/40 Days	Cool <=6C
B3HK07	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2 / Cool <=6C
B3HK07	N	W			1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3HKB6	N	W			1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2 / Cool <=6C

Relinquished By	Print First and Last Name	Signature	Date/Time	Received By	Print First and Last Name	Signature	Date/Time
Relinquished By:	Kathy Turner /CHPRC		MAR 12 2018 1150 (DTE 3/12/18)	Received By:	CHRIS FULTON CHPRC		MAR 12 2018 1150
Relinquished By:	CHRIS FULTON CHPRC		MAR 12 2018 1400	Received By:	FEDEX		
Relinquished By:	Fed Ex			Received By:	Chakeris Tarplin/ GEL Laboratories		3/13/18 0905
Relinquished By:				Received By:			

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 FSR ID = FSR57066 A-6004-842 (REV 3)

04/18/2018

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-099

Page 2 of 2

Collector: Kathy Turner /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506-97-72	**Ice Chest No.:** GWS-394
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7800 0358 8931
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKB6	N	W	MAR 12 2018	1131	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C
B3HKB8	N	W	↓	↓	1x1-L aGs*	9020_TOX: COMMON	28 Days	H2SO4 to pH <2 / Cool <=6C
B3HKB8	N	W	↓	↓	1x250-mL aG	9060_TOC: COMMON	28 Days	HCl or H2SO4 to pH <2 / Cool <=6C

04/18/2018

Relinquished By: Kathy Turner /CHPRC	MAR 12 2018 1158	Received By: CHRIS FULTON CHPRC	MAR 12 2018 1150
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: CHRIS FULTON CHPRC	MAR 12 2018 1400	Received By: FEDEX	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: Fed Ex		Received By: Shakeris Tarpley GEL Laboratories	3/13/18 0905
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By:		Received By:	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*

JF 3/12/18

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018

FSR ID = FSR57066

A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702	C.O.C. # W18-003-106 Page 1 of 1

Collector: Roger Friesz Jr. /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506 -99/14	**Ice Chest No.:** GWS-731
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 780D 038648140
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKN0	N	W	3-12-18	0916	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B3HKN0	N	W	1	1	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2
B3HKN2	Y	W	3-12-18	0916	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2

04/18/2018

Relinquished By	Print First and Last Name	Signature	Date/Time	Received By	Print First and Last Name	Signature	Date/Time
Roger Friesz Jr. /CHPRC			MAR 12 2018 1045	Troy Bacon CHPRC			MAR 12 2018 1045
Troy Bacon CHPRC			MAR 12 2018 1400	FEDEX			
Fed Ex				Chakeris Tarplin/ GEL Laboratories			3/13/18 0905

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 FSR ID = FSR57230 A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 445702	C.O.C. # W18-003-108 Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506-98/55	**Ice Chest No.:** GWS-731
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7800 3805 3140
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HKR3	N	W	3-12-18	0842	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B3HKR3	N	W	3-12-18	0842	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2
B3HKR5	Y	W	3-12-18	0842	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2

	Print First and Last Name	Signature	Date/Time
Relinquished By:	Juan Aguilar /CHPRC		MAR 12 2018 1100
Received By:	Janelle Zunker CHPRC		MAR 12 2018 1100
Relinquished By:	Janelle Zunker CHPRC		MAR 12 2018 1400
Received By:	FEDEX		
Relinquished By:	Fed Ex		
Received By:	Chakeris Tarplin/ GEL Laboratories		3/13/18 0900
Relinquished By:			
Received By:			

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 FSR ID = FSR57232 A-6004-842 (REV 3)

04/18/2018

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-109

Page 1 of 1

Collector: Roger Friesz Jr. /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506 - 99/14	**Ice Chest No.:** GWS-73(
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7800 0386 8140
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9147

POSSIBLE SAMPLE HAZARDS/REMARK

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK17	N	W	3-12-18	0745	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

04/18/2018

Relinquished By: Roger Friesz Jr. /CHPRC	MAR 1 2 2018 1045	Received By: Troy Bacon CHPRC	MAR 1 2 2018 1045
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: Troy Bacon CHPRC	MAR 1 2 2018 1400	Received By: FEDEX	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By: Fed Ex		Received By: Chakeris Tarpley, GEL Laboratories	3/13/18 0905
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*
Relinquished By:		Received By:	
Print First and Last Name	*Signature* *Date/Time*	*Print First and Last Name*	*Signature* *Date/Time*

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018

FSR ID = FSR57239

A-6004-842 (REV 3)

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-110

Page 1 of 1

Collector: Roger Friesz Jr. /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506 -99/14	**Ice Chest No.:** GWS-731
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 1800 D3867814D
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9147

POSSIBLE SAMPLE HAZARDS/REMARK

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK18	N	W	3-12-18	0825	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C

Relinquished By: Roger Friesz Jr. /CHPRC — Print First and Last Name	Signature	MAR 12 2018 1045 — Date/Time
Relinquished By: Troy Bacon CHPRC — Print First and Last Name	Signature	MAR 12 2018 1400 — Date/Time
Relinquished By: Fed Ex — Print First and Last Name	Signature	Date/Time
Relinquished By: — Print First and Last Name	Signature	Date/Time

Received By: Troy Bacon CHPRC — Print First and Last Name	Signature	MAR 12 2018 1045 — Date/Time
Received By: FEDEX — Print First and Last Name	Signature	Date/Time
Received By: Chakeris Tarplin, GEL Laboratories — Print First and Last Name	Signature	3/13/18 0905 — Date/Time
Received By: — Print First and Last Name	Signature	Date/Time

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018

FSR ID = FSR57234

A-6004-842 (REV 3)

04/18/2018

REV. 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-111

Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506-98/55	**Ice Chest No.:** GWS-731
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7800 0256 0140
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9147

POSSIBLE SAMPLE HAZARDS/REMARK
** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS
N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK31	Y	W	3-12-18	0905	1x500-mL G/P	6010_METALS_ICP: COMMON; 6020_METALS_ICPMS: Chromium (1)	6 Months	HNO3 to pH <2
B3HK29	N	W	3-12-18	0905	1x500-mL G/P	6010_METALS_ICP: COMMON; 6020_METALS_ICPMS: Chromium (1)	6 Months	HNO3 to pH <2

04/18/2018

	Print First and Last Name	Signature	Date/Time
Relinquished By:	Juan Aguilar /CHPRC		MAR 12 2018 1400
Received By:	Janelle Zunker CHPRC		MAR 12 2018 1402
Relinquished By:	Janelle Zunker CHPRC		MAR 12 2018 1400
Received By:	FEDEX		
Relinquished By:	Fed Ex		
Received By:	Chakeris Tarplin GEL Laboratories		3/13/18 0905
Relinquished By:			
Received By:			

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquid
SO = Solid	T = Tissue
SL = Sludge	WI = Wipe
W = Water	L = Liquid
O = Oil	V = Vegetation
A = Air	X = Other

FINAL SAMPLE DISPOSITION | Disposal Method (e.g., Return to customer, per lab procedure, used in process): | Disposed By: | Date/Time:

REV. 0

Printed On 1/15/2018 FSR ID = FSR57190 A-6004-842 (REV 3)

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

445702

C.O.C. # W18-003-114

Page 1 of 1

Collector: Juan Aguilar /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: W18-003	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: RCRA, MARCH 2018	**Logbook No.:** HNF-N-506 -98155	**Ice Chest No.:** GWS-731
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7450 0330 5140
Protocol RCRA	**Priority:** 30 Days	**Offsite Property No.:** 9147

POSSIBLE SAMPLE HAZARDS/REMARK

** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR / IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1

SPECIAL INSTRUCTIONS

N/A

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3HK53	Y	W	3-12-18	1038	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2
B3HK51	N	W	3-12-18	1038	1x250-mL G/P	2320_ALKALINITY: COMMON	14 Days	Cool <=6C
B3HK51	N	W	3-12-19	1038	1x500-mL G/P	6010_METALS_ICP: COMMON	6 Months	HNO3 to pH <2

04/18/2018

Relinquished By / Print First and Last Name	Signature	Date/Time	Received By / Print First and Last Name	Signature	Date/Time
Juan Aguilar /CHPRC	MAR 12 2018	1152	92 3-12-18 Janelle Zunker CHPRC	MAR 12 2018	1100
Janelle Zunker CHPRC	MAR 12 2018	1400	FEDEX		
Fed Ex			Chakeris Tarplin, GEL Laboratories		3/13/18 0905

Matrix *

S = Soil		DS = Drum Solids	
SE = Sediment		DL = Drum Liquid	
SO = Solid		T = Tissue	
SL = Sludge		WI = Wipe	
W = Water		L = Liquid	
O = Oil		V = Vegetation	
A = Air		X = Other	

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:	Date/Time:

Printed On 1/15/2018 FSR ID = FSR57237 A-6004-842 (REV 3)

REV. 0

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

HS

Client: CRC	SDG/AR/COC/Work Order: 445702
Received By: Chakeris Tarplin	Date Received: 03-13-2018
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 780003868931 780003868140 789991215711

Suspected Hazard Information	Yes	No	
Shipped as a DOT Hazardous?		X	Hazard Class Shipped: UN#:
COC/Samples marked or classified as radioactive?	X		Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 (CPM) / mR/Hr Classified as: (Rad 1) Rad 2 Rad 3
Is package, COC, and/or Samples marked HAZ?		X	If yes, select Hazards below, and contact the GEL Safety Group. PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	X			
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	X			Preservation Method: (Wet Ice) Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: 2°C
4	Daily check performed and passed on IR temperature gun?	X			**Temperature Device Serial #:** IR4-17 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	X			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	X			Sample ID's and Containers Affected: If Preservation added, Lot#:
7	Do any samples require Volatile Analysis?	X			If Yes, Are Encores or Soil Kits present? Yes___ No X (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes X No___ N/A___ (If unknown, select No) VOA vials free of headspace? Yes X No___ N/A___ Sample ID's and containers affected:
8	Samples received within holding time?	X			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	X			Sample ID's and containers affected:
10	Date & time on COC match date & time on bottles?	X			Sample ID's affected:
11	Number of containers received match number indicated on COC?	X			Sample ID's affected:
12	Are sample containers identifiable as GEL provided?			X	
13	COC form is properly signed in relinquished/received sections?	X			

