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

December 03, 2020

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

Re: CHPRC SAF I21-006
Work Order: 527592
SDG: GEL527592

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 17, 2020. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without approval by the laboratory. Copies of GEL's accreditations and certifications can be found on our website at www.gel.com.

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,

Clare Drennen for
Heather Shaffer
Project Manager

Purchase Order: 300071 - 7H
Chain of Custody: I21-006-167, I21-006-169, I21-006-216, I21-006-238 and I21-006-239
Enclosures

Table of Contents

Case Narrative.....3

Chain of Custody and Supporting Documentation.....7

Data Review Qualifier Definitions.....14

Laboratory Certifications.....16

Metals Analysis.....18

Case Narrative.....19

Sample Data Summary.....22

Quality Control Summary.....25

General Chem Analysis.....28

Case Narrative.....29

Sample Data Summary.....32

Quality Control Summary.....37

Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company (74393)
CHPRC SAF I21-006
SDG: GEL527592

December 03, 2020

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 November 17, 2020, 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
527592001	B3Y569
527592002	B3Y567
527592003	B3Y6C8
527592004	B3Y6H8
527592005	B3Y6H6
527592006	B3Y6H7

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.

GEL Laboratories LLC PO Box 30712 Charleston, SC 29417 2040 Savage Road Charleston, SC 29407 P 843.556.8171 F 843.766.1178 www.gel.com

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 Analytical Laboratory Services for CH2M Hill Plateau Remediation Company Statement of Work, 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 data package deliverable 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.

Clare Drennen for
Heather Shaffer
Project Manager

Technical Case Narrative
CH2MHill Plateau Remediation Company
SDG #: GEL527592
Work Order #: 527592

Metals

Determination of Metals by ICP-MS

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.

General Chemistry

Hexavalent Chromium

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

527592

C.O.C. # I21-006-169

Page 1 of 1

Collector: Malcom Chunn CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: I21-006	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: CERCLA, November 2020	**Logbook No.:** HNF-N-506 -117-41	**Ice Chest No.:** GWS-~~150~~ 6041
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7720 9697 5979
Protocol: CERCLA	**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
B3Y569	Y		NOV 16 2020	131235	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

11-16-20

Relinquished By			Received By		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Malcom Chunn CHPRC	MR Ch	NOV 16 2020 1245	Jeff Lucas /CHPRC		NOV 16 2020 1245
Jeff Lucas /CHPRC		NOV 16 2020 1400	FEDEX		
FED EX			Stacy Boone GEL Laboratories		NOV 17 2020 1000

Matrix *

S = Soil	DS = Drum Solids
SE = Sediment	DL = Drum Liquids
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 10/13/2020

FSR ID = FSR99789

A-6004-842 (REV 4)

GEL527592
Dec 15, 2020
Rev 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 527592	C.O.C. # I21-006-167 Page 1 of 1

Collector: Malcom Chunn CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: I21-006	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071 LW.11/16/20
Project Title: CERCLA, November 2020	**Logbook No.:** HNF-N-506 -117-41	**Ice Chest No.:** GWS-~~150~~ 641
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7720 9697 5999
Protocol: CERCLA	**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
B3Y567	Y	W	NOV 16 2020	1136	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

Relinquished By			Received By		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Malcom Chunn CHPRC	MRC	NOV 16 2020 1245	Jeff Lucas /CHPRC		NOV 16 2020 1245
Jeff Lucas /CHPRC		NOV 16 2020 1400	FEDEX		
FED EX			Stacy Boone GEL Laboratories		NOV 17 2020 1000

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
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 10/20/2020

FSR ID = FSR100059

A-6004-842 (REV 4)

GEL527592

Dec 15, 2020

Rev 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 527592	C.O.C. # I21-006-216 Page 1 of 1

Collector: Malcom Chunn CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: I21-006	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: CERCLA, November 2020	**Logbook No.:** HNF-N-506 - 117-41	**Ice Chest No.:** GLOS 182 641
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7720 9697 5979
Protocol: CERCLA	**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
B3Y6C8	Y	W	NOV 16 2020	1013	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

Relinquished By			Received By		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Malcom Chunn CHPRC	MR Cl	NOV 16 2020 1024	Jeff Lucas /CHPRC	J Lucas	NOV 16 2020 1024
Jeff Lucas /CHPRC	J Lucas	NOV 16 2020 1400	11/16/20	NOV 16 2020	FEDEX
		FED EX	Stacy Boone GEL Laboratories		NOV 17 2020 1000

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
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 10/13/2020 FSR ID = FSR99734 A-6004-842 (REV 4)

GEL527592 Dec 15, 2020 Rev 0

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 27165 527592	C.O.C. # I21-006-239 Page 1 of 1

