

June 23, 2016



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June 23, 2016

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

Re: CHPRC SAF F16-042
Work Order: 398318
SDG: GEL398318

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on May 27, 2016. 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,

B Luthman
Brielle Luthman for
Heather Shaffer
Project Manager

Purchase Order: 304070 7H
Chain of Custody: F16-042-001 and F16-042-006
Enclosures



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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF F16-042
SDG: GEL398318

June 23, 2016

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 May 27, 2016, 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 and DER.

Sample Identification

The laboratory received the following samples:

Laboratory Identification	Sample Description
398318001	B35VD7
398318002	B35VF2

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 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.

June 23, 2016

B. Luthman
Brielle Luthman for
Heather Shaffer
Project Manager

Technical Case Narrative
CH2M Hill Plateau Remediation Company (CPRC)
SDG #: GEL398318
Work Order #: 398318

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. 398318001 (B35VD7) and 398318002 (B35VF2).

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 exception criteria with the exception of antimony. In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203557722 (MB).

Technical Information

Sample Dilutions

Samples 398318001 (B35VD7) and 398318002 (B35VF2) were diluted to ensure that the analyte concentrations were within the linear calibration range of the instrument.

Analyte	398318	
	001	002
Manganese	5X	5X

General Chemistry

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

1516

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-042-001	PAGE 1 OF 1
COLLECTOR	Frank Hill CHPRC	COMPANY CONTACT	TODAK, D	PROJECT COORDINATOR	TODAK, D
SAMPLING LOCATION	C9400, I-005	PROJECT DESIGNATION	100-NR-2 Drilling - Water	SAF NO.	F16-042
ICE CHEST NO.	G05-517	FIELD LOGBOOK NO.	HNF-N-645 4-11	ACTUAL SAMPLE DEPTH	65.5 ft
SHIPPED TO	GEL Laboratories, LLC	OFFSITE PROPERTY NO.	6660	COA	304070
MATRIX*	A=Air DL=Drum L=Liquid DS=Drum S=Solids L=Liquid O=Oil S=Soil SF=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	PRESCRIPTION	HNO3 to pH <2 Cool <=6C	BILL OF LADING/AIR BILL NO.	776380874849
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. NA	HOLDING TIME	6 Months		
SPECIAL HANDLING AND/OR STORAGE		TYPE OF CONTAINER	G/P		
		NO. OF CONTAINER(S)	1		
		VOLUME	500mL		
		SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS (Alkalinity)		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B35VD7	WATER	MAY 26 2016	0815		

398282 as 6/27/16
398318

CHAIN OF POSSESSION		SIGN/PRINT NAMES	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
Frank Hill CHPRC	MAY 26 2016	FEDEX FEDEX	MAY 26 2016
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RD*		M. Santos	5-27-16 0930
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME

SPECIAL INSTRUCTIONS
(1) 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Selenium};
6020_METALS_ICPMS: COMMON (Add-on) {Antimony, Arsenic, Manganese, Nickel, Silver, Strontium, Vanadium, Zinc};
6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium}; 6010_METALS_ICP: COMMON (Add-on) {Phosphorus};
All Samples Filtered

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-042-006	PAGE 1 OF 1
COLLECTOR	Frank Hall CHPRC	COMPANY CONTACT	TODAK, D	PROJECT COORDINATOR	TODAK, D
SAMPLING LOCATION	C9400, I-005	PROJECT DESIGNATION	100-NR-2 Drilling - Water	SAF NO.	F16-042
ICE CHEST NO.	8005-517	FIELD LOGBOOK NO.	HNF-N-645 4-11	COA	304070
SHIPPED TO	GEL Laboratories, LLC	OFFSITE PROPERTY NO.	6660	BILL OF LADING/AIR BILL NO.	7763 8087 4849