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials ASF Date 3/14/18 Page 1 of 1

GL-CHL-SR-001 Rev 5

Data Review Qualifier Definitions

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 (843) 556−8171

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Qualifier	Qualifier Definition	Department	Fraction
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.		
J	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated	Organics	
P	Aroclor target analyte with greater than 25% difference between column analyses.	Organics	
C	Analyte has been confirmed by GC/MS analysis	Organics	Pesticide
B	The analyte was detected in both the associated QC blank and in the sample.	Organics	
E	Concentration exceeds the calibration range of the instrument	Organics	
A	The TIC is a suspected aldol−condensation product	Organics	Semi−Volatile
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
N	Spike Sample recovery is outside control limits.		
*	Duplicate analysis not within control limits	Inorganics	
>	Result greater than quantifiable range or greater than upper limit of the analysis range	General Chemistry	
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Inorganics	Metals
D	Results are reported from a diluted aliquot of sample.		
E	Reported value is estimated due to interferences. See comment in narrative.	Inorganics	Metals
M	Duplicate precision not met.	Inorganics	Metals
o	Analyte failed to recover within LCS limits (0rganics only)	Organics	
S	Reported value determined by the Method of Standard Additions (MSA)	Inorganics	
T	Spike and/or spike duplicate sample recovery is outside control limits.	Organics	
W	Post−digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.	Inorganics	
B	The analyte was detected in the associated method blank >/= MDC or >5% sample activity.	Radiological	
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier		
+	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995	Inorganics	
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	General Chemistry	
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Inorganics	Metals
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	General Chemistry	
<	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide	General Chemistry	
UX	Gamma Spectroscopy−−Uncertain identification	Radiological	

Laboratory Certifications

List of current GEL Certifications as of 06 April 2018

State	Certification
Alaska	17−018
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC00012
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC00012
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA180011
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122018−1
New Hampshire NELAP	205415
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	9904
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−18−13
Utah NELAP	SC000122018−26
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Semi-Volatile Analysis

Case Narrative

GC/MS Semivolatile
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL445702
Work Order #: 445702

Product: **Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry**
Analytical Method: SW846 3510C/8270D
Analytical Procedure: GL-OA-E-009 REV# 40
Analytical Batch: 1747216

Preparation Method: SW846 3510C
Preparation Procedure: GL-OA-E-013 REV# 32
Preparation Batch: 1747214

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
445702014	B3HK07
1203989125	445702014(B3HK07) Matrix Spike (MS)
1203989126	445702014(B3HK07) Matrix Spike Duplicate (MSD)
1203989701	Method Blank (MB)
1203989702	Laboratory Control Sample (LCS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CCV Requirements
All Calibration Verification Standards (CCV) did not meet the acceptance criteria as outlined in Method 8270D for sample 445702014 (B3HK07) and the associated QC. 2,4-Dinitrophenol and 4-Nitrophenol exceeded the %Drift criteria with a positive bias. Since there were no detects of the analytes in the associated sample, the biased high responses had no adverse impact on the reported data.

Quality Control (QC) Information

Laboratory Control Sample (LCS) Recovery
The LCS and/or LCSD (See Below) spike recoveries were not within the acceptance limits. The client established the limits of 70%-130%. Failures are expected. The data were reported per client request.

Sample	Analyte	Value
1203989702 (LCS)	Several	See applicable report

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL445702 GEL Work Order: 445702

The Qualifiers in this report are defined as follows:

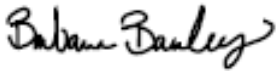
U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Barbara Bailey**

Date: 06 APR 2018 **Title: Data Validator**

Sample Data Summary

Certificate of Analysis
Sample Summary

SDG Number:	**GEL445702**	**Date Collected:**	**03/12/2018 11:31**	**Matrix:**	**WATER**
Lab Sample ID:	**445702014**	**Date Received:**	**03/13/2018 09:05**		
		Client:	**CPRC001**	**Project:**	**CPRC0W18003**
Client ID:	**B3HK07**	**Method:**	**SW846 3510C/8270D**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1747216**	**Inst:**	**MSD4.I**	**Dilution:**	**1**
Run Date:	**03/14/2018 15:41**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**03/14/2018 08:20**	**Aliquot:**	**1070 mL**	**Final Volume:**	**1 mL**
Data File:	**s031418.B\s4c1411.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
58-90-2	2,3,4,6-Tetrachlorophenol	U	2.80	ug/L	2.80	9.35
95-95-4	2,4,5-Trichlorophenol	U	2.80	ug/L	2.80	9.35
88-06-2	2,4,6-Trichlorophenol	U	2.80	ug/L	2.80	9.35
120-83-2	2,4-Dichlorophenol	U	2.80	ug/L	2.80	9.35
105-67-9	2,4-Dimethylphenol	U	2.80	ug/L	2.80	9.35
51-28-5	2,4-Dinitrophenol	U	4.67	ug/L	4.67	18.7
87-65-0	2,6-Dichlorophenol	U	2.80	ug/L	2.80	9.35
95-57-8	2-Chlorophenol	U	2.80	ug/L	2.80	9.35
534-52-1	2-Methyl-4,6-dinitrophenol	U	2.80	ug/L	2.80	9.35
88-75-5	2-Nitrophenol	U	2.80	ug/L	2.80	9.35
59-50-7	4-Chloro-3-methylphenol	U	2.80	ug/L	2.80	9.35
100-02-7	4-Nitrophenol	U	2.80	ug/L	2.80	9.35
88-85-7	Dinoseb	U	2.80	ug/L	2.80	9.35
87-86-5	Pentachlorophenol	U	2.80	ug/L	2.80	9.35
108-95-2	Phenol	U	2.80	ug/L	2.80	9.35
65794-96-9	m,p-Cresols	U	3.46	ug/L	3.46	9.35
95-48-7	o-Cresol	U	2.80	ug/L	2.80	9.35

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: April 6, 2018

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1747216											
QC1203989702 LCS											
2,3,4,6-Tetrachlorophenol	50.0			37.0	ug/L		74	(70%-130%)	JMB3	03/14/18	15:12
2,4,5-Trichlorophenol	50.0			35.3	ug/L		71	(70%-130%)			
2,4,6-Trichlorophenol	50.0			34.1	ug/L		68 *	(70%-130%)			
2,4-Dichlorophenol	50.0			36.9	ug/L		74	(70%-130%)			
2,4-Dimethylphenol	50.0			31.7	ug/L		63 *	(70%-130%)			
2,4-Dinitrophenol	50.0			43.8	ug/L		88	(70%-130%)			
2,6-Dichlorophenol	50.0			43.6	ug/L		87	(70%-130%)			
2-Chlorophenol	50.0			36.4	ug/L		73	(70%-130%)			
2-Methyl-4,6-dinitrophenol	50.0			40.8	ug/L		82	(70%-130%)			
2-Nitrophenol	50.0			38.4	ug/L		77	(70%-130%)			
4-Chloro-3-methylphenol	50.0			42.8	ug/L		86	(70%-130%)			
4-Nitrophenol	50.0			14.4	ug/L		29 *	(70%-130%)			
Pentachlorophenol	50.0			40.7	ug/L		81	(70%-130%)			

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS										
Batch 1747216										
Phenol	50.0			15.5	ug/L		31*	(70%-130%)	JMB3	03/14/18 15:12
m,p-Cresols	50.0			33.6	ug/L		67*	(70%-130%)		
o-Cresol	50.0			33.7	ug/L		67*	(70%-130%)		
**2,4,6-Tribromophenol	100			84.1	ug/L		84	(32%-124%)		
**2-Fluorobiphenyl	50.0			28.5	ug/L		57	(32%-112%)		
**2-Fluorophenol	100			44.2	ug/L		44	(15%-88%)		
**Nitrobenzene-d5	50.0			37.6	ug/L		75	(36%-115%)		
**Phenol-d5	100			29.3	ug/L		29	(15%-91%)		
**p-Terphenyl-d14	50.0			39.9	ug/L		80	(36%-121%)		
QC1203989701 MB										
2,3,4,6-Tetrachlorophenol			U	3.00	ug/L					03/14/18 14:44
2,4,5-Trichlorophenol			U	3.00	ug/L					
2,4,6-Trichlorophenol			U	3.00	ug/L					
2,4-Dichlorophenol			U	3.00	ug/L					
2,4-Dimethylphenol			U	3.00	ug/L					
2,4-Dinitrophenol			U	5.00	ug/L					

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS										
Batch 1747216										
2,6-Dichlorophenol			U	3.00	ug/L				JMB3	03/14/18 14:44
2-Chlorophenol			U	3.00	ug/L					
2-Methyl-4,6-dinitrophenol			U	3.00	ug/L					
2-Nitrophenol			U	3.00	ug/L					
4-Chloro-3-methylphenol			U	3.00	ug/L					
4-Nitrophenol			U	3.00	ug/L					
Dinoseb			U	3.00	ug/L					
Pentachlorophenol			U	3.00	ug/L					
Phenol			U	3.00	ug/L					
m,p-Cresols			U	3.70	ug/L					
o-Cresol			U	3.00	ug/L					
**2,4,6-Tribromophenol	100			81.6	ug/L		82	(32%-124%)		
**2-Fluorobiphenyl	50.0			35.4	ug/L		71	(32%-112%)		
**2-Fluorophenol	100			42.5	ug/L		43	(15%-88%)		
**Nitrobenzene-d5	50.0			41.1	ug/L		82	(36%-115%)		