Collector: Kevin Patterson /CHPRC	**Contact/Requester:** Karen Waters-Husted	**Telephone No.:** 509-376-4650
SAF No.: I21-006	**Sampling Origin:** Hanford Site	**Purchase Order/Charge Code:** 300071
Project Title: CERCLA, November 2020	**Logbook No.:** HNF-N-506 116	**Ice Chest No.:** GWS-641
Shipped To (Lab): GEL Laboratories, LLC	**Method of Shipment** Commercial Carrier	**Bill of Lading/Air Bill No.:** 7720 9697 5973
Protocol: CERCLA	**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
B3Y6H8	Y	W	NOV 16 2020	1157	1x60-mL aG	7196_CR6: COMMON	24 Hours	Cool <=6C

Relinquished By			Received By		
Print First and Last Name	*Signature*	*Date/Time*	*Print First and Last Name*	*Signature*	*Date/Time*
Kevin Patterson /CHPRC		NOV 16 2020 1245	Tim Callaway /CHPRC		NOV 16 2020 1245
Tim Callaway /CHPRC		NOV 16 2020 1400	FEDEX		
		FED EX	Stacy Boone GEL Laboratories		NOV 17 2020 1000

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
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 10/20/2020 FSR ID = FSR100046 A-6004-842 (REV 4)

SDG: GEL527592 GEL527592 Dec 15, 2020 Rev 0

CH2MHill Plateau Remediation Company

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

527592

C.O.C. # I21-006-238

Page 1 of 1

Collector:	Kevin Patterson /CHPRC	Contact/Requester:	Karen Waters-Husted	Telephone No.:	509-376-4650
SAF No.:	I21-006	Sampling Origin:	Hanford Site	Purchase Order/Charge Code:	300071
Project Title:	CERCLA, November 2020	Logbook No.:	HNF-N-506 116	Ice Chest No.:	GWS-150
Shipped To (Lab):	GEL Laboratories, LLC	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.:	7720 9607 7119
Protocol:	CERCLA	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
B3Y6H6	Y	W	NOV 16 2020	1157	1x500-mL G/P	6020_METALS_ICPMS: Chromium (1)	6 Months	HNO3 to pH <2
B3Y6H7	N	W	NOV 16 2020	1157	1x500-mL G/P	6020_METALS_ICPMS: Uranium (1); 6020_METALS_ICPMS: Chromium (1)	6 Months	HNO3 to pH <2

Relinquished By			Received By		
Print First and Last Name	Signature	Date/Time	Print First and Last Name	Signature	Date/Time
Kevin Patterson /CHPRC		NOV 16 2020 1245	Tim Callaway /CHPRC		NOV 16 2020 1245
Tim Callaway /CHPRC		NOV 16 2020 1400	FEDEX		
			Stacy Boone GEL Laboratories		NOV 17 2020 1000

Matrix *

S	= Soil	DS	= Drum Solids
SE	= Sediment	DL	= Drum Liquids
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 10/20/2020

FSR ID = FSR100046

A-6004-842 (REV 4)

GEL527592

Dec 15, 2020

Rev 0

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPRC	SDG/AR/COC/Work Order: 527592
Received By: Stacy L Boone	Date Received: 17-Nov-20
Carrier and Tracking Number	Circle Applicable: FedEx Express FedEx Ground UPS Field Services Courier Other 7720 9697 5979 1c 7720 9677 7119 1c 7720 9496 4383 1c

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
A)Shipped as a DOT Hazardous?		✓	Hazard Class Shipped: UN#: If UN2910, Is the Radioactive Shipment Survey Compliant? Yes___ No___
B) Did the client designate the samples are to be received as radioactive?	✓		COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?	✓		Maximum Net Counts Observed* (Observed Counts - Area Background Counts): Ø CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		✓	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		✓	If D or E is yes, select Hazards below. 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?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	✓			Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	✓			Preservation Method: Wet Ice Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP:_____
4	Daily check performed and passed on IR temperature gun?	✓			Temperature Device Serial #: IR1-20 Secondary Temperature Device Serial # (If Applicable):
5	Sample containers intact and sealed?	✓			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH? SB	X		✓	Sample ID's and Containers Affected: B3XPP4 If Preservation added, Lot#: 200916
7	Do any samples require Volatile Analysis?	✓			If Yes, are Encores or Soil Kits present for solids? Yes___ No___ NA___(If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes ✓ No___ NA___(If unknown, select No) Are liquid VOA vials free of headspace? Yes ✓ No___ NA___ Sample ID's and containers affected:
8	Samples received within holding time?	✓			ID's and tests affected:
9	Sample ID's on COC match ID's on bottles?	✓			ID's and containers affected:
10	Date & time on COC match date & time on bottles?	✓			Circle Applicable: No dates on containers No times on containers COC missing info Other (describe)
11	Number of containers received match number indicated on COC?	✓			Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?			✓	
13	COC form is properly signed in relinquished/received sections?	✓			Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials CD Date 11/18/20 Page 1 of 1

