

November 23, 2020

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

Re: CHPRC SAF I21-005
Work Order: 526992
SDG: GEL526992

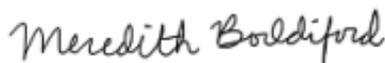
Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 11, 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,



Meredith Boddiford for
Heather Shaffer
Project Manager

Purchase Order: 300071-7H
Chain of Custody: I21-005-050
Enclosures



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Case Narrative

**General Narrative
for
CH2MHill Plateau Remediation Company (74393)
CHPRC SAF I21-005
SDG: GEL526992**

November 23, 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 11, 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
526992001	B3XPY0
526992002	B3XPY2

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: 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.

Meredith Boddiford
Dec 9, 2020

Meredith Boddiford for
Heather Shaffer
Project Manager

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company
SDG #: GEL526992
Work Order #: 526992

Determination of Metals by ICP

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.

Determination of Metals by ICP-MS

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

Quality Control (QC) Information**Method Blank (MB) Statement**

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

Sample	Analyte	Value
1204692002 (MB)	Molybdenum	0.231 between (0.2 - 0.5)

Certification Statement

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

Chain of Custody and Supporting Documentation

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

CH2M Hill Plateau Remediation Company

Collector: Roy Shepard /CHPRC

SAF No.: I21-005

Project Title: AEA/CERCLA, November 2020

Shipped To (Lab): GEL Laboratories, LLC

Protocol: SURV

Contact/Requester: Karen Waters-Husted

Sampling Origin: Hanford Site

Logbook No.: HNF-N-5066-116-68

Method of Shipment: Commercial Carrier

Priority: 30 Days

Telephone No.: 509-376-4650

Purchase Order/Charge Code: 300071

Ice Chest No.: GWS-143

Bill of Lading/Air Bill No.: 7720 3848 2930

Offsite Property No.: MA

C.O.C.# I21-005-050

Page 1 of 1

Sample No.	Filter	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B3XPY0	N	11-9-20	1150	1x500-mL G/P	6010_METALS_ICP: GW 10; 6020_METALS_ICPMS: GW 06	6 Months	HNO3 to pH <2
B3XPY2	Y	11-9-20	1150	1x500-mL G/P	6010_METALS_ICP: GW 10; 6020_METALS_ICPMS: GW 06	6 Months	HNO3 to pH <2

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

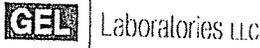
Relinquished By	Received By
Print First and Last Name: Roy Shepard /CHPRC Signature: <i>[Signature]</i> Date/Time: NOV 09 2020 1250	Print First and Last Name: SSU-1 Signature: <i>[Signature]</i> Date/Time: NOV 09 2020 1250
Print First and Last Name: Roy Shepard /CHPRC Signature: <i>[Signature]</i> Date/Time: NOV 10 2020 0610	Print First and Last Name: Tracy L. Bacon Signature: <i>[Signature]</i> Date/Time: NOV 10 2020 0610
Print First and Last Name: Roy Shepard /CHPRC Signature: <i>[Signature]</i> Date/Time: NOV 10 2020 1400	Print First and Last Name: Stacy Boone Signature: <i>[Signature]</i> Date/Time: NOV 11 2020 1010
Disposal Method (e.g., Return to customer, per lab procedure, used in process):	Disposed By:

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

Printed On 9/29/2020 FSR ID = FSR99298

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SAMPLE RECEIPT & REVIEW FORM

Client: **CPRC** SDG/AR/COC/Work Order: **526992**

Received By: **BOONE, S** Date Received: **11/11/20**

Carrier and Tracking Number
FedEx Express FedEx Ground UPS Field Services Courier Other
7720 4526 2052 1 c
7720 3848 2930 1 c **7720 4293 2200 1 c**

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): 0 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 #: **IRI-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? Sample ID's and Containers Affected:
If Preservation added, Lot#:

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):

7720 4030 9990 1 c **7720 3840 3241 1 c** **7720 4223 5851 1 c**

PM (or PMA) review: Initials **CTD** Date **11/12/20** 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.		
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	
o	Analyte failed to recover within LCS limits	Radiological	Rad

Laboratory Certifications

List of current GEL Certifications as of 23 November 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 #: GEL526992
Work Order #: 526992

Product: Determination of Metals by ICP**Analytical Method:** SW846 3005A/6010D**Analytical Procedure:** GL-MA-E-013 REV# 31**Analytical Batch:** 2061757**Product: Determination of Metals by ICP-MS****Analytical Method:** SW846 3005A/6020B**Analytical Procedure:** GL-MA-E-014 REV# 34**Analytical Batch:** 2061794**Preparation Method:** SW846 3005A**Preparation Procedure:** GL-MA-E-006 REV# 14**Preparation Batches:** 2061756 and 2061792

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
526992001	B3XPY0
526992002	B3XPY2
1204691927	Method Blank (MB)ICP
1204691928	Laboratory Control Sample (LCS)
1204691931	526992001(B3XPY0L) Serial Dilution (SD)
1204691929	526992001(B3XPY0S) Matrix Spike (MS)
1204691930	526992001(B3XPY0SD) Matrix Spike Duplicate (MSD)
1204692002	Method Blank (MB)ICP-MS
1204692003	Laboratory Control Sample (LCS)
1204692006	526992001(B3XPY0L) Serial Dilution (SD)
1204692004	526992001(B3XPY0S) Matrix Spike (MS)
1204692005	526992001(B3XPY0SD) 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.

Quality Control (QC) Information**Method Blank (MB) Statement**

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

Sample	Analyte	Value
1204692002 (MB)	Molybdenum	0.231 between (0.2 - 0.5)

Certification Statement

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

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: GEL526992 GEL Work Order: 526992

The Qualifiers in this report are defined as follows:

- * Duplicate analysis not within control limits
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is \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.
- 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: 23 NOV 2020****Title: Team Leader**

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL526992

CONTRACT: CPRC0121005

METHOD TYPE: SW846

SAMPLE ID: 526992001

BASIS: As Received

DATE COLLECTED 09-NOV-20

CLIENT ID: B3XPY0

LEVEL: Low

DATE RECEIVED 11-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	10.0	ug/L		3.00	10.0	10.0	1	MS	PRB	11/22/20 00:54	201121-3	2061794
7439-89-6	Iron	30.0	ug/L	U	30.0	100	100	1	P	JWJ	11/19/20 20:18	111920-1	2061757
7439-96-5	Manganese	1.00	ug/L	U	1.00	5.00	5.00	1	MS	PRB	11/22/20 00:54	201121-3	2061794
7439-98-7	Molybdenum	2.44	ug/L	C	0.200	1.00	1.00	1	MS	PRB	11/22/20 00:54	201121-3	2061794
7440-02-0	Nickel	2.39	ug/L		0.600	2.00	2.00	1	MS	PRB	11/22/20 00:54	201121-3	2061794

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2061757	2061756	SW846 3005A	50	mL	50	mL	11/19/20	SM1
2061794	2061792	SW846 3005A	50	mL	50	mL	11/19/20	RG1

***Analytical Methods:**

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

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL526992

CONTRACT: CPRC0121005

METHOD TYPE: SW846

SAMPLE ID: 526992002

BASIS: As Received

DATE COLLECTED 09-NOV-20

CLIENT ID: B3XPY2

LEVEL: Low

DATE RECEIVED 11-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	7.17	ug/L	B	3.00	10.0	10.0	1	MS	PRB	11/22/20 01:19	201121-3	2061794
7439-89-6	Iron	30.0	ug/L	U	30.0	100	100	1	P	JWJ	11/19/20 20:29	111920-1	2061757
7439-96-5	Manganese	1.00	ug/L	U	1.00	5.00	5.00	1	MS	PRB	11/22/20 01:19	201121-3	2061794
7439-98-7	Molybdenum	2.31	ug/L	C	0.200	1.00	1.00	1	MS	PRB	11/22/20 01:19	201121-3	2061794
7440-02-0	Nickel	1.88	ug/L	B	0.600	2.00	2.00	1	MS	PRB	11/22/20 01:19	201121-3	2061794