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1747216											
**Phenol-d5	100				28.3	ug/L		28	(15%-91%)	JMB3	03/14/18 14:44
**p-Terphenyl-d14	50.0				44.9	ug/L		90	(36%-121%)		
QC1203989125 445702014 MS											
2,3,4,6-Tetrachlorophenol	100	U	2.80		67.6	ug/L		68	(29%-127%)		03/14/18 16:09
2,4,5-Trichlorophenol	100	U	2.80		63.8	ug/L		64	(32%-124%)		
2,4,6-Trichlorophenol	100	U	2.80		61.8	ug/L		62	(33%-124%)		
2,4-Dichlorophenol	100	U	2.80		67.3	ug/L		67	(31%-121%)		
2,4-Dimethylphenol	100	U	2.80		59.4	ug/L		59	(28%-112%)		
2,4-Dinitrophenol	100	U	4.67		80.3	ug/L		80	(15%-140%)		
2,6-Dichlorophenol	100	U	2.80		81.1	ug/L		81	(32%-127%)		
2-Chlorophenol	100	U	2.80		66.4	ug/L		66	(27%-116%)		
2-Methyl-4,6-dinitrophenol	100	U	2.80		74.7	ug/L		75	(15%-142%)		
2-Nitrophenol	100	U	2.80		70.8	ug/L		71	(35%-121%)		
4-Chloro-3-methylphenol	100	U	2.80		78.9	ug/L		79	(28%-130%)		
4-Nitrophenol	100	U	2.80		48.1	ug/L		48	(15%-88%)		
Pentachlorophenol	100	U	2.80		74.5	ug/L		74	(15%-135%)		

GEL LABORATORIES LLC
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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1747216											
Phenol	100	U	2.80		45.5	ug/L		45	(15%-80%)	JMB3	03/14/18 16:09
m,p-Cresols	100	U	3.46		72.1	ug/L		72	(31%-118%)		
o-Cresol	100	U	2.80		68.4	ug/L		68	(32%-108%)		
**2,4,6-Tribromophenol	200		59.8		157	ug/L		78	(32%-124%)		
**2-Fluorobiphenyl	100		26.4		61.5	ug/L		61	(32%-112%)		
**2-Fluorophenol	200		30.3		108	ug/L		54	(15%-88%)		
**Nitrobenzene-d5	100		29.6		70.8	ug/L		71	(36%-115%)		
**Phenol-d5	200		20.1		87.4	ug/L		44	(15%-91%)		
**p-Terphenyl-d14	100		36.5		77.2	ug/L		77	(36%-121%)		
QC1203989126 445702014 MSD											
2,3,4,6-Tetrachlorophenol	100	U	2.80		76.5	ug/L	12	77	(0%-20%)		03/14/18 16:37
2,4,5-Trichlorophenol	100	U	2.80		71.7	ug/L	12	72	(0%-20%)		
2,4,6-Trichlorophenol	100	U	2.80		70.2	ug/L	13	70	(0%-20%)		
2,4-Dichlorophenol	100	U	2.80		74.0	ug/L	9	74	(0%-20%)		
2,4-Dimethylphenol	100	U	2.80		65.1	ug/L	9	65	(0%-20%)		
2,4-Dinitrophenol	100	U	4.67		91.3	ug/L	13	91	(0%-20%)		

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1747216											
2,6-Dichlorophenol	100	U	2.80		87.8	ug/L	8	88	(0%-20%)	JMB3	03/14/18 16:37
2-Chlorophenol	100	U	2.80		71.7	ug/L	8	72	(0%-20%)		
2-Methyl-4,6-dinitrophenol	100	U	2.80		86.0	ug/L	14	86	(0%-20%)		
2-Nitrophenol	100	U	2.80		77.2	ug/L	9	77	(0%-20%)		
4-Chloro-3-methylphenol	100	U	2.80		88.9	ug/L	12	89	(0%-20%)		
4-Nitrophenol	100	U	2.80		52.6	ug/L	9	53	(0%-20%)		
Pentachlorophenol	100	U	2.80		84.8	ug/L	13	85	(0%-20%)		
Phenol	100	U	2.80		48.9	ug/L	7	49	(0%-20%)		
m,p-Cresols	100	U	3.46		78.9	ug/L	9	79	(0%-20%)		
o-Cresol	100	U	2.80		75.4	ug/L	10	75	(0%-20%)		
**2,4,6-Tribromophenol	200		59.8		174	ug/L		87	(32%-124%)		
**2-Fluorobiphenyl	100		26.4		65.8	ug/L		66	(32%-112%)		
**2-Fluorophenol	200		30.3		118	ug/L		59	(15%-88%)		
**Nitrobenzene-d5	100		29.6		78.0	ug/L		78	(36%-115%)		
**Phenol-d5	200		20.1		95.3	ug/L		48	(15%-91%)		

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS										
Batch 1747216										
**p-Terphenyl-d14	100	36.5		84.4	ug/L		84	(36%-121%)	JMB3	03/14/18 16:37

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- N Spike Sample recovery is outside control limits.
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Surrogate Recovery Report

SDG Number: GEL445702

Matrix Type: LIQUID

Sample ID	Client ID	2FP %REC	PHL %REC	NBZ %REC	FBP %REC	TBP %REC	TPH %REC
1203989701	MB for batch 1747214	43	28	82	71	82	90
1203989702	LCS for batch 1747214	44	29	75	57	84	80
445702014	B3HK07	32	21	63	56	64	78
1203989125	B3HK07MS	54	44	71	61	78	77
1203989126	B3HK07MSD	59	48	78	66	87	84

Surrogate		Acceptance Limits
2FP	= 2-Fluorophenol	(15%-88%)
PHL	= Phenol-d5	(15%-91%)
NBZ	= Nitrobenzene-d5	(36%-115%)
FBP	= 2-Fluorobiphenyl	(32%-112%)
TBP	= 2,4,6-Tribromophenol	(32%-124%)
TPH	= p-Terphenyl-d14	(36%-121%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL445702
Work Order #: 445702

Product: **Determination of Metals by ICP**
Analytical Method: SW846 3005A/6010D
Analytical Procedure: GL-MA-E-013 REV# 30
Analytical Batch: 1746665

Product: **Determination of Metals by ICP-MS**
Analytical Method: SW846 3005A/6020B
Analytical Procedure: GL-MA-E-014 REV# 32
Analytical Batch: 1746682

Preparation Method: SW846 3005A
Preparation Procedure: GL-MA-E-006 REV# 14
Preparation Batches: 1746664 and 1746681

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
445702011	B3HJM3
445702012	B3HJM5
445702014	B3HK07
445702017	B3HKN0
445702018	B3HKN2
445702019	B3HKR3
445702020	B3HKR5
445702023	B3HK31
445702024	B3HK29
445702025	B3HK53
445702026	B3HK51
1203988595	Method Blank (MB)**ICP**
1203988596	Laboratory Control Sample (LCS)
1203988599	445702011(B3HJM3L) Serial Dilution (SD)
1203988597	445702011(B3HJM3S) Matrix Spike (MS)
1203988598	445702011(B3HJM3SD) Matrix Spike Duplicate (MSD)
1203988629	Method Blank (MB)**ICP-MS**
1203988630	Laboratory Control Sample (LCS)
1203988633	445702011(B3HJM3L) Serial Dilution (SD)
1203988631	445702011(B3HJM3S) Matrix Spike (MS)
1203988632	445702011(B3HJM3SD) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Calibration Information

CRDL/PQL Requirements

The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of potassium. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 445702011 (B3HJM3), 445702012 (B3HJM5), 445702014 (B3HK07), 445702017 (B3HKN0), 445702018 (B3HKN2), 445702019 (B3HKR3), 445702020 (B3HKR5), 445702023 (B3HK31), 445702024 (B3HK29), 445702025 (B3HK53) and 445702026 (B3HK51)-ICP.

ICSA/ICSAB Statement

For the ICP-MS analysis, the ICSA solution contains analyte concentrations which are verified trace impurities indigenous to the purchased standard.

Quality Control (QC) Information

Method Blank (MB) Statement

The method blanks (MB) analyzed with this SDG met the acceptance criteria. However, where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data.

Sample	Analyte	Value
1203988595 (MB)	Silver	1.01 between (1 - 2.5)
1203988629 (MB)	Antimony	1.39 between (1 - 1.5)
	Tin	1.22 between (1 - 2.5)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL445702 GEL Work Order: 445702

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.

D Results are reported from a diluted aliquot of sample.

N Spike Sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Nik-Cole Elmore**

Date: 06 APR 2018 **Title: Data Validator**

Sample Data Summary

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702011 **BASIS:** As Received **DATE COLLECTED** 09−MAR−18

CLIENT ID: B3HJM3 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	19.3	ug/L	U	19.3	50	50	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−38−2	Arsenic	6.55	ug/L		2	5	5	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−39−3	Barium	50.8	ug/L		0.67	2	2	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−42−8	Boron	15	ug/L	U	15	50	50	1	P	HSC	03/23/18 15:36	032318−1	1746665
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−70−2	Calcium	77900	ug/L		50	200	200	1	P	HSC	03/23/18 15:36	032318−1	1746665
7440−47−3	Chromium	7.16	ug/L	B	3	10	10	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−48−4	Cobalt	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−50−8	Copper	2.4	ug/L		0.3	1	1	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	03/23/18 15:36	032318−1	1746665
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7439−95−4	Magnesium	22200	ug/L		110	300	300	1	P	HSC	03/23/18 15:36	032318−1	1746665
7439−96−5	Manganese	1	ug/L	U	1	5	5	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7439−98−7	Molybdenum	1.94	ug/L		0.2	0.5	0.5	1	MS	BAJ	03/26/18 11:52	180326−5	1746682
7440−02−0	Nickel	1.26	ug/L	B	0.6	2	2	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−09−7	Potassium	8180	ug/L		50	150	150	1	P	HSC	03/23/18 15:36	032318−1	1746665
7782−49−2	Selenium	7.58	ug/L		2	5	5	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−22−4	Silver	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−23−5	Sodium	15300	ug/L		100	300	300	1	P	HSC	03/23/18 15:36	032318−1	1746665
7440−24−6	Strontium	383	ug/L		2	10	10	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−29−1	Thorium	0.70	ug/L	U	0.7	2	2	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	BAJ	03/23/18 18:26	180323−2	1746682
7440−61−1	Uranium	5.5	ug/L		0.067	0.2	0.2	1	MS	BAJ	03/24/18 01:25	180323−4	1746682
7440−62−2	Vanadium	17.6	ug/L		1	5	5	1	P	HSC	03/23/18 15:36	032318−1	1746665
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	MS	BAJ	03/26/18 11:52	180326−5	1746682

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1
1746682	1746681	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

P	**SW846 3005A/6010D**
MS	**SW846 3005A/6020B**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702012 **BASIS:** As Received **DATE COLLECTED** 09−MAR−18