GL-CHL-SR-001 Rev 7

Data Review Qualifier Definitions

GEL LABORATORIES LLC

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

Report Date: 02−DEC−20

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.		
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	
o	Analyte failed to recover within LCS limits	Radiological	Rad

Laboratory Certifications

List of current GEL Certifications as of 02 December 2020

State	Certification
Alabama	42200
Alaska	17−018
Alaska Drinking Water	SC00012
Arkansas	88−0651
CLIA	42D0904046
California	2940
Colorado	SC00012
Connecticut	PH−0169
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	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2019020
Maryland	270
Massachusetts	M−SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE−OS−26−13
Nevada	SC000122021−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
North Dakota	R−158
Oklahoma	2019−165
Pennsylvania NELAP	68−00485
Puerto Rico	SC00012
S. Carolina Radiochem	10120002
Sanitation Districts of L	9255651
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−20−17
Utah NELAP	SC000122020−33
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company
SDG #: GEL527592
Work Order #: 527592

Product: **Determination of Metals by ICP-MS**
Analytical Method: SW846 3005A/6020B
Analytical Procedure: GL-MA-E-014 REV# 34
Analytical Batch: 2063952

Preparation Method: SW846 3005A
Preparation Procedure: GL-MA-E-006 REV# 14
Preparation Batch: 2063951

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

GEL Sample ID#	Client Sample Identification
527592005	B3Y6H6
527592006	B3Y6H7
1204696982	Method Blank (MB)**ICP-MS**
1204696983	Laboratory Control Sample (LCS)
1204696986	527592006(B3Y6H7L) Serial Dilution (SD)
1204696984	527592006(B3Y6H7S) Matrix Spike (MS)
1204696985	527592006(B3Y6H7SD) 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

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

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

CPRC002 CH2MHill Plateau Remediation Company (74393)

Client SDG: GEL527592 GEL Work Order: 527592

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.

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: Edmund Frampton**

Date: 03 DEC 2020 **Title: Team Leader**

Sample Data Summary

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL527592 **CONTRACT:** CPRC0I21006 **METHOD TYPE:** SW846

SAMPLE ID: 527592005 **BASIS:** As Received **DATE COLLECTED** 16−NOV−20

CLIENT ID: B3Y6H6 **LEVEL:** Low **DATE RECEIVED** 17−NOV−20

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−47−3	Chromium	11.4	ug/L		3.00	10.0	10.0	1	MS	PRB	12/01/20 22:19	201201−1	2063952

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2063952	2063951	SW846 3005A	50	mL	50	mL	11/25/20	HH1

***Analytical Methods:**

MS **SW846 3005A/6020B**

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL527592 **CONTRACT:** CPRC0I21006 **METHOD TYPE:** SW846

SAMPLE ID: 527592006 **BASIS:** As Received **DATE COLLECTED** 16−NOV−20

CLIENT ID: B3Y6H7 **LEVEL:** Low **DATE RECEIVED** 17−NOV−20

MATRIX: WATER **%SOLIDS:** 0

CAS	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440−47−3	Chromium	11.6	ug/L		3.00	10.0	10.0	1	MS	PRB	12/01/20 22:23	201201−1	2063952
7440−61−1	Uranium	0.917	ug/L		0.0670	0.200	0.200	1	MS	PRB	12/01/20 22:23	201201−1	2063952

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2063952	2063951	SW846 3005A	50	mL	50	mL	11/25/20	HH1

***Analytical Methods:**

MS **SW846 3005A/6020B**

Quality Control Summary

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

QC Summary

Report Date: December 3, 2020

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

Contact: **Mr. Scot Fitzgerald**

Workorder: **527592**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 2063952										
QC1204696983 LCS										
Chromium	50.0			46.8	ug/L		93.5	(80%-120%)	PRB	12/01/20 22:16
Uranium	50.0			45.5	ug/L		91.1	(80%-120%)		
QC1204696982 MB										
Chromium			U	3.00	ug/L					12/01/20 22:12
Uranium			U	0.0670	ug/L					
QC1204696984 527592006 MS										
Chromium	50.0	11.6		59.1	ug/L		95	(75%-125%)		12/01/20 22:27
Uranium	50.0	0.917		48.0	ug/L		94.2	(75%-125%)		
QC1204696985 527592006 MSD										
Chromium	50.0	11.6		59.5	ug/L	0.738	95.9	(0%-20%)		12/01/20 22:30
Uranium	50.0	0.917		47.1	ug/L	1.79	92.5	(0%-20%)		
QC1204696986 527592006 SDILT										
Chromium		11.6	DU	15.0	ug/L	N/A		(0%-20%)		12/01/20 22:37
Uranium		0.917	BD	0.191	ug/L	4.14		(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).