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
2061757	2061756	SW846 3005A	50	mL	50	mL	11/19/20	SM1
2061794	2061792	SW846 3005A	50	mL	50	mL	11/19/20	RG1

***Analytical Methods:**

P SW846 3005A/6010D
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: November 23, 2020

CH2M Hill Plateau Remediation Company

MSIN R3-50 CHPRC

PO Box 1600

Richland, Washington

Contact: Mr. Scot Fitzgerald

Workorder: 526992

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2061794										
QC1204692003	LCS										
Chromium	50.0			49.4	ug/L		98.7	(80%-120%)	PRB	11/22/20	00:50
Manganese	50.0			47.0	ug/L		94.1	(80%-120%)			
Molybdenum	50.0			48.8	ug/L		97.5	(80%-120%)			
Nickel	50.0			48.5	ug/L		97	(80%-120%)			
QC1204692002	MB										
Chromium			U	3.00	ug/L					11/22/20	00:47
Manganese			U	1.00	ug/L						
Molybdenum			B	0.231	ug/L						
Nickel			U	0.600	ug/L						
QC1204692004	526992001	MS									
Chromium	50.0	10.0		61.0	ug/L		102	(75%-125%)		11/22/20	00:58
Manganese	50.0	U	1.00	50.3	ug/L		99	(75%-125%)			
Molybdenum	50.0	C	2.44	54.4	ug/L		104	(75%-125%)			
Nickel	50.0		2.39	52.4	ug/L		100	(75%-125%)			

GEL LABORATORIES LLC

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QC Summary

Workorder: 526992

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis - ICPMS											
Batch	2061794										
QC1204692005	526992001	MSD									
Chromium	50.0	10.0		60.3	ug/L	1.12	101	(0%-20%)	PRB	11/22/20	01:01
Manganese	50.0	U	1.00	48.9	ug/L	2.89	96.2	(0%-20%)			
Molybdenum	50.0	C	2.44	52.3	ug/L	3.86	99.7	(0%-20%)			
Nickel	50.0		2.39	52.4	ug/L	0.0133	100	(0%-20%)			
QC1204692006	526992001	SDILT									
Chromium		10.0	DU	15.0	ug/L	N/A		(0%-20%)		11/22/20	01:09
Manganese		U	0.770	DU	5.00	ug/L	N/A	(0%-20%)			
Molybdenum		C	2.44	BD	0.518	ug/L	6.23	(0%-20%)			
Nickel			2.39	DU	3.00	ug/L	N/A	(0%-20%)			
Metals Analysis-ICP											
Batch	2061757										
QC1204691928	LCS										
Iron	5000			5110	ug/L		102	(80%-120%)	JWJ	11/19/20	20:15
QC1204691927	MB										
Iron			U	30.0	ug/L					11/19/20	20:12
QC1204691929	526992001	MS									
Iron	5000	U	30.0	4930	ug/L		98.1	(75%-125%)		11/19/20	20:21
QC1204691930	526992001	MSD									
Iron	5000	U	30.0	5030	ug/L	2.06	100	(0%-20%)		11/19/20	20:24

GEL LABORATORIES LLC

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QC Summary

Workorder: 526992

Page 3 of 3

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP											
Batch	2061757										
	QC1204691931 526992001 SDILT										
Iron	U	27.2	DU	150	ug/L	N/A		(0%-20%)	JWJ	11/19/20	20:26

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 \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.
- 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.