CLIENT ID: B3HJM5 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429−90−5	Aluminum	19.3	ug/L	U	19.3	50	50	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−36−0	Antimony	1	ug/L	U	1	3	3	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−38−2	Arsenic	6.41	ug/L		2	5	5	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−39−3	Barium	49.7	ug/L		0.67	2	2	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−41−7	Beryllium	0.20	ug/L	U	0.2	0.5	0.5	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−42−8	Boron	15	ug/L	U	15	50	50	1	P	HSC	03/23/18 15:46	032318−1	1746665
7440−43−9	Cadmium	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−70−2	Calcium	78800	ug/L		50	200	200	1	P	HSC	03/23/18 15:46	032318−1	1746665
7440−47−3	Chromium	6.59	ug/L	B	3	10	10	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−48−4	Cobalt	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−50−8	Copper	0.416	ug/L	B	0.3	1	1	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	03/23/18 15:46	032318−1	1746665
7439−92−1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7439−95−4	Magnesium	22500	ug/L		110	300	300	1	P	HSC	03/23/18 15:46	032318−1	1746665
7439−96−5	Manganese	1	ug/L	U	1	5	5	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7439−98−7	Molybdenum	1.87	ug/L		0.2	0.5	0.5	1	MS	BAJ	03/26/18 11:58	180326−5	1746682
7440−02−0	Nickel	0.843	ug/L	B	0.6	2	2	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−09−7	Potassium	8120	ug/L		50	150	150	1	P	HSC	03/23/18 15:46	032318−1	1746665
7782−49−2	Selenium	7.94	ug/L		2	5	5	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−22−4	Silver	0.30	ug/L	U	0.3	1	1	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−23−5	Sodium	15300	ug/L		100	300	300	1	P	HSC	03/23/18 15:46	032318−1	1746665
7440−24−6	Strontium	387	ug/L		2	10	10	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−28−0	Thallium	0.60	ug/L	U	0.6	2	2	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−29−1	Thorium	0.70	ug/L	U	0.7	2	2	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−31−5	Tin	1	ug/L	U	1	5	5	1	MS	BAJ	03/23/18 18:49	180323−2	1746682
7440−61−1	Uranium	5.66	ug/L		0.067	0.2	0.2	1	MS	BAJ	03/24/18 01:48	180323−4	1746682
7440−62−2	Vanadium	17.9	ug/L		1	5	5	1	P	HSC	03/23/18 15:46	032318−1	1746665
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	MS	BAJ	03/26/18 11:58	180326−5	1746682

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1
1746682	1746681	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

P	**SW846 3005A/6010D**
MS	**SW846 3005A/6020B**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702014 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HK07 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−39−3	Barium	35.4	ug/L		1	5	5	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−70−2	Calcium	43000	ug/L		50	200	200	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−47−3	Chromium	2.82	ug/L	B	1	5	5	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 15:49	032318−1	1746665
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	03/23/18 15:49	032318−1	1746665
7439−95−4	Magnesium	13600	ug/L		110	300	300	1	P	HSC	03/23/18 15:49	032318−1	1746665
7439−96−5	Manganese	2	ug/L	U	2	10	10	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−02−0	Nickel	1.5	ug/L	U	1.5	5	5	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−09−7	Potassium	3960	ug/L		50	150	150	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−22−4	Silver	1.15	ug/L	CB	1	5	5	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−23−5	Sodium	10700	ug/L		100	300	300	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−61−1	Uranium	0.790	ug/L		0.067	0.2	15	1	MS	BAJ	03/24/18 01:52	180323−4	1746682
7440−62−2	Vanadium	28.7	ug/L		1	5	5	1	P	HSC	03/23/18 15:49	032318−1	1746665
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	P	HSC	03/23/18 15:49	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1
1746682	1746681	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**
MS **SW846 3005A/6020B**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702017 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HKN0 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−39−3	Barium	32.6	ug/L		1	5	5	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−70−2	Calcium	31500	ug/L		50	200	200	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−47−3	Chromium	2.49	ug/L	B	1	5	5	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 15:57	032318−1	1746665
7439−89−6	Iron	30.6	ug/L	B	30	100	100	1	P	HSC	03/23/18 15:57	032318−1	1746665
7439−95−4	Magnesium	10100	ug/L		110	300	300	1	P	HSC	03/23/18 15:57	032318−1	1746665
7439−96−5	Manganese	2	ug/L	U	2	10	10	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−02−0	Nickel	1.5	ug/L	U	1.5	5	5	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−09−7	Potassium	3570	ug/L		50	150	150	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−22−4	Silver	1.11	ug/L	CB	1	5	5	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−23−5	Sodium	16700	ug/L		100	300	300	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−62−2	Vanadium	29.3	ug/L		1	5	5	1	P	HSC	03/23/18 15:57	032318−1	1746665
7440−66−6	Zinc	3.96	ug/L	B	3.3	10	10	1	P	HSC	03/23/18 15:57	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702018 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HKN2 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−39−3	Barium	32.3	ug/L		1	5	5	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−70−2	Calcium	31000	ug/L		50	200	200	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−47−3	Chromium	2.33	ug/L	B	1	5	5	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 16:00	032318−1	1746665
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	03/23/18 16:00	032318−1	1746665
7439−95−4	Magnesium	9960	ug/L		110	300	300	1	P	HSC	03/23/18 16:00	032318−1	1746665
7439−96−5	Manganese	2	ug/L	U	2	10	10	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−02−0	Nickel	1.5	ug/L	U	1.5	5	5	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−09−7	Potassium	3520	ug/L		50	150	150	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−22−4	Silver	1.2	ug/L	CB	1	5	5	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−23−5	Sodium	16500	ug/L		100	300	300	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−62−2	Vanadium	29.1	ug/L		1	5	5	1	P	HSC	03/23/18 16:00	032318−1	1746665
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	P	HSC	03/23/18 16:00	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702019 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HKR3 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−39−3	Barium	27.7	ug/L		1	5	5	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−70−2	Calcium	26800	ug/L		50	200	200	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−47−3	Chromium	5.09	ug/L		1	5	5	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 16:03	032318−1	1746665
7439−89−6	Iron	99.6	ug/L	B	30	100	100	1	P	HSC	03/23/18 16:03	032318−1	1746665
7439−95−4	Magnesium	8870	ug/L		110	300	300	1	P	HSC	03/23/18 16:03	032318−1	1746665
7439−96−5	Manganese	2	ug/L	B	2	10	10	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−02−0	Nickel	1.56	ug/L	B	1.5	5	5	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−09−7	Potassium	3270	ug/L		50	150	150	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−22−4	Silver	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−23−5	Sodium	24300	ug/L		100	300	300	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−62−2	Vanadium	27.2	ug/L		1	5	5	1	P	HSC	03/23/18 16:03	032318−1	1746665
7440−66−6	Zinc	3.96	ug/L	B	3.3	10	10	1	P	HSC	03/23/18 16:03	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702020 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HKR5 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−39−3	Barium	25.9	ug/L		1	5	5	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−70−2	Calcium	25100	ug/L		50	200	200	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−47−3	Chromium	3.65	ug/L	B	1	5	5	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 16:06	032318−1	1746665
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	03/23/18 16:06	032318−1	1746665
7439−95−4	Magnesium	8350	ug/L		110	300	300	1	P	HSC	03/23/18 16:06	032318−1	1746665
7439−96−5	Manganese	2	ug/L	U	2	10	10	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−02−0	Nickel	1.5	ug/L	U	1.5	5	5	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−09−7	Potassium	3130	ug/L		50	150	150	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−22−4	Silver	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−23−5	Sodium	23300	ug/L		100	300	300	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−62−2	Vanadium	25.7	ug/L		1	5	5	1	P	HSC	03/23/18 16:06	032318−1	1746665
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	P	HSC	03/23/18 16:06	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702023 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HK31 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−39−3	Barium	29.3	ug/L		1	5	5	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−70−2	Calcium	28400	ug/L		50	200	200	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−47−3	Chromium	150	ug/L		3	10	10	1	MS	BAJ	03/23/18 18:56	180323−2	1746682
7440−47−3	Chromium	144	ug/L		1	5	5	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 16:09	032318−1	1746665
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	03/23/18 16:09	032318−1	1746665
7439−95−4	Magnesium	9120	ug/L		110	300	300	1	P	HSC	03/23/18 16:09	032318−1	1746665
7439−96−5	Manganese	2	ug/L	U	2	10	10	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−02−0	Nickel	1.5	ug/L	U	1.5	5	5	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−09−7	Potassium	3550	ug/L		50	150	150	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−22−4	Silver	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−23−5	Sodium	23800	ug/L		100	300	300	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−62−2	Vanadium	26.3	ug/L		1	5	5	1	P	HSC	03/23/18 16:09	032318−1	1746665
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	P	HSC	03/23/18 16:09	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1
1746682	1746681	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**
MS **SW846 3005A/6020B**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702024 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HK29 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−39−3	Barium	30	ug/L		1	5	5	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−70−2	Calcium	28100	ug/L		50	200	200	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−47−3	Chromium	148	ug/L		3	10	10	1	MS	BAJ	03/23/18 18:59	180323−2	1746682
7440−47−3	Chromium	140	ug/L		1	5	5	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 16:12	032318−1	1746665
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	03/23/18 16:12	032318−1	1746665
7439−95−4	Magnesium	9190	ug/L		110	300	300	1	P	HSC	03/23/18 16:12	032318−1	1746665
7439−96−5	Manganese	2	ug/L	U	2	10	10	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−02−0	Nickel	1.5	ug/L	U	1.5	5	5	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−09−7	Potassium	3430	ug/L		50	150	150	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−22−4	Silver	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−23−5	Sodium	23500	ug/L		100	300	300	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−62−2	Vanadium	27.2	ug/L		1	5	5	1	P	HSC	03/23/18 16:12	032318−1	1746665
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	P	HSC	03/23/18 16:12	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1
1746682	1746681	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**
MS **SW846 3005A/6020B**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702025 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HK53 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−39−3	Barium	12.2	ug/L		1	5	5	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−70−2	Calcium	24900	ug/L		50	200	200	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−47−3	Chromium	2.23	ug/L	B	1	5	5	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 16:15	032318−1	1746665
7439−89−6	Iron	30	ug/L	U	30	100	100	1	P	HSC	03/23/18 16:15	032318−1	1746665
7439−95−4	Magnesium	8600	ug/L		110	300	300	1	P	HSC	03/23/18 16:15	032318−1	1746665
7439−96−5	Manganese	25.7	ug/L		2	10	10	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−02−0	Nickel	1.78	ug/L	B	1.5	5	5	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−09−7	Potassium	3300	ug/L		50	150	150	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−22−4	Silver	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−23−5	Sodium	18400	ug/L		100	300	300	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−62−2	Vanadium	22.5	ug/L		1	5	5	1	P	HSC	03/23/18 16:15	032318−1	1746665
7440−66−6	Zinc	3.3	ug/L	U	3.3	10	10	1	P	HSC	03/23/18 16:15	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL445702 **CONTRACT:** CPRC0W18003 **METHOD TYPE:** SW846