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QC Summary

Workorder: **527592**

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

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
SDG #: GEL527592
Work Order #: 527592

Product: **Hexavalent Chromium**
Analytical Method: 7196_CR6
Analytical Procedure: GL-GC-E-132 REV# 3
Analytical Batch: 2063684

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

GEL Sample ID#	Client Sample Identification
527592001	B3Y569
527592002	B3Y567
527592003	B3Y6C8
527592004	B3Y6H8
1204696463	Method Blank (MB)
1204696464	Laboratory Control Sample (LCS)
1204696465	527592001(B3Y569) Sample Duplicate (DUP)
1204696466	527592001(B3Y569) 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.

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

CPRC002 CH2MHill Plateau Remediation Company (74393)

Client SDG: GEL527592 GEL Work Order: 527592

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).

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: 19 NOV 2020 **Title: Data Validator**

Sample Data Summary

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

Certificate of Analysis

Report Date: November 19, 2020

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF I21-006

Client Sample ID:	B3Y569	Project:	CPRC0I21006
Sample ID:	527592001	Client ID:	CPRC002
Matrix:	WATER		
Collect Date:	16-NOV-20 12:35		
Receive Date:	17-NOV-20		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Nutrient Analysis												
7196_CR6: COMMON (Lachat) "As Received"												
Hexavalent Chromium	B	0.00309	0.00130	0.00400	mg/L		1	AXH3	11/17/20	1040	2063684	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	7196_CR6	

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
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Certificate of Analysis

Report Date: November 19, 2020

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF I21-006

Client Sample ID:	B3Y567	Project:	CPRC0I21006
Sample ID:	527592002	Client ID:	CPRC002
Matrix:	WATER		
Collect Date:	16-NOV-20 11:36		
Receive Date:	17-NOV-20		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Nutrient Analysis												
7196_CR6: COMMON (Lachat) "As Received"												
Hexavalent Chromium		0.00448	0.00130	0.00400	mg/L		1	AXH3	11/17/20	1044	2063684	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	7196_CR6	

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
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Certificate of Analysis

Report Date: November 19, 2020

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF I21-006

Client Sample ID:	B3Y6C8	Project:	CPRC0I21006
Sample ID:	527592003	Client ID:	CPRC002
Matrix:	WATER		
Collect Date:	16-NOV-20 10:13		
Receive Date:	17-NOV-20		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Nutrient Analysis												
7196_CR6: COMMON (Lachat) "As Received"												
Hexavalent Chromium	B	0.00140	0.00130	0.00400	mg/L		1	AXH3	11/17/20	1046	2063684	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	7196_CR6	

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

Certificate of Analysis

Report Date: November 19, 2020

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF I21-006

Client Sample ID:	B3Y6H8	Project:	CPRC0I21006
Sample ID:	527592004	Client ID:	CPRC002
Matrix:	WATER		
Collect Date:	16-NOV-20 11:57		
Receive Date:	17-NOV-20		
Collector:	Client		

Parameter	Qualifier	Result	DL	RL	Units	PF	DF	Analyst	Date	Time	Batch	Method
Nutrient Analysis												
7196_CR6: COMMON (Lachat) "As Received"												
Hexavalent Chromium		0.0109	0.00130	0.00400	mg/L		1	AXH3	11/17/20	1047	2063684	1

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	7196_CR6	

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: November 19, 2020

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

Contact: **Mr. Scot Fitzgerald**

Workorder: **527592**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Nutrient Analysis												
Batch 2063684												
QC1204696465 527592001 DUP												
Hexavalent Chromium		B	0.00309	B	0.00291	mg/L	6 ^		(+/-0.00400)	AXH3	11/17/20	10:41
QC1204696464 LCS												
Hexavalent Chromium	0.0500				0.0480	mg/L		96	(90%-110%)		11/17/20	10:37
QC1204696463 MB												
Hexavalent Chromium				U	0.00130	mg/L					11/17/20	10:36
QC1204696466 527592001 PS												
Hexavalent Chromium	0.0500	B	0.00309		0.0506	mg/L		95	(90%-110%)		11/17/20	10:43

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.
- E Reported value is estimated due to interferences. See comment in narrative.
- 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

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QC Summary

Workorder: **527592**

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

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.