



June 28, 2017

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

Re: CHPRC SAF F16-036
Work Order: 425518
SDG: GEL425518

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on June 15, 2017. 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: 300085 - 7H
Chain of Custody: F16-036-082 and F16-036-085
Enclosures

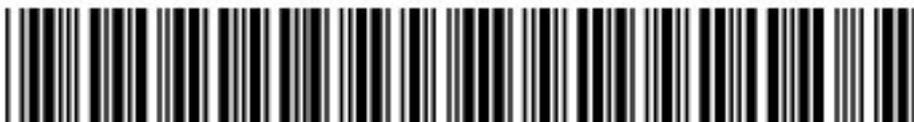


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Case Narrative

June 28, 2017

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF F16-036
SDG: GEL425518

June 28, 2017

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 June 15, 2017, 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
425518001	B39HY5
425518002	B39HY8

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 and Radiochemistry.

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 28, 2017

B. Luthman
Brielle Luthman for
Heather Shaffer
Project Manager

June 28, 2017

Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL425518
Work Order #: 425518

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

Instrument Calibration

The samples in this SDG contained sodium at concentrations more than ten times the amount present in the calibration blank, therefore the data was not adversely affected. 1203812383 (MB).

CRDL/PQL Requirements

The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of potassium, sodium and zinc. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 425518001 (B39HY5).

Radiochemistry

UIISO_IE_PRECIP_AEA:COMMON

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

QC Information

The sample and the duplicate, 1203815503 (B39HY8DUP) and 425518002 (B39HY8), did not meet the relative percent difference requirement for U-238; however, they do meet the relative error ratio requirement with a value of 1.05.

SRTOT_SEP_PRECIP_GPC: COMMON

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

Technical Information

June 28, 2017

Recounts

Additional cleanup steps were performed on samples 1203814972 (Non SDG 425529001DUP) in order to confirm sample results. The recounts are reported. Additional cleanup steps were performed on samples 425518002 (B39HY8) in order to remove suspected false positives. The recounts are reported.

TC99_EIE_LSC: COMMON

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.

TRITIUM_DIST_LSC: COMMON

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

QC Information

The Matrix Spike 1203815871 (B39HY8MS) did not meet recovery requirements due to the sample activity being greater than five times the spiked nominal concentration.

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

June 28, 2017

425518

CH2M Hill Plateau Remediation Company		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F16-036-085	PAGE 1 OF 1
COLLECTOR	Dave Floyd CHPRC	COMPANY CONTACT	TODAK, D	PROJECT COORDINATOR	TODAK, D
SAMPLING LOCATION	C9711, I-010	PROJECT DESIGNATION	100-KR-4 Long Term & Interim Action Monitoring - Water	SAF NO.	F16-036
ICE CHEST NO.	2291417 625 578 560	FIELD LOGBOOK NO.	HNF-N-045-7/59	COA	300085
SHIPPED TO	GEL Laboratories, LLC	OFFSITE PROPERTY NO.	8039	METHOD OF SHIPMENT	FEDERAL EXPRESS
MATRIX*	A=Air DL=Drum L=Liquid S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	PRESERVATION	None	BILL OF LADING/AIR BILL NO.	7794 0470 3935
POSSIBLE SAMPLE HAZARDS/REMARKS	*Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR/JATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.	HOLDING TIME	6 Months		
SPECIAL HANDLING AND/OR STORAGE	NA	TYPE OF CONTAINER	P		
		NO. OF CONTAINER(S)	1		
		VOLUME	500mL		
		SAMPLE ANALYSIS	TRITIUM_DIST LSC; COMMON;		
			SEE ITEM (1) IN SPECIAL INSTRUCTIONS		
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME		
B39HY8	WATER	6-14-17	0910		

