



February 22, 2018

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

Re: CHPRC SAF F16-047
Work Order: 443931
SDG: GEL443931

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on February 16, 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,

Heather Shaffer
Project Manager

Purchase Order: 304234 - 7C
Chain of Custody: F16-047-364, F16-047-367 and F16-047-373
Enclosures

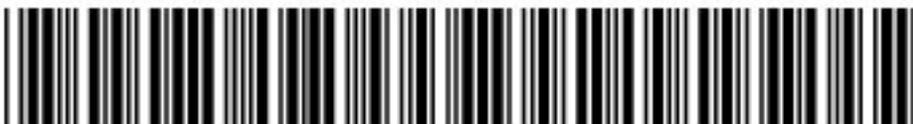


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Case Narrative

**General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF F16-047
SDG: GEL443931**

February 22, 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 February 16, 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
443931001	B3HMV7
443931002	B3HMW0
443931003	B3HMW6

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: General Chemistry.

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.



Heather Shaffer
Project Manager

**General Chemistry
 Technical Case Narrative
 CH2M Hill Plateau Remediation Company (CPRC)
 SDG #: GEL443931
 Work Order #: 443931**

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 1203973091 (B3HMW6DUP), 1203973092 (B3HMW6PS), 443931001 (B3HMV7), 443931002 (B3HMW0) and 443931003 (B3HMW6) were diluted because target analyte concentrations exceeded the calibration range.

Analyte	443931		
	001	002	003
Chloride	10X	10X	10X
Nitrate	10X	10X	1X
Sulfate	10X	10X	10X

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

COLLECTOR *Leah Wallace* **KATHY TURNER** **CHPRC**

SAMPLING LOCATION 289-T, FBR-A Effluent, Valve V25-Y40A1

ICE CHEST NO. *AW 2/15/18* **CWS-734**

SHIPPED TO *AW 2/13/18* **Richland GEL**

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST *479931*

COMPANY CONTACT SUMNER, LC

TELEPHONE NO. 376-3922

PROJECT DESIGNATION 200 West Pump & Treat - Fluidized Bed Reactor (FBR) Micronutrient Analysis

FIELD LOGBOOK NO. *HNF-N 491-19*

ACTUAL SAMPLE DEPTH *N/A*

OFFSITE PROPERTY NO. *N/A*

PROJECT COORDINATOR SUMNER, LC

SAF NO. F16-047

PURCHASE ORDER/CHARGE CODE 304234

BILL OF LADING/AIR BILL NO. *10/A* **7714 94454512**

MATRIX*
 A=Air
 DL=Drum
 L=Liquids
 DS=Drum
 S=Solids
 L=Liquid
 O=Oil
 S=Soil
 SC=Sediment
 T=Tissue
 V=Vegetation
 W=Water
 WI=Wipe
 X=Other

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

HOLDING TIME 48 Hours

TYPE OF CONTAINER P

NO. OF CONTAINER(S) 1

VOLUME 250mL

SAMPLE ANALYSIS SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SPECIAL HANDLING AND/OR STORAGE N/A

SAMPLE NO. B3HMWO

FILTERED Yes

MATRIX* WATER

SAMPLE DATE FEB 15 2018

SAMPLE TIME 0942

PRESERVATION Cool <=6C

CHAIN OF POSSESSION

RELINQUISHED BY/REMOVED FROM **KATHY TURNER** **CHPRC** *Leah Wallace* **FEB 15 2018** **1400**

SIGN/ PRINT NAMES *Leah Wallace* **FEB 15 2018** **1150**

RECEIVED BY/STORED IN *Leah Wallace* **FEB 15 2018** **1150**

DATE/TIME **FEB 15 2018** **1400**

FEDEX *C. Taylor* **2/15/18** **2845**

SPECIAL INSTRUCTIONS
 TRVL-18-079; Filtering shall be performed by SGRP Field Sampling Services using a (0.45µm) filter while in the field.
 (1) 300.0_ANIONS_IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}; 300.0_ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};

FINAL SAMPLE DISPOSITION **DISPOSAL METHOD**

PRINTED ON 1/30/2018

FSR ID = FSR57447

TRVL NUM = TRVL-18-079

DATE/TIME

DISPOSED BY

A-6003-618 (REV 3)



CH2MHill Plateau Remediation Company KATHY TURNER CHPRC		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-047-373	PAGE 1 OF 1
SAMPLING LOCATION 289-T, FBR-B Effluent, Valve V25-Y40B1		COMPANY CONTACT SUMNER, LC	TELEPHONE NO. 376-3922	PROJECT COORDINATOR SUMNER, LC	
ICE CHEST NO. N/A		PROJECT DESIGNATION 200 West Pump & Treat - Fluidized Bed Reactor (FBR) Micronutrient Analysis		REQUIRED TAT 15 Days	
SHIPPED TO FestAmerica Incorporated, Richmond, VA		FIELD LOGBOOK NO. HNF-N-471-19	ACTUAL SAMPLE DEPTH N/A	METHOD OF SHIPMENT GOVERNMENT VEHICLE	
MATRIX* A=Air DL=Drum L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other		OFFSITE PROPERTY NO. JMA 21516	BILL OF LADING/AIR BILL NO. N/A 21516	ORIGINAL	
POSSIBLE SAMPLE HAZARDS/ REMARKS *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.		PRESERVATION Cool <=6C	HOLDING TIME 48 Hours		
SPECIAL HANDLING AND/OR STORAGE N/A		TYPE OF CONTAINER P	NO. OF CONTAINER(S) 1		
		VOLUME 250ml	SAMPLE ANALYSIS SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	FILTERED	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B3HMW6	Yes	WATER	FEB 15 2018	0920	✓