SAMPLE ID: 445702026 **BASIS:** As Received **DATE COLLECTED** 12−MAR−18

CLIENT ID: B3HK51 **LEVEL:** Low **DATE RECEIVED** 13−MAR−18

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−36−0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−38−2	Arsenic	5	ug/L	U	5	30	30	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−39−3	Barium	16.1	ug/L		1	5	5	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−43−9	Cadmium	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−70−2	Calcium	24300	ug/L		50	200	200	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−47−3	Chromium	3.61	ug/L	B	1	5	5	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−48−4	Cobalt	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−50−8	Copper	3	ug/L	U	3	10	10	1	P	HSC	03/23/18 16:18	032318−1	1746665
7439−89−6	Iron	708	ug/L		30	100	100	1	P	HSC	03/23/18 16:18	032318−1	1746665
7439−95−4	Magnesium	8520	ug/L		110	300	300	1	P	HSC	03/23/18 16:18	032318−1	1746665
7439−96−5	Manganese	31.6	ug/L		2	10	10	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−02−0	Nickel	2.77	ug/L	B	1.5	5	5	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−09−7	Potassium	3290	ug/L		50	150	150	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−22−4	Silver	1	ug/L	U	1	5	5	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−23−5	Sodium	18000	ug/L		100	300	300	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−62−2	Vanadium	23.6	ug/L		1	5	5	1	P	HSC	03/23/18 16:18	032318−1	1746665
7440−66−6	Zinc	3.5	ug/L	B	3.3	10	10	1	P	HSC	03/23/18 16:18	032318−1	1746665

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1746665	1746664	SW846 3005A	50	mL	50	mL	03/14/18	SXW1

***Analytical Methods:**

P **SW846 3005A/6010D**

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: April 6, 2018

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch 1746682											
QC1203988630 LCS											
Aluminum	2000			1860	ug/L		92.8	(80%-120%)	BAJ	03/23/18	18:23
Antimony	50.0			47.5	ug/L		95	(80%-120%)			
Arsenic	50.0			45.9	ug/L		91.9	(80%-120%)			
Barium	50.0			47.8	ug/L		95.5	(80%-120%)			
Beryllium	50.0			50.8	ug/L		102	(80%-120%)			
Cadmium	50.0			49.0	ug/L		97.9	(80%-120%)			
Chromium	50.0			46.1	ug/L		92.3	(80%-120%)			
Cobalt	50.0			46.9	ug/L		93.8	(80%-120%)			
Copper	50.0			47.0	ug/L		94	(80%-120%)			
Lead	50.0			46.8	ug/L		93.7	(80%-120%)			
Manganese	50.0			46.1	ug/L		92.2	(80%-120%)			
Molybdenum	50.0			53.9	ug/L		108	(80%-120%)		03/26/18	11:50
Nickel	50.0			46.4	ug/L		92.7	(80%-120%)		03/23/18	18:23

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1746682										
Selenium	50.0			46.4	ug/L		92.8	(80%-120%)	BAJ	03/23/18 18:23
Silver	50.0			50.4	ug/L		101	(80%-120%)		
Strontium	50.0			47.6	ug/L		95.2	(80%-120%)		
Thallium	50.0			44.4	ug/L		88.8	(80%-120%)		
Thorium	50.0			46.7	ug/L		93.3	(80%-120%)		
Tin	50.0			47.8	ug/L		95.5	(80%-120%)		
Uranium	50.0			48.3	ug/L		96.5	(80%-120%)		03/24/18 01:22
Zinc	50.0			54.5	ug/L		109	(80%-120%)		03/26/18 11:50
QC1203988629 MB										
Aluminum			U	19.3	ug/L					03/23/18 18:20
Antimony			B	1.39	ug/L					
Arsenic			U	2.00	ug/L					
Barium			U	0.670	ug/L					
Beryllium			U	0.200	ug/L					
Cadmium			U	0.300	ug/L					
Chromium			U	3.00	ug/L					

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1746682										
Cobalt			U	0.300	ug/L				BAJ	03/23/18 18:20
Copper			U	0.300	ug/L					
Lead			U	0.500	ug/L					
Manganese			U	1.00	ug/L					
Molybdenum			U	0.200	ug/L					03/26/18 11:49
Nickel			U	0.600	ug/L					03/23/18 18:20
Selenium			U	2.00	ug/L					
Silver			U	0.300	ug/L					
Strontium			U	2.00	ug/L					
Thallium			U	0.600	ug/L					
Thorium			U	0.700	ug/L					
Tin			B	1.22	ug/L					
Uranium			U	0.067	ug/L					03/24/18 01:19
Zinc			U	3.30	ug/L					03/26/18 11:49
QC1203988631 445702011 MS										
Aluminum	2000	U	19.3	2010	ug/L		100	(75%-125%)		03/23/18 18:30

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS												
Batch 1746682												
Antimony	50.0	U	1.00		47.4	ug/L		93.3	(75%-125%)	BAJ	03/23/18	18:30
Arsenic	50.0		6.55		56.5	ug/L		99.9	(75%-125%)			
Barium	50.0		50.8		101	ug/L		99.4	(75%-125%)			
Beryllium	50.0	U	0.200		54.6	ug/L		109	(75%-125%)			
Cadmium	50.0	U	0.300		47.3	ug/L		94.5	(75%-125%)			
Chromium	50.0	B	7.16		54.2	ug/L		94	(75%-125%)			
Cobalt	50.0	U	0.300		46.0	ug/L		91.7	(75%-125%)			
Copper	50.0		2.40		49.7	ug/L		94.5	(75%-125%)			
Lead	50.0	U	0.500		46.2	ug/L		92.3	(75%-125%)			
Manganese	50.0	U	1.00		47.0	ug/L		93.5	(75%-125%)			
Molybdenum	50.0		1.94		59.9	ug/L		116	(75%-125%)		03/26/18	11:53
Nickel	50.0	B	1.26		48.3	ug/L		94.1	(75%-125%)		03/23/18	18:30
Selenium	50.0		7.58		56.2	ug/L		97.3	(75%-125%)			
Silver	50.0	U	0.300		48.8	ug/L		97.5	(75%-125%)			
Strontium	50.0		383		457	ug/L		N/A	(75%-125%)			

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1746682											
Thallium	50.0	U	0.600		44.5	ug/L		88.8	(75%-125%)	BAJ	03/23/18 18:30
Thorium	50.0	U	0.700		47.7	ug/L		94.7	(75%-125%)		
Tin	50.0	U	1.00		49.0	ug/L		97.3	(75%-125%)		
Uranium	50.0		5.50		54.1	ug/L		97.2	(75%-125%)		03/24/18 01:29
Zinc	50.0	U	3.30		55.9	ug/L		107	(75%-125%)		03/26/18 11:53
QC1203988632 445702011 MSD											
Aluminum	2000	U	19.3		1930	ug/L	3.89	96.2	(0%-20%)		03/23/18 18:33
Antimony	50.0	U	1.00		47.5	ug/L	0.179	93.5	(0%-20%)		
Arsenic	50.0		6.55		54.9	ug/L	2.91	96.7	(0%-20%)		
Barium	50.0		50.8		96.1	ug/L	4.53	90.5	(0%-20%)		
Beryllium	50.0	U	0.200		53.1	ug/L	2.71	106	(0%-20%)		
Cadmium	50.0	U	0.300		47.7	ug/L	0.883	95.4	(0%-20%)		
Chromium	50.0	B	7.16		51.9	ug/L	4.21	89.5	(0%-20%)		
Cobalt	50.0	U	0.300		45.5	ug/L	0.971	90.8	(0%-20%)		
Copper	50.0		2.40		46.9	ug/L	5.72	89	(0%-20%)		
Lead	50.0	U	0.500		45.6	ug/L	1.17	91.2	(0%-20%)		

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1746682											
Manganese	50.0	U	1.00		46.2	ug/L	1.79	91.8	(0%-20%)	BAJ	03/23/18 18:33
Molybdenum	50.0		1.94		58.8	ug/L	1.83	114	(0%-20%)		03/26/18 11:55
Nickel	50.0	B	1.26		46.7	ug/L	3.34	90.9	(0%-20%)		03/23/18 18:33
Selenium	50.0		7.58		55.7	ug/L	0.96	96.2	(0%-20%)		
Silver	50.0	U	0.300		48.2	ug/L	1.36	96.2	(0%-20%)		
Strontium	50.0		383		440	ug/L	3.78	N/A	(0%-20%)		
Thallium	50.0	U	0.600		44.2	ug/L	0.724	88.2	(0%-20%)		
Thorium	50.0	U	0.700		48.3	ug/L	1.3	95.9	(0%-20%)		
Tin	50.0	U	1.00		48.0	ug/L	2.14	95.3	(0%-20%)		
Uranium	50.0		5.50		53.6	ug/L	0.882	96.2	(0%-20%)		03/24/18 01:32
Zinc	50.0	U	3.30		55.2	ug/L	1.16	105	(0%-20%)		03/26/18 11:55
QC1203988633 445702011 SDILT											
Aluminum		U	4.76	DU	96.5	ug/L	N/A		(0%-20%)		03/23/18 18:39
Antimony		U	0.727	DU	5.00	ug/L	N/A		(0%-20%)		
Arsenic			6.55	DU	10.0	ug/L	N/A		(0%-20%)		
Barium			50.8	D	9.94	ug/L	2.18		(0%-20%)		