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS	PRESERVATION	HNO3 to pH
A=Air	*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. NA	HOLDING TIME	<2
DL=Drum		TYPE OF CONTAINER	6 Months
L=Liquid		NO. OF CONTAINER(S)	G/P
O=Oil		VOLUME	1
S=Soil		SAMPLE ANALYSIS	500ml
SE=Sediment		SPECIAL HANDLING AND/OR STORAGE	SEE ITEM (1) IN SPECIAL INSTRUCTIONS
T=Tissue		SAMPLE NO.	B35VF2
V=Vegetation		MATRIX*	WATER
W=Water		SAMPLE DATE	MAY 26 2016
WI=Wipe		SAMPLE TIME	0815
X=Other			

398882
398882
398882

FILTER

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	FILTER	
Frank Hall	MAY 26 2016	FEDEX	MAY 26 2016	(1) 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Selenium};	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	6020_METALS_ICPMS: COMMON (Add-on) {Antimony, Arsenic, Manganese, Nickel, Silver, Strontium, Vanadium, Zinc};	
Frank Hall	MAY 26 2016	M. K. ...	5-27-16 0930	6010_METALS_ICP: COMMON {Calcium, Iron, Magnesium, Potassium, Sodium}; 6010_METALS_ICP: COMMON (Add-on) {Phosphorus};	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	FILTER	
Frank Hall	MAY 26 2016				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Frank Hall	MAY 26 2016				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Frank Hall	MAY 26 2016				
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME		
Frank Hall	MAY 26 2016				
LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME		
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME		



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CPRC</u>	SDG/AR/COC/Work Order: <u>790282 vs 3/27/16 398318</u>
Received By: <u>MLC</u>	Date Received: <u>5-27-16</u>
Suspected Hazard Information	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No *If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	<input checked="" type="checkbox"/> Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>0/0/0</u>
Classified Radioactive II or III by RSO?	<input checked="" type="checkbox"/> If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	<input checked="" type="checkbox"/>
Package, COC, and/or Samples marked as beryllium or asbestos containing?	<input checked="" type="checkbox"/> If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	<input checked="" type="checkbox"/> Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input checked="" type="checkbox"/>

Sample Receipt Criteria		Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius <u>2° 3°</u>
2a	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <u>130461962</u> Secondary Temperature Device Serial # (if Applicable):
3	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
4	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's, containers affected and observed pH:
6	Do Low Level Perchlorate samples have headspace as required?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Preservation added, Lot#: Sample ID's and containers affected:
7	VOA vials contain acid preservation?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(If unknown, select No)
8	VOA vials free of headspace (defined as < 6mm bubble)?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
9	Are Encore containers present?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	(if yes, immediately deliver to Volatiles laboratory)
10	Samples received within holding time?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID's and tests affected:
11	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
12	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
13	Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
14	Are sample containers identifiable as GEL provided?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
15	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
16	Carrier and tracking number.				Circle Applicable: FedEx Air <u>7763</u> FedEx Ground 8384 UPS 4157 Field Services 20 Courier 7472 1516 30 Other 7472 1674 30 8087 4849 20

Comments (Use Continuation Form if needed):

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 associated QC sample blank has a result $\geq 2X$ the MDA and, after corrections, result is \geq MDA for this sample	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 23 June 2016

State	Certification
Alaska	UST-0110
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	LA160006
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122016-1
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
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235-16-11
Utah NELAP	SC000122016-20
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL398318
Work Order #: 398318

Product: Determination of Metals by ICP

Analytical Method: 6010_METALS_ICP

Analytical Procedure: GL-MA-E-013 REV# 26

Analytical Batch: 1570819

Product: Determination of Metals by ICP-MS

Analytical Method: 6020_METALS_ICPMS

Analytical Procedure: GL-MA-E-014 REV# 28

Analytical Batch: 1570822

Preparation Method: SW846 3005A

Preparation Procedure: GL-MA-E-006 REV# 13

Preparation Batches: 1570818 and 1570821

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
398318001	B35VD7
398318002	B35VF2
1203557709	Method Blank (MB)ICP
1203557710	Laboratory Control Sample (LCS)
1203557713	398282001(NonSDGL) Serial Dilution (SD)
1203557711	398282001(NonSDGS) Matrix Spike (MS)
1203557712	398282001(NonSDGSD) Matrix Spike Duplicate (MSD)
1203557722	Method Blank (MB)ICP-MS
1203557723	Laboratory Control Sample (LCS)
1203557726	398282001(NonSDGL) Serial Dilution (SD)
1203557724	398282001(NonSDGS) Matrix Spike (MS)
1203557725	398282001(NonSDGSD) 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. 398318001 (B35VD7) and 398318002 (B35VF2)-ICP.