CHAIN OF POSSESSION RELINQUISHED BY/REMOVED FROM KATHY TURNER CHPRC		SIGN/ PRINT NAMES RECEIVED BY/STORED IN Leahy Well Achit-RC Jedywell FEDEX C. Carplin	DATE/TIME FEB 15 2018 1150 FEB 15 2018 1400 2/16/18 0845
SPECIAL INSTRUCTIONS TRVL-18-079; Filtering shall be performed by SGRP Field Sampling Services using a (0.45µm) filter while in the field. (1) 300.0 ANIONS_IC: COMMON {Chloride, Fluoride, Nitrogen in Nitrate, Nitrogen in Nitrite, Sulfate}; 300.0 ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};		DISPOSED BY DATE/TIME	
FINAL SAMPLE DISPOSITION PRINTED ON 1/30/2018		TRVL NUM = TRVL-18-079 FSR ID = FSR57448	



SAMPLE RECEIPT & REVIEW FORM

#5

Client: CPRC SDG/AR/COC/Work Order: 443931

Received By: C. Tarplin Date Received: 16 Feb 2018

Carrier and Tracking Number
Circle Applicable:
FedEx Express FedEx Ground UPS Field Services Courier Other
77149465170 771491191873
771496298585 771496298460
771494454512

Suspected Hazard Information Yes No *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.

Shipped as a DOT Hazardous? Hazard Class Shipped: UN#:

COC/Samples marked or classified as radioactive? 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? If yes, select Hazards below, and contact the GEL Safety Group.
PCB's Flammable Foreign Soil RCRA Asbestos Beryllium Other:

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
3 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: <u>Wet Ice</u> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>2°C</u>
4 Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: <u>IR4-17</u> Secondary Temperature Device Serial # (If Applicable):
5 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6 Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>			Sample ID's and Containers Affected: If Preservation added, Lot#:
7 Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>			If Yes, Are Encores or Soil Kits present? Yes <u>No</u> <input checked="" type="checkbox"/> (If yes, take to VOA Freezer) Do VOA vials contain acid preservation? Yes <input checked="" type="checkbox"/> No <u>N/A</u> (If unknown, select No) VOA vials free of headspace? Yes <u>No</u> <input checked="" type="checkbox"/> N/A Sample ID's and containers affected: <u>B3H7Y7 has one vial w/ headspace</u> <u>B3H4B9 has one vial w/ headspace</u> <u>B3H7Y2 has one vial w/ headspace</u>
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 Are sample containers identifiable as GEL provided?			<input checked="" type="checkbox"/>	
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials MTH Date 02/19/18 Page 1 of 1

Data Review Qualifier Definitions

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 (Organics 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 \geq 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 \geq 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 \geq 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 22 February 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 Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-18-13
Utah NELAP	SC000122017-25
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

General Chem Analysis

Case Narrative

**General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL443931
Work Order #: 443931**

Product: Ion Chromatography**Analytical Method:** 9056_ANIONS_IC**Analytical Procedure:** GL-GC-E-086 REV# 25**Analytical Batch:** 1739732

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
443931001	B3HMOV7
443931002	B3HMOV0
443931003	B3HMOV6
1203973089	Method Blank (MB)
1203973090	Laboratory Control Sample (LCS)
1203973091	443931003(B3HMOV6) Sample Duplicate (DUP)
1203973092	443931003(B3HMOV6) 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 1203973091 (B3HMOV6DUP), 1203973092 (B3HMOV6PS), 443931001 (B3HMOV7), 443931002 (B3HMOV0) and 443931003 (B3HMOV6) 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	443931		
	001	002	003
Chloride	10X	10X	10X
Nitrate	10X	10X	1X
Sulfate	10X	10X	10X

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

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

**Qualifier Definition Report
for**

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL443931 GEL Work Order: 443931

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).

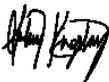
D Results are reported from a diluted aliquot of sample.