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1746682										
Beryllium	U	0.016	DU	1.00	ug/L	N/A		(0%-20%)	BAJ	03/23/18 18:39
Cadmium	U	0.001	DU	1.50	ug/L	N/A		(0%-20%)		
Chromium	B	7.16	DU	15.0	ug/L	N/A		(0%-20%)		
Cobalt	U	0.104	DU	1.50	ug/L	N/A		(0%-20%)		
Copper		2.40	BD	0.497	ug/L	3.54		(0%-20%)		
Lead	U	0.034	DU	2.50	ug/L	N/A		(0%-20%)		
Manganese	U	0.256	DU	5.00	ug/L	N/A		(0%-20%)		
Molybdenum		1.94	BD	0.400	ug/L	2.88		(0%-20%)		03/26/18 11:57
Nickel	B	1.26	DU	3.00	ug/L	N/A		(0%-20%)		03/23/18 18:39
Selenium		7.58	DU	10.0	ug/L	N/A		(0%-20%)		
Silver	U	0.042	DU	1.50	ug/L	N/A		(0%-20%)		
Strontium		383	D	72.8	ug/L	5.02		(0%-20%)		
Thallium	U	0.062	DU	3.00	ug/L	N/A		(0%-20%)		
Thorium	U	0.360	DU	3.50	ug/L	N/A		(0%-20%)		
Tin	U	0.367	DU	5.00	ug/L	N/A		(0%-20%)		

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1746682											
Uranium			5.50	D	1.08	ug/L	1.51		(0%-20%)	BAJ	03/24/18 01:38
Zinc		U	2.62	BD	9.06	ug/L	N/A		(0%-20%)		03/26/18 11:57
Metals Analysis-ICP											
Batch 1746665											
QC1203988596 LCS											
Antimony	500				481	ug/L		96.3	(80%-120%)	HSC	03/23/18 15:34
Arsenic	500				482	ug/L		96.5	(80%-120%)		
Barium	500				482	ug/L		96.4	(80%-120%)		
Boron	500				497	ug/L		99.4	(80%-120%)		
Cadmium	500				479	ug/L		95.8	(80%-120%)		
Calcium	5000				4950	ug/L		99.1	(80%-120%)		
Chromium	500				477	ug/L		95.5	(80%-120%)		
Cobalt	500				483	ug/L		96.6	(80%-120%)		
Copper	500				485	ug/L		97.1	(80%-120%)		
Iron	5000				4850	ug/L		97	(80%-120%)		
Magnesium	5000				4930	ug/L		98.5	(80%-120%)		
Manganese	500				489	ug/L		97.7	(80%-120%)		

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1746665										
Nickel	500			473	ug/L		94.7	(80%-120%)	HSC	03/23/18 15:34
Potassium	5000			4740	ug/L		94.7	(80%-120%)		
Silver	500			487	ug/L		97.4	(80%-120%)		
Sodium	5000			4700	ug/L		94.1	(80%-120%)		
Vanadium	500			484	ug/L		96.8	(80%-120%)		
Zinc	500			475	ug/L		94.9	(80%-120%)		
QC1203988595 MB										
Antimony			U	3.50	ug/L					03/23/18 15:31
Arsenic			U	5.00	ug/L					
Barium			U	1.00	ug/L					
Boron			U	15.0	ug/L					
Cadmium			U	1.00	ug/L					
Calcium			U	50.0	ug/L					
Chromium			U	1.00	ug/L					
Cobalt			U	1.00	ug/L					
Copper			U	3.00	ug/L					

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1746665											
Iron				U	30.0	ug/L				HSC	03/23/18 15:31
Magnesium				U	110	ug/L					
Manganese				U	2.00	ug/L					
Nickel				U	1.50	ug/L					
Potassium				U	50.0	ug/L					
Silver				B	1.01	ug/L					
Sodium				U	100	ug/L					
Vanadium				U	1.00	ug/L					
Zinc				U	3.30	ug/L					
QC1203988597 445702011 MS											
Antimony	500	U	3.50		491	ug/L		97.7	(75%-125%)		03/23/18 15:39
Arsenic	500	U	5.00		504	ug/L		101	(75%-125%)		
Barium	500		52.3		541	ug/L		97.7	(75%-125%)		
Boron	500	U	15.0		507	ug/L		101	(75%-125%)		
Cadmium	500	U	1.00		482	ug/L		96.4	(75%-125%)		
Calcium	5000		77900		84000	ug/L		N/A	(75%-125%)		

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1746665											
Chromium	500		7.46		491	ug/L		96.6	(75%-125%)	HSC	03/23/18 15:39
Cobalt	500	U	1.00		477	ug/L		95.3	(75%-125%)		
Copper	500	U	3.00		498	ug/L		99.3	(75%-125%)		
Iron	5000	U	30.0		4960	ug/L		98.9	(75%-125%)		
Magnesium	5000		22200		27500	ug/L		N/A	(75%-125%)		
Manganese	500	U	2.00		487	ug/L		97.4	(75%-125%)		
Nickel	500	U	1.50		467	ug/L		93.1	(75%-125%)		
Potassium	5000		8180		12900	ug/L		94.4	(75%-125%)		
Silver	500	U	1.00		494	ug/L		98.9	(75%-125%)		
Sodium	5000		15300		20200	ug/L		98	(75%-125%)		
Vanadium	500		17.6		514	ug/L		99.3	(75%-125%)		
Zinc	500	B	7.83		485	ug/L		95.3	(75%-125%)		
QC1203988598 445702011 MSD											
Antimony	500	U	3.50		485	ug/L	1.1	96.6	(0%-20%)		03/23/18 15:41
Arsenic	500	U	5.00		504	ug/L	0.0774	101	(0%-20%)		
Barium	500		52.3		537	ug/L	0.657	96.9	(0%-20%)		

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1746665											
Boron	500	U	15.0		505	ug/L	0.409	101	(0%-20%)	HSC	03/23/18 15:41
Cadmium	500	U	1.00		480	ug/L	0.349	96.1	(0%-20%)		
Calcium	5000		77900		82800	ug/L	1.48	N/A	(0%-20%)		
Chromium	500		7.46		487	ug/L	0.761	95.9	(0%-20%)		
Cobalt	500	U	1.00		474	ug/L	0.54	94.8	(0%-20%)		
Copper	500	U	3.00		494	ug/L	0.835	98.5	(0%-20%)		
Iron	5000	U	30.0		4910	ug/L	1.1	97.8	(0%-20%)		
Magnesium	5000		22200		26900	ug/L	2.27	N/A	(0%-20%)		
Manganese	500	U	2.00		483	ug/L	0.84	96.5	(0%-20%)		
Nickel	500	U	1.50		465	ug/L	0.479	92.7	(0%-20%)		
Potassium	5000		8180		13000	ug/L	0.68	96.1	(0%-20%)		
Silver	500	U	1.00		493	ug/L	0.318	98.6	(0%-20%)		
Sodium	5000		15300		19900	ug/L	1.17	93.4	(0%-20%)		
Vanadium	500		17.6		510	ug/L	0.777	98.5	(0%-20%)		
Zinc	500	B	7.83		482	ug/L	0.49	94.9	(0%-20%)		

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1746665										
QC1203988599 445702011 SDILT										
Antimony	U	2.20	DU	17.5	ug/L	N/A		(0%-20%)	HSC	03/23/18 15:43
Arsenic	U	0.766	DU	25.0	ug/L	N/A		(0%-20%)		
Barium		52.3	D	10.6	ug/L	.864		(0%-20%)		
Boron	U	-11.7	DU	75.0	ug/L	N/A		(0%-20%)		
Cadmium	U	0.0675	DU	5.00	ug/L	N/A		(0%-20%)		
Calcium		77900	D	15700	ug/L	.713		(0%-20%)		
Chromium		7.46	BD	1.50	ug/L	.685		(0%-20%)		
Cobalt	U	0.368	DU	5.00	ug/L	N/A		(0%-20%)		
Copper	U	1.18	DU	15.0	ug/L	N/A		(0%-20%)		
Iron	U	16.5	DU	150	ug/L	N/A		(0%-20%)		
Magnesium		22200	D	4480	ug/L	.986		(0%-20%)		
Manganese	U	-0.426	DU	10.0	ug/L	N/A		(0%-20%)		
Nickel	U	1.37	DU	7.50	ug/L	N/A		(0%-20%)		
Potassium		8180	D	1600	ug/L	2.1		(0%-20%)		
Silver	U	0.0383	DU	5.00	ug/L	N/A		(0%-20%)		

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP											
Batch 1746665											
Sodium			15300	D	3060	ug/L	.147		(0%-20%)	HSC	03/23/18 15:43
Vanadium			17.6	BD	3.56	ug/L	1.01		(0%-20%)		
Zinc		B	7.83	BD	7.33	ug/L	368		(0%-20%)		

Notes:

The Qualifiers in this report are defined as follows:

- * Duplicate analysis not within control limits
- + Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- E Reported value is estimated due to interferences. See comment in narrative.
- M Duplicate precision not met.
- N Spike Sample recovery is outside control limits.
- S Reported value determined by the Method of Standard Additions (MSA)
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- W Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL445702
Work Order #: 445702

Product: **Carbon, Total Organic**
Analytical Method: SW846 9060A
Analytical Procedure: GL-GC-E-093 REV# 15
Analytical Batch: 1746313

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
445702013	B3HKB7
445702014	B3HK07
445702015	B3HKB6
445702016	B3HKB8
1203988642	Method Blank (MB)
1203988643	Laboratory Control Sample (LCS)
1203989617	445702014(B3HK07) Sample Duplicate (DUP)
1203989618	445702014(B3HK07) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Product: **Total Organic Halogens (TOX)**
Analytical Method: 9020_TOX
Analytical Procedure: GL-GC-E-007 REV# 14
Analytical Batch: 1750259

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
445702013	B3HKB7
445702014	B3HK07
445702015	B3HKB6
445702016	B3HKB8
1203996598	Method Blank (MB)
1203996599	Laboratory Control Sample (LCS)
1203996600	445702013(B3HKB7) Sample Duplicate (DUP)
1203996601	445702013(B3HKB7) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Miscellaneous Information

Additional Comments
A pair of nitrate wash blanks is analyzed at the start of the batch. Although they are designated as ICB, they are performed for calculating purposes only. The value of the nitrate wash blanks are averaged and subtracted from all samples. Neither of these values should exceed 0.6 ug Cl. The PQL limit typically applied to ICB results does not apply in this application, since the results are used only to determine background concentrations and are subtracted from all calculated results.