Quality Control (QC) Information

Method Blank (MB) Statement

The method blanks (MB) analyzed with this SDG met the exception criteria with the exception of antimony. In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203557722 (MB)-ICP-MS.

Technical Information

Sample Dilutions

Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. Samples 398318001 (B35VD7) and 398318002 (B35VF2)-ICP-MS were diluted to ensure that the analyte concentrations were within the linear calibration range of the instrument.

Analyte	398318	
	001	002
Manganese	5X	5X

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: GEL398318 GEL Work Order: 398318

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).
- 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: Nik-Cole Elmore

Date: 23 JUN 2016

Title: Data Validator

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL398318

CONTRACT: CPRC0F16042

METHOD TYPE: SW846

SAMPLE ID:398318001

BASIS: As Received

DATE COLLECTED 26-MAY-16

CLIENT ID: B35VD7

LEVEL: Low

DATE RECEIVED 27-MAY-16

MATRIX: WATER

%SOLIDS: 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	262	ug/L		15	50	50	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-36-0	Antimony	1	ug/L	U	1	3	3	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-38-2	Arsenic	1.7	ug/L	U	1.7	5	5	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-39-3	Barium	60.7	ug/L		0.6	2	2	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-43-9	Cadmium	0.110	ug/L	U	0.11	1	1	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-70-2	Calcium	54700	ug/L		50	200	200	1	P	JWJ	05/31/16 20:45	053116B-1	1570819
7440-47-3	Chromium	2	ug/L	U	2	10	10	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-48-4	Cobalt	1.16	ug/L		0.1	1	1	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-50-8	Copper	2	ug/L		0.35	1	1	1	MS	PRB	06/08/16 23:33	160608-4	1570822
7439-89-6	Iron	488	ug/L		30	100	100	1	P	JWJ	05/31/16 20:45	053116B-1	1570819
7439-92-1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7439-95-4	Magnesium	11600	ug/L		110	300	300	1	P	JWJ	05/31/16 20:45	053116B-1	1570819
7439-96-5	Manganese	311	ug/L	D	5	25	25	5	MS	BCD1	06/06/16 18:34	160606-3	1570822
7439-98-7	Molybdenum	22.3	ug/L		0.165	0.5	0.5	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-02-0	Nickel	3.48	ug/L		0.5	2	2	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7723-14-0	Phosphorous	60	ug/L	U	60	150	150	1	P	JWJ	05/31/16 20:45	053116B-1	1570819
7440-09-7	Potassium	7190	ug/L		50	150	150	1	P	JWJ	05/31/16 20:45	053116B-1	1570819
7782-49-2	Selenium	2.67	ug/L	B	1.5	5	5	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-22-4	Silver	0.20	ug/L	U	0.2	1	1	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-23-5	Sodium	53300	ug/L		100	300	300	1	P	JWJ	05/31/16 20:45	053116B-1	1570819
7440-24-6	Strontium	253	ug/L		2	10	10	1	MS	BCD1	06/03/16 17:03	160603-2	1570822
7440-62-2	Vanadium	4.5	ug/L	U	4.5	10	10	1	MS	PRB	06/08/16 23:33	160608-4	1570822
7440-66-6	Zinc	3.55	ug/L	B	3.5	10	10	1	MS	BCD1	06/03/16 17:03	160603-2	1570822

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1570819	1570818	SW846 3005A	50	mL	50	mL	05/31/16	SXW1
1570822	1570821	SW846 3005A	50	mL	50	mL	05/31/16	SXW1