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: 22 FEB 2018****Title: Analyst I**

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 22, 2018

Company : CH2MHill Plateau Remediation Company
 Address : MSIN R3-50 CHPRC
 PO Box 1600
 Richland, Washington 99352
 Contact: Mr. Scot Fitzgerald
 Project: CHPRC SAF F16-047

Client Sample ID: B3HMV7 Project: CPRC0F16047
 Sample ID: 443931001 Client ID: CPRC001
 Matrix: WATER
 Collect Date: 15-FEB-18 10:55
 Receive Date: 16-FEB-18
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON + (add-on) "As Received"												
Fluoride	B	305	33.0	500	ug/L		1	MAR1	02/16/18	1119	1739732	1
Nitrite-N	U	33.0	33.0	250	ug/L		1					
Phosphorus in phosphate	U	67.0	67.0	500	ug/L		1					
Chloride	D	22600	670	2000	ug/L		10	MAR1	02/16/18	1413	1739732	2
Nitrate-N	D	28200	330	1000	ug/L		10					
Sulfate	D	55700	1330	4000	ug/L		10					

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 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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 22, 2018

Company : CH2MHill Plateau Remediation Company
 Address : MSIN R3-50 CHPRC
 PO Box 1600
 Richland, Washington 99352
 Contact: Mr. Scot Fitzgerald
 Project: CHPRC SAF F16-047

Client Sample ID: B3HMW0 Project: CPRC0F16047
 Sample ID: 443931002 Client ID: CPRC001
 Matrix: WATER
 Collect Date: 15-FEB-18 09:42
 Receive Date: 16-FEB-18
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON + (add-on) "As Received"												
Fluoride	B	300	33.0	500	ug/L		1	MAR1	02/16/18	1148	1739732	1
Nitrite-N	B	95.1	33.0	250	ug/L		1					
Phosphorus in phosphate		870	67.0	500	ug/L		1					
Chloride	D	28600	670	2000	ug/L		10	MAR1	02/16/18	1804	1739732	2
Nitrate-N	D	5390	330	1000	ug/L		10					
Sulfate	D	71100	1330	4000	ug/L		10					

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 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

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: February 22, 2018

Company : CH2MHill Plateau Remediation Company
 Address : MSIN R3-50 CHPRC
 PO Box 1600
 Richland, Washington 99352
 Contact: Mr. Scot Fitzgerald
 Project: CHPRC SAF F16-047

Client Sample ID: B3HMW6 Project: CPRC0F16047
 Sample ID: 443931003 Client ID: CPRC001
 Matrix: WATER
 Collect Date: 15-FEB-18 09:20
 Receive Date: 16-FEB-18
 Collector: Client

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography												
9056_ANIONS_IC: COMMON + (add-on) "As Received"												
Fluoride	B	302	33.0	500	ug/L		1	MAR1	02/16/18	1217	1739732	1
Nitrate-N		423	33.0	250	ug/L		1					
Nitrite-N	B	95.1	33.0	250	ug/L		1					
Phosphorus in phosphate		770	67.0	500	ug/L		1					
Chloride	D	23400	670	2000	ug/L		10	MAR1	02/16/18	1833	1739732	2
Sulfate	D	59300	1330	4000	ug/L		10					

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 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: February 22, 2018

Page 1 of 3

CH2MHill Plateau Remediation Company

MSIN R3-50 CHPRC

PO Box 1600

Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 443931

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	1739732										
QC1203973091	443931003	DUP									
Chloride	D	23400	D	23600	ug/L	0.588		(0%-20%)	MAR1	02/16/18	19:02
Fluoride	B	302	B	308	ug/L	2	^	(+/-500)		02/16/18	17:06
Nitrate-N		423		432	ug/L	2.25	^	(+/-250)			
Nitrite-N	B	95.1	B	102	ug/L	6.81	^	(+/-250)			
Phosphorus in phosphate		770		788	ug/L	2.37	^	(+/-500)			
Sulfate	D	59300	D	59200	ug/L	0.179		(0%-20%)		02/16/18	19:02
QC1203973090	LCS										
Chloride	5000			4900	ug/L			98.1	(80%-120%)	02/16/18	16:37
Fluoride	2500			2580	ug/L			103	(80%-120%)		
Nitrate-N	2500			2510	ug/L			100	(80%-120%)		
Nitrite-N	2500			2470	ug/L			98.9	(80%-120%)		
Phosphorus in phosphate	1250			1280	ug/L			103	(80%-120%)		
Sulfate	10000			10000	ug/L			100	(80%-120%)		
QC1203973089	MB										
Chloride			U	67.0	ug/L					02/16/18	16:09

GEL LABORATORIES LLC

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

QC Summary

Workorder: 443931

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Ion Chromatography											
Batch	1739732										
Fluoride			U	33.0	ug/L				MAR1	02/16/18	16:09
Nitrate-N			U	33.0	ug/L						
Nitrite-N			U	33.0	ug/L						
Phosphorus in phosphate			U	67.0	ug/L						
Sulfate			U	133	ug/L						
QC1203973092	443931003 PS										
Chloride	5.00	D	2.34	D	7.39	mg/L	101	(75%-125%)		02/16/18	19:31
Fluoride	2.50	B	0.302		2.88	mg/L	103	(75%-125%)		02/16/18	17:35
Nitrate-N	2.50		0.423		2.79	mg/L	94.9	(75%-125%)			
Nitrite-N	2.50	B	0.0951		2.38	mg/L	91.4	(75%-125%)			
Phosphorus in phosphate	1.25		0.770		2.03	mg/L	101	(75%-125%)			
Sulfate	10.0	D	5.93	D	16.2	mg/L	102	(75%-125%)		02/16/18	19:31

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 \geq 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.

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QC Summary

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