Breakthrough effect
Breakthrough effect: If the value for a sample is greater than the reporting limit (10 ug/L), the result for the second slug should not be greater than 25% of the combined value of the first and second slug. Results which do not meet these criteria are designated with a "Fail" comment in the Breakthrough effect column on the Logbook page; however, the "fail" designation is not applicable for samples with a result of less than 10 ug/L.

Product: **Ion Chromatography**
Analytical Method: 9056_ANIONS_IC
Analytical Procedure: GL-GC-E-086 REV# 25
Analytical Batches: 1746626 and 1746628

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
445702001	B3HK08
445702002	B3HKH3
445702003	B3HKM7
445702004	B3HKN1
445702005	B3HKR4
445702006	B3HK19
445702007	B3HK20
445702008	B3HK30
445702009	B3HK39
445702010	B3HK52
1203988533	Method Blank (MB)
1203988534	Laboratory Control Sample (LCS)
1203988535	445702005(B3HKR4) Sample Duplicate (DUP)
1203988536	445702005(B3HKR4) Post Spike (PS)
1203988540	Method Blank (MB)
1203988541	Laboratory Control Sample (LCS)
1203988542	445702010(B3HK52) Sample Duplicate (DUP)
1203988543	445702010(B3HK52) Post Spike (PS)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable, with the following exceptions.

Technical Information

Sample Dilutions
The following samples 1203988535 (B3HKR4DUP), 1203988536 (B3HKR4PS), 445702001 (B3HK08), 445702002 (B3HKH3), 445702004 (B3HKN1), 445702005 (B3HKR4), 1203988542 (B3HK52DUP), 1203988543 (B3HK52PS), 445702008 (B3HK30), 445702009 (B3HK39) and 445702010 (B3HK52) were diluted because target analyte concentrations exceeded the calibration range. Dilutions may be required for many reasons, including to minimize matrix interferences or to bring over range target analyte concentrations into the linear calibration range.

Analyte	445702						
	001	002	004	005	008	009	010
Several	2X 1X	5X 1X	5X 1X	2X 1X	5X 1X	5X 1X	2X 1X

Miscellaneous Information

Manual Integrations
Samples 1203988535 (B3HKR4DUP), 1203988536 (B3HKR4PS), 445702001 (B3HK08), 445702002 (B3HKH3), 445702003 (B3HKM7), 445702004 (B3HKN1), 445702005 (B3HKR4), 1203988541 (LCS), 1203988542 (B3HK52DUP), 1203988543 (B3HK52PS), 445702007 (B3HK20), 445702008 (B3HK30), 445702009 (B3HK39) and 445702010 (B3HK52) were manually integrated to correctly position the baseline as set in the calibration standards.

Product: **Alkalinity**
Analytical Method: 2320_ALKALINITY
Analytical Procedure: GL-GC-E-033 REV# 13
Analytical Batch: 1746708

The following samples were analyzed using the above methods and analytical procedure(s).

GEL Sample ID#	Client Sample Identification
445702011	B3HJM3
445702014	B3HK07
445702017	B3HKN0
445702019	B3HKR3
445702021	B3HK17
445702022	B3HK18
445702026	B3HK51
1203988697	Laboratory Control Sample (LCS)
1203988699	445702026(B3HK51) Sample Duplicate (DUP)

The samples in this SDG were analyzed on an "as received" basis.

Data Summary:

There are no exceptions, anomalies or deviations from the specified methods. All sample data provided in this report met the acceptance criteria specified in the analytical methods and procedures for initial calibration, continuing calibration, instrument controls and process controls where applicable.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL445702 GEL Work Order: 445702

The Qualifiers in this report are defined as follows:

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

D Results are reported from a diluted aliquot of sample.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Aubrey Kingsbury**

Date: 05 APR 2018 **Title: Analyst I**

Sample Data Summary

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HK08
Sample ID: 445702001
Matrix: WATER
Collect Date: 12-MAR-18 11:31
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Fluoride	B	333	33.0	500	ug/L		1	LXA2	03/13/18	1048	1746626	1
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Chloride	D	15900	134	400	ug/L		2	LXA2	03/13/18	1616	1746626	2
Nitrate-N	D	6260	66.0	250	ug/L		2					
Sulfate	D	35100	266	800	ug/L		2					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HKH3
Sample ID: 445702002
Matrix: WATER
Collect Date: 12-MAR-18 10:03
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Fluoride	B	285	33.0	500	ug/L		1	LXA2	03/13/18	1117	1746626	1
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Chloride	D	25000	335	1000	ug/L		5	LXA2	03/13/18	1646	1746626	2
Nitrate-N	D	9150	165	500	ug/L		5					
Sulfate	D	53000	665	2000	ug/L		5					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HKM7
Sample ID: 445702003
Matrix: WATER
Collect Date: 12-MAR-18 10:03
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride		5370	67.0	200	ug/L		1	LXA2	03/13/18	1147	1746626	1
Fluoride		542	33.0	500	ug/L		1					
Nitrate-N		4340	33.0	250	ug/L		1					
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Sulfate		16500	133	500	ug/L		1					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HKN1
Sample ID: 445702004
Matrix: WATER
Collect Date: 12-MAR-18 09:16
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride		9390	67.0	200	ug/L		1	LXA2	03/13/18	1216	1746626	1
Fluoride	B	480	33.0	500	ug/L		1					
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Sulfate		19300	133	500	ug/L		1					
Nitrate-N	D	9690	165	500	ug/L		5	LXA2	03/13/18	1716	1746626	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HKR4
Sample ID: 445702005
Matrix: WATER
Collect Date: 12-MAR-18 08:42
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Fluoride	B	444	33.0	500	ug/L		1	LXA2	03/13/18	1246	1746626	1
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Chloride	D	9940	134	400	ug/L		2	LXA2	03/13/18	1746	1746626	2
Nitrate-N	D	8920	66.0	250	ug/L		2					
Sulfate	D	20800	266	800	ug/L		2					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

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Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HK19
Sample ID: 445702006
Matrix: WATER
Collect Date: 12-MAR-18 07:45
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride	U	67.0	67.0	200	ug/L		1	JXH5	03/13/18	1054	1746628	1
Fluoride	U	33.0	33.0	500	ug/L		1					
Nitrate-N	B	119	33.0	250	ug/L		1					
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Sulfate	U	133	133	500	ug/L		1					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HK20
Sample ID: 445702007
Matrix: WATER
Collect Date: 12-MAR-18 08:28
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride		6110	67.0	200	ug/L		1	JXH5	03/13/18	1124	1746628	1
Fluoride	B	442	33.0	500	ug/L		1					
Nitrate-N		2920	33.0	250	ug/L		1					
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Sulfate		16000	133	500	ug/L		1					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HK30
Sample ID: 445702008
Matrix: WATER
Collect Date: 12-MAR-18 09:05
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride		9960	67.0	200	ug/L		1	JXH5	03/13/18	1156	1746628	1
Fluoride	B	428	33.0	500	ug/L		1					
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Nitrate-N	D	11900	165	500	ug/L		5	JXH5	03/13/18	1634	1746628	2
Sulfate	D	24200	665	2000	ug/L		5					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HK39
Sample ID: 445702009
Matrix: WATER
Collect Date: 12-MAR-18 11:02
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Fluoride	B	358	33.0	500	ug/L		1	JXH5	03/13/18	1226	1746628	1
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Chloride	D	11200	335	1000	ug/L		5	JXH5	03/13/18	1704	1746628	2
Nitrate-N	D	10100	165	500	ug/L		5					
Sulfate	D	32100	665	2000	ug/L		5					

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HK52
Sample ID: 445702010
Matrix: WATER
Collect Date: 12-MAR-18 10:38
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON "As Received"												
Chloride		9190	67.0	200	ug/L		1	JXH5	03/13/18	1257	1746628	1
Fluoride		555	33.0	500	ug/L		1					
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Sulfate		18700	133	500	ug/L		1					
Nitrate-N	D	5320	66.0	250	ug/L		2	JXH5	03/13/18	1735	1746628	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	9056_ANIONS_IC	
2	9056_ANIONS_IC	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W18-003

Client Sample ID:	B3HJM3	Project:	CPRC0W18003
Sample ID:	445702011	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	09-MAR-18 12:18		
Receive Date:	13-MAR-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis												
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"												
Alkalinity, Total as CaCO3		119000	1450	4000	ug/L			RXB5	03/14/18	1646	1746708	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HKB7
Sample ID: 445702013
Matrix: WATER
Collect Date: 12-MAR-18 11:31
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis												
9060_TOC: COMMON "As Received"												
Total Organic Carbon #1	U	330	330	1000	ug/L		1	TSM	03/15/18	2128	1746313	1
Total Organic Carbon #2	U	330	330	1000	ug/L		1					
Total Organic Carbon #3	U	330	330	1000	ug/L		1					
Total Organic Carbon #4	U	330	330	1000	ug/L		1					
Total Organic Carbon Average	U	330	330	1000	ug/L		1					
Halogen Analysis												
9020_TOX: COMMON "As Received"												
Total Organic Halogens		14.7	3.33	10.0	ug/L		1	RMJ	03/30/18	2215	1750259	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060A	
2	9020_TOX	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HK07
Sample ID: 445702014
Matrix: WATER
Collect Date: 12-MAR-18 11:31
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis												
9060_TOC: COMMON "As Received"												
Total Organic Carbon #1	U	330	330	1000	ug/L		1	TSM	03/15/18	2208	1746313	1
Total Organic Carbon #2	U	330	330	1000	ug/L		1					
Total Organic Carbon #3	U	330	330	1000	ug/L		1					
Total Organic Carbon #4	U	330	330	1000	ug/L		1					
Total Organic Carbon Average	U	330	330	1000	ug/L		1					
Halogen Analysis												
9020_TOX: COMMON "As Received"												
Total Organic Halogens		13.3	3.33	10.0	ug/L		1	RMJ	03/31/18	0004	1750259	2
Titration and Ion Analysis												
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"												
Alkalinity, Total as CaCO3		110000	1450	4000	ug/L			RXB5	03/14/18	1649	1746708	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060A	
2	9020_TOX	
3	2320_ALKALINITY	