***Analytical Methods:**

P SW846 3005A/6010C
MS SW846 3005A/6020A

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL398318

CONTRACT: CPRC0F16042

METHOD TYPE: SW846

SAMPLE ID:398318002

BASIS: As Received

DATE COLLECTED 26-MAY-16

CLIENT ID: B35VF2

LEVEL: Low

DATE RECEIVED 27-MAY-16

MATRIX: WATER

%SOLIDS: 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7429-90-5	Aluminum	276	ug/L		15	50	50	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-36-0	Antimony	1	ug/L	U	1	3	3	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-38-2	Arsenic	1.7	ug/L	U	1.7	5	5	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-39-3	Barium	62.1	ug/L		0.6	2	2	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-43-9	Cadmium	0.110	ug/L	U	0.11	1	1	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-70-2	Calcium	53800	ug/L		50	200	200	1	P	JWJ	05/31/16 20:48	053116B-1	1570819
7440-47-3	Chromium	2	ug/L	U	2	10	10	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-48-4	Cobalt	1.12	ug/L		0.1	1	1	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-50-8	Copper	2.08	ug/L		0.35	1	1	1	MS	PRB	06/08/16 23:36	160608-4	1570822
7439-89-6	Iron	502	ug/L		30	100	100	1	P	JWJ	05/31/16 20:48	053116B-1	1570819
7439-92-1	Lead	0.50	ug/L	U	0.5	2	2	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7439-95-4	Magnesium	11500	ug/L		110	300	300	1	P	JWJ	05/31/16 20:48	053116B-1	1570819
7439-96-5	Manganese	294	ug/L	D	5	25	25	5	MS	BCD1	06/06/16 18:38	160606-3	1570822
7439-98-7	Molybdenum	22.3	ug/L		0.165	0.5	0.5	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-02-0	Nickel	3.72	ug/L		0.5	2	2	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7723-14-0	Phosphorous	60	ug/L	U	60	150	150	1	P	JWJ	05/31/16 20:48	053116B-1	1570819
7440-09-7	Potassium	7200	ug/L		50	150	150	1	P	JWJ	05/31/16 20:48	053116B-1	1570819
7782-49-2	Selenium	3.18	ug/L	B	1.5	5	5	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-22-4	Silver	0.20	ug/L	U	0.2	1	1	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-23-5	Sodium	52600	ug/L		100	300	300	1	P	JWJ	05/31/16 20:48	053116B-1	1570819
7440-24-6	Strontium	249	ug/L		2	10	10	1	MS	BCD1	06/03/16 17:10	160603-2	1570822
7440-62-2	Vanadium	4.5	ug/L	U	4.5	10	10	1	MS	PRB	06/08/16 23:36	160608-4	1570822
7440-66-6	Zinc	3.5	ug/L	U	3.5	10	10	1	MS	BCD1	06/03/16 17:10	160603-2	1570822

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1570819	1570818	SW846 3005A	50	mL	50	mL	05/31/16	SXW1
1570822	1570821	SW846 3005A	50	mL	50	mL	05/31/16	SXW1

***Analytical Methods:**

P SW846 3005A/6010C
MS SW846 3005A/6020A

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: June 23, 2016

CH2MHill Plateau Remediation Company

MSIN R3-50 CHPRC

PO Box 1600

Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 398318

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1570822										
QC1203557723	LCS										
Aluminum	2000			2000	ug/L		100	(80%-120%)	BCD1	06/03/16	15:16
Antimony	50.0			52.2	ug/L		104	(80%-120%)			
Arsenic	50.0			51.6	ug/L		103	(80%-120%)			
Barium	50.0			49.0	ug/L		98	(80%-120%)			
Cadmium	50.0			50.7	ug/L		101	(80%-120%)			
Chromium	50.0			50.9	ug/L		102	(80%-120%)			
Cobalt	50.0			50.9	ug/L		102	(80%-120%)			
Copper	50.0			53.7	ug/L		107	(80%-120%)	PRB	06/08/16	22:42
Lead	50.0			50.4	ug/L		101	(80%-120%)	BCD1	06/03/16	15:16
Manganese	50.0			49.1	ug/L		98.2	(80%-120%)			
Molybdenum	50.0			51.7	ug/L		103	(80%-120%)			
Nickel	50.0			51.5	ug/L		103	(80%-120%)			
Selenium	50.0			54.9	ug/L		110	(80%-120%)			
Silver	50.0			52.9	ug/L		106	(80%-120%)			
Strontium	50.0			56.3	ug/L		113	(80%-120%)			
Vanadium	50.0			58.3	ug/L		117	(80%-120%)	PRB	06/08/16	22:42
Zinc	50.0			53.8	ug/L		108	(80%-120%)	BCD1	06/03/16	15:16
QC1203557722	MB										
Aluminum			U	15.0	ug/L					06/03/16	15:10
Antimony			B	1.27	ug/L						

GEL LABORATORIES LLC

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

QC Summary

Workorder: 398318

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1570822										
Arsenic			U	1.70	ug/L						
Barium			U	0.600	ug/L				BCD1	06/03/16	15:10
Cadmium			U	0.110	ug/L						
Chromium			U	2.00	ug/L						
Cobalt			U	0.100	ug/L						
Copper			U	0.350	ug/L				PRB	06/08/16	22:39
Lead			U	0.500	ug/L				BCD1	06/03/16	15:10
Manganese			U	1.00	ug/L						
Molybdenum			U	0.165	ug/L						
Nickel			U	0.500	ug/L						
Selenium			U	1.50	ug/L						
Silver			U	0.200	ug/L						
Strontium			U	2.00	ug/L						
Vanadium			U	4.50	ug/L				PRB	06/08/16	22:39
Zinc			U	3.50	ug/L				BCD1	06/03/16	15:10
QC1203557724 398282001 MS											
Aluminum	2000	U	15.0	2040	ug/L		102	(75%-125%)		06/03/16	15:30
Antimony	50.0	U	1.00	52.0	ug/L		103	(75%-125%)			
Arsenic	50.0	U	1.70	51.1	ug/L		102	(75%-125%)			
Barium	50.0	U	0.600	50.0	ug/L		99.7	(75%-125%)			
Cadmium	50.0	U	0.110	50.8	ug/L		101	(75%-125%)			
Chromium	50.0	U	2.00	51.3	ug/L		102	(75%-125%)			
Cobalt	50.0	U	0.100	53.2	ug/L		106	(75%-125%)			

GEL LABORATORIES LLC

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

QC Summary

Workorder: 398318

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1570822										
Copper	50.0	B	0.400	53.8	ug/L		107	(75%-125%)	PRB	06/08/16	22:48
Lead	50.0	U	0.500	49.6	ug/L		98.9	(75%-125%)	BCD1	06/03/16	15:30
Manganese	50.0	U	1.00	50.4	ug/L		100	(75%-125%)			
Molybdenum	50.0	U	0.165	50.8	ug/L		101	(75%-125%)			
Nickel	50.0	U	0.500	51.9	ug/L		103	(75%-125%)			
Selenium	50.0	B	1.71	54.5	ug/L		106	(75%-125%)			
Silver	50.0	U	0.200	52.4	ug/L		105	(75%-125%)			
Strontium	50.0	U	2.00	56.8	ug/L		113	(75%-125%)			
Vanadium	50.0	U	4.50	56.4	ug/L		105	(75%-125%)	PRB	06/08/16	22:48
Zinc	50.0	U	3.50	52.7	ug/L		103	(75%-125%)	BCD1	06/03/16	15:30
QC1203557725 398282001 MSD											
Aluminum	2000	U	15.0	2060	ug/L	1.04	103	(0%-20%)		06/03/16	15:36
Antimony	50.0	U	1.00	51.7	ug/L	0.602	102	(0%-20%)			
Arsenic	50.0	U	1.70	52.6	ug/L	2.74	105	(0%-20%)			
Barium	50.0	U	0.600	49.7	ug/L	0.62	99.1	(0%-20%)			
Cadmium	50.0	U	0.110	50.3	ug/L	0.984	100	(0%-20%)			
Chromium	50.0	U	2.00	51.3	ug/L	0.0624	102	(0%-20%)			
Cobalt	50.0	U	0.100	50.8	ug/L	4.61	101	(0%-20%)			
Copper	50.0	B	0.400	54.0	ug/L	0.363	107	(0%-20%)	PRB	06/08/16	22:52
Lead	50.0	U	0.500	50.8	ug/L	2.57	101	(0%-20%)	BCD1	06/03/16	15:36
Manganese	50.0	U	1.00	50.0	ug/L	0.772	99.7	(0%-20%)			
Molybdenum	50.0	U	0.165	51.9	ug/L	2.14	104	(0%-20%)			