Notes:

Column headers are defined as follows:
DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HKB6
Sample ID: 445702015
Matrix: WATER
Collect Date: 12-MAR-18 11:31
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis												
9060_TOC: COMMON "As Received"												
Total Organic Carbon #1	U	330	330	1000	ug/L		1	TSM	03/16/18	0006	1746313	1
Total Organic Carbon #2	U	330	330	1000	ug/L		1					
Total Organic Carbon #3	U	330	330	1000	ug/L		1					
Total Organic Carbon #4	U	330	330	1000	ug/L		1					
Total Organic Carbon Average	U	330	330	1000	ug/L		1					
Halogen Analysis												
9020_TOX: COMMON "As Received"												
Total Organic Halogens		14.0	3.33	10.0	ug/L		1	RMJ	03/31/18	0108	1750259	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060A	
2	9020_TOX	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF W18-003

Client Sample ID: B3HKB8
Sample ID: 445702016
Matrix: WATER
Collect Date: 12-MAR-18 11:31
Receive Date: 13-MAR-18
Collector: Client

Project: CPRC0W18003
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Carbon Analysis												
9060_TOC: COMMON "As Received"												
Total Organic Carbon #1	U	330	330	1000	ug/L		1	TSM	03/16/18	0045	1746313	1
Total Organic Carbon #2	U	330	330	1000	ug/L		1					
Total Organic Carbon #3	U	330	330	1000	ug/L		1					
Total Organic Carbon #4	U	330	330	1000	ug/L		1					
Total Organic Carbon Average	U	330	330	1000	ug/L		1					
Halogen Analysis												
9020_TOX: COMMON "As Received"												
Total Organic Halogens		14.6	3.33	10.0	ug/L		1	RMJ	03/31/18	0149	1750259	2

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9060A	
2	9020_TOX	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W18-003

Client Sample ID:	B3HKN0	Project:	CPRC0W18003
Sample ID:	445702017	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	12-MAR-18 09:16		
Receive Date:	13-MAR-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis												
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"												
Alkalinity, Total as CaCO3		94400	1450	4000	ug/L			RXB5	03/14/18	1651	1746708	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W18-003

Client Sample ID:	B3HKR3	Project:	CPRC0W18003
Sample ID:	445702019	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	12-MAR-18 08:42		
Receive Date:	13-MAR-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis												
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"												
Alkalinity, Total as CaCO3		95600	1450	4000	ug/L			RXB5	03/14/18	1654	1746708	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Report Date: April 5, 2018

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W18-003

Client Sample ID:	B3HK17	Project:	CPRC0W18003
Sample ID:	445702021	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	12-MAR-18 07:45		
Receive Date:	13-MAR-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis												
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"												
Alkalinity, Total as CaCO3	B	3600	1450	4000	ug/L			RXB5	03/14/18	1656	1746708	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration
Lc/LC: Critical Level
PF: Prep Factor
RL: Reporting Limit
SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W18-003

Client Sample ID:	B3HK18	Project:	CPRC0W18003
Sample ID:	445702022	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	12-MAR-18 08:28		
Receive Date:	13-MAR-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis												
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"												
Alkalinity, Total as CaCO3		114000	1450	4000	ug/L			RXB5	03/14/18	1658	1746708	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

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Certificate of Analysis

Report Date: April 5, 2018

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF W18-003

Client Sample ID:	B3HK51	Project:	CPRC0W18003
Sample ID:	445702026	Client ID:	CPRC001
Matrix:	WATER		
Collect Date:	12-MAR-18 10:38		
Receive Date:	13-MAR-18		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Titration and Ion Analysis												
2320_ALKALINITY: COMMON (Alkalinity only) "As Received"												
Alkalinity, Total as CaCO3		90000	1450	4000	ug/L			RXB5	03/14/18	1700	1746708	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	2320_ALKALINITY	

Notes:

Column headers are defined as follows:

DF: Dilution Factor	Lc/LC: Critical Level
DL: Detection Limit	PF: Prep Factor
MDA: Minimum Detectable Activity	RL: Reporting Limit
MDC: Minimum Detectable Concentration	SQL: Sample Quantitation Limit

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: April 5, 2018

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington

Contact: **Mr. Scot Fitzgerald**

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Carbon Analysis											
Batch 1746313											
QC1203989617 445702014 DUP											
Total Organic Carbon Average		U	330	U	330	ug/L	N/A			TSM	03/15/18 22:47
QC1203988643 LCS											
Total Organic Carbon Average	10000				9670	ug/L		96.7	(80%-120%)		03/15/18 13:48
QC1203988642 MB											
Total Organic Carbon Average				U	330	ug/L					03/15/18 13:38
QC1203989618 445702014 PS											
Total Organic Carbon Average	10.0	U	0.215		10.2	mg/L		99.9	(75%-125%)		03/15/18 23:26
Halogen Analysis											
Batch 1750259											
QC1203996600 445702013 DUP											
Total Organic Halogens			14.7		15.5	ug/L	5.16 ^		(+/-10.0)	RMJ	03/30/18 22:36
QC1203996599 LCS											
Total Organic Halogens	100				91.4	ug/L		91.4	(80%-120%)		03/30/18 21:53
QC1203996598 MB											
Total Organic Halogens				U	3.33	ug/L					03/30/18 21:29
QC1203996601 445702013 PS											
Total Organic Halogens	100		14.7		119	ug/L		105	(75%-125%)		03/30/18 23:23
Ion Chromatography											
Batch 1746626											
QC1203988535 445702005 DUP											
Chloride		D	9940	D	9940	ug/L	0.0101		(0%-20%)	LXA2	03/13/18 18:16

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography										
Batch 1746626										
Fluoride	B	444	B	443	ug/L	0.18 ^		(+/-500)	LXA2	03/13/18 13:16
Nitrate-N	D	8920	D	8920	ug/L	0.00224		(0%-20%)		03/13/18 18:16
Nitrite-N	U	33.0	U	33.0	ug/L	N/A				03/13/18 13:16
Sulfate	D	20800	D	20800	ug/L	0.0154		(0%-20%)		03/13/18 18:16
QC1203988534 LCS										
Chloride	5000			4680	ug/L		93.6	(80%-120%)		03/13/18 14:46
Fluoride	2500			2510	ug/L		100	(80%-120%)		
Nitrate-N	2500			2390	ug/L		95.6	(80%-120%)		
Nitrite-N	2500			2410	ug/L		96.4	(80%-120%)		
Sulfate	10000			9710	ug/L		97.1	(80%-120%)		
QC1203988533 MB										
Chloride			U	67.0	ug/L					03/13/18 14:16
Fluoride			U	33.0	ug/L					
Nitrate-N			U	33.0	ug/L					
Nitrite-N			U	33.0	ug/L					
Sulfate			U	133	ug/L					

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1746626											
QC1203988536 445702005 PS											
Chloride	5.00	D	4.97	D	10.3	mg/L		106	(75%-125%)	LXA2	03/13/18 18:46
Fluoride	2.50	B	0.444		2.95	mg/L		100	(75%-125%)		03/13/18 13:46
Nitrate-N	2.50	D	4.46	D	7.21	mg/L		110	(75%-125%)		03/13/18 18:46
Nitrite-N	2.50	U	0.00		2.46	mg/L		98.6	(75%-125%)		03/13/18 13:46
Sulfate	10.0	D	10.4	D	20.7	mg/L		103	(75%-125%)		03/13/18 18:46
Batch 1746628											
QC1203988542 445702010 DUP											
Chloride			9190		9220	ug/L	0.33		(0%-20%)	JXH5	03/13/18 13:28
Fluoride			555		549	ug/L	1.09 ^		(+/-500)		
Nitrate-N		D	5320	D	5310	ug/L	0.143		(0%-20%)		03/13/18 18:06
Nitrite-N		U	33.0	U	33.0	ug/L	N/A				03/13/18 13:28
Sulfate			18700		18700	ug/L	0.143		(0%-20%)		
QC1203988541 LCS											
Chloride	5000				4690	ug/L		93.7	(80%-120%)		03/13/18 15:02
Fluoride	2500				2470	ug/L		98.8	(80%-120%)		
Nitrate-N	2500				2400	ug/L		96	(80%-120%)		
Nitrite-N	2500				2450	ug/L		98	(80%-120%)		

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QC Summary

Workorder: **445702**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1746628											
Sulfate	10000				9720	ug/L		97.2	(80%-120%)	JXH5	03/13/18 15:02
QC1203988540 MB											
Chloride				U	67.0	ug/L					03/13/18 14:30
Fluoride				U	33.0	ug/L					
Nitrate-N				U	33.0	ug/L					
Nitrite-N				U	33.0	ug/L					
Sulfate				U	133	ug/L					
QC1203988543 445702010 PS											
Chloride	5.00		9.19		15.0	mg/L		116	(75%-125%)		03/13/18 13:59
Fluoride	2.50		0.555		3.03	mg/L		99.1	(75%-125%)		
Nitrate-N	2.50	D	2.66	D	5.36	mg/L		108	(75%-125%)		03/13/18 18:37
Nitrite-N	2.50	U	0.00		2.46	mg/L		98.3	(75%-125%)		03/13/18 13:59
Sulfate	10.0		18.7		29.9	mg/L		112	(75%-125%)		
Titration and Ion Analysis											
Batch 1746708											
QC1203988699 445702026 DUP											
Alkalinity, Total as CaCO3			90000		90200	ug/L	0.222		(0%-20%)	RXB5	03/14/18 17:03
QC1203988697 LCS											
Alkalinity, Total as CaCO3	100000				107000	ug/L		107	(80%-120%)		03/14/18 16:04

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QC Summary

Workorder: **445702**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

Notes:

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- N Spike Sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.