GEL LABORATORIES LLC

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

QC Summary

Workorder: 398318

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1570822										
Nickel	50.0	U	0.500		51.8	ug/L	0.237	103	(0%-20%)	BCD1	06/03/16 15:36
Selenium	50.0	B	1.71		56.3	ug/L	3.22	109	(0%-20%)		
Silver	50.0	U	0.200		52.3	ug/L	0.252	104	(0%-20%)		
Strontium	50.0	U	2.00		56.8	ug/L	0.0793	113	(0%-20%)		
Vanadium	50.0	U	4.50		59.4	ug/L	5.1	111	(0%-20%)	PRB	06/08/16 22:52
Zinc	50.0	U	3.50		54.9	ug/L	4.15	108	(0%-20%)	BCD1	06/03/16 15:36
QC1203557726 398282001 SDILT											
Aluminum		U	10.5	DU	75.0	ug/L	N/A		(0%-10%)		06/03/16 15:50
Antimony		U	0.467	DU	5.00	ug/L	N/A		(0%-10%)		
Arsenic		U	0.185	DU	8.50	ug/L	N/A		(0%-10%)		
Barium		U	0.132	DU	3.00	ug/L	N/A		(0%-10%)		
Cadmium		U	0.074	DU	0.550	ug/L	N/A		(0%-10%)		
Chromium		U	0.492	DU	10.0	ug/L	N/A		(0%-10%)		
Cobalt		U	0.072	DU	0.500	ug/L	N/A		(0%-10%)		
Copper		B	0.400	DU	1.75	ug/L	N/A		(0%-10%)	PRB	06/08/16 22:58
Lead		U	0.123	DU	2.50	ug/L	N/A		(0%-10%)	BCD1	06/03/16 15:50
Manganese		U	0.216	DU	5.00	ug/L	N/A		(0%-10%)		
Molybdenum		U	0.152	DU	0.825	ug/L	N/A		(0%-10%)		
Nickel		U	0.194	DU	2.50	ug/L	N/A		(0%-10%)		
Selenium		B	1.71	DU	7.50	ug/L	N/A		(0%-10%)		
Silver		U	0.076	DU	1.00	ug/L	N/A		(0%-10%)		
Strontium		U	0.125	DU	10.0	ug/L	N/A		(0%-10%)		

GEL LABORATORIES LLC

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

QC Summary

Workorder: 398318

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	1570822										
Vanadium	U	4.10	DU	22.5	ug/L	N/A		(0%-10%)	PRB	06/08/16	22:58
Zinc	U	0.941	DU	17.5	ug/L	N/A		(0%-10%)	BCD1	06/03/16	15:50
Metals Analysis-ICP											
Batch	1570819										
QC1203557710	LCS										
Calcium	5000			5390	ug/L		108	(80%-120%)	JWJ	05/31/16	19:42
Iron	5000			5260	ug/L		105	(80%-120%)			
Magnesium	5000			5490	ug/L		110	(80%-120%)			
Phosphorous	500			494	ug/L		98.7	(80%-120%)			
Potassium	5000			5160	ug/L		103	(80%-120%)			
Sodium	5000			5240	ug/L		105	(80%-120%)			
QC1203557709	MB										
Calcium			U	50.0	ug/L					05/31/16	19:39
Iron			U	30.0	ug/L						
Magnesium			U	110	ug/L						
Phosphorous			U	60.0	ug/L						
Potassium			U	50.0	ug/L						
Sodium			U	100	ug/L						
QC1203557711	398282001 MS										
Calcium	5000	U	50.0	5370	ug/L		107	(75%-125%)		05/31/16	19:47
Iron	5000	U	30.0	5250	ug/L		105	(75%-125%)			
Magnesium	5000	U	110	5440	ug/L		108	(75%-125%)			
Phosphorous	500	U	60.0	503	ug/L		101	(75%-125%)			
Potassium	5000	U	50.0	5020	ug/L		100	(75%-125%)			

GEL LABORATORIES LLC

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

QC Summary

Workorder: 398318

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP											
Batch	1570819										
Sodium	5000	U	100	5160	ug/L		103	(75%-125%)			
QC1203557712	398282001	MSD									
Calcium	5000	U	50.0	5420	ug/L	0.981	108	(0%-20%)	JWJ	05/31/16	19:50
Iron	5000	U	30.0	5290	ug/L	0.717	106	(0%-20%)			
Magnesium	5000	U	110	5510	ug/L	1.34	110	(0%-20%)			
Phosphorous	500	U	60.0	520	ug/L	3.27	104	(0%-20%)			
Potassium	5000	U	50.0	5170	ug/L	2.81	103	(0%-20%)			
Sodium	5000	U	100	5210	ug/L	0.969	104	(0%-20%)			
QC1203557713	398282001	SDILT									
Calcium		U	4.91 DU	250	ug/L	N/A		(0%-10%)		05/31/16	19:53
Iron		U	-0.598 DU	150	ug/L	N/A		(0%-10%)			
Magnesium		U	17.0 DU	550	ug/L	N/A		(0%-10%)			
Phosphorous		U	-9.33 DU	300	ug/L	N/A		(0%-10%)			
Potassium		U	-10.9 DU	250	ug/L	N/A		(0%-10%)			
Sodium		U	-4.63 DU	500	ug/L	N/A		(0%-10%)			

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.

GEL LABORATORIES LLC

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

QC Summary

Workorder: 398318

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
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 #: GEL398318
Work Order #: 398318

Product: Alkalinity

Analytical Method: 2320_ALKALINITY

Analytical Procedure: GL-GC-E-033 REV# 12

Analytical Batch: 1572502

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
398318001	B35VD7
1203562040	Method Blank (MB)
1203562041	Laboratory Control Sample (LCS)
1203562042	398180009(NonSDG) 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.

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: GEL398318 GEL Work Order: 398318

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.

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: 08 JUN 2016

Title: Analyst I

Sample Data Summary

June 23, 2016

GEL LABORATORIES LLC

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

Certificate of Analysis

Report Date: June 9, 2016

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF F16-042

Client Sample ID: B35VD7
Sample ID: 398318001
Matrix: WATER
Collect Date: 26-MAY-16 08:15
Receive Date: 27-MAY-16
Collector: Client
Project: CPRC0F16042
Client ID: CPRC001

Table with 11 columns: Parameter, Qualifier, Result, DL, RL, Units, DF, Analyst, Date, Time Batch, Method. Row 1: Titration and Ion Analysis. Row 2: 2320_ALKALINITY: COMMON "As Received". Row 3: Alkalinity, Total as CaCO3, 80200, 725, 1000, ug/L, AMB, 06/07/16, 1102, 1572502, 1.

The following Analytical Methods were performed:

Table with 3 columns: Method, Description, Analyst Comments. Row 1: 1, 2320_ALKALINITY.

Notes:

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: June 8, 2016

CH2MHill Plateau Remediation Company

MSIN R3-50 CHPRC

PO Box 1600

Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 398318

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Titration and Ion Analysis											
Batch	1572502										
QC1203562042	398180009	DUP									
Alkalinity, Total as CaCO3		97800		98300	ug/L	0.528		(0%-20%)	AMB	06/07/16	10:24
QC1203562041	LCS										
Alkalinity, Total as CaCO3	50000			53800	ug/L		108	(80%-120%)		06/07/16	09:12
QC1203562040	MB										
Alkalinity, Total as CaCO3		U		725	ug/L					06/07/16	09:12

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.