RECEIVED BY/STORER IN	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME
Janelle Zunker CHPRC	JUN 14 2017 1000	Janelle Zunker CHPRC	JUN 14 2017 1000
RECEIVED BY/STORER IN	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME
FEDEX		FEDEX	
RECEIVED BY/STORER IN	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME
STACY BOONE	6/15/17 9:05	STACY BOONE	6/15/17 9:05
RECEIVED BY/STORER IN	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME
RECEIVED BY/STORER IN	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME
RECEIVED BY/STORER IN	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME

CHAIN OF POSSESSION		SIGN/PRINT NAMES		SPECIAL INSTRUCTIONS	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME	TRVL-17-101	
Dave Floyd CHPRC	JUN 14 2017 1000	Janelle Zunker CHPRC	JUN 14 2017 1000	(1) SRTOT_SEP_PRECIP_GPC: COMMON; TC99_EIE_LSC: COMMON;	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME	UIISO_IE_PRECIP_AEA: COMMON;	
Dave Floyd CHPRC	JUN 14 2017 1400	FEDEX			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME		
FEDEX		STACY BOONE	6/15/17 9:05		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORER IN	DATE/TIME		
LABORATORY SECTION	RECEIVED BY	TITLE		DATE/TIME	
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY		DATE/TIME	
PRINTED ON 3/28/2017		TRVL NUM = TRVL-17-101		A-6003-618 (REV 2)	

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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 28 June 2017

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	LA170010
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122017-1
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	T104704235-17-12
Utah NELAP	SC000122017-22
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Metals Analysis

Case Narrative

June 28, 2017

Metals

Technical Case Narrative

CH2M Hill Plateau Remediation Company (CPRC)

SDG #: GEL425518

Work Order #: 425518

Product: Determination of Metals by ICP

Analytical Method: SW846 3005A/6010D

Analytical Procedure: GL-MA-E-013 REV# 28

Analytical Batch: 1674447

Preparation Method: SW846 3005A

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

Preparation Batch: 1674446

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
425518001	B39HY5
1203812383	Method Blank (MB)ICP
1203812384	Laboratory Control Sample (LCS)
1203812387	425500003(NonSDGL) Serial Dilution (SD)
1203812385	425500003(NonSDGS) Matrix Spike (MS)
1203812386	425500003(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

Instrument Calibration

The samples in this SDG contained sodium at concentrations more than ten times the amount present in the calibration blank, therefore the data was not adversely affected. 1203812383 (MB).

CRDL/PQL Requirements

The PQL standard recoveries for SW846 6010C or 6010D met the control limits with the exception of potassium, sodium and zinc. Client sample concentrations were less than the MDL or greater than two times the PQL; therefore the data were not adversely affected. 425518001 (B39HY5).

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.

June 28, 2017

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: GEL425518 GEL Work Order: 425518

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: Nik-Cole Elmore

Date: 28 JUN 2017

Title: Data Validator

Sample Data Summary

METALS
-1-
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL425518

CONTRACT: CPRC0F16036

METHOD TYPE: SW846

SAMPLE ID:425518001

BASIS: As Received

DATE COLLECTED 14-JUN-17

CLIENT ID: B39HY5

LEVEL: Low

DATE RECEIVED 15-JUN-17

MATRIX: WATER

%SOLIDS: 0

CAS No.	Analyte	Result	Units	Qual	MDL	PQL	CRDL	DF	M*	Analyst	Run Date	Analytical Run	Analytical Batch
7440-36-0	Antimony	3.5	ug/L	U	3.5	10	10	1	P	HSC	06/27/17 08:44	062717-1	1674447
7440-70-2	Calcium	43400	ug/L		50	200	200	1	P	HSC	06/27/17 08:44	062717-1	1674447
7440-47-3	Chromium	16.9	ug/L		1	5	5	1	P	HSC	06/27/17 08:44	062717-1	1674447
7439-95-4	Magnesium	10500	ug/L		110	300	300	1	P	HSC	06/27/17 08:44	062717-1	1674447
7440-02-0	Nickel	1.5	ug/L	U	1.5	5	5	1	P	HSC	06/27/17 08:44	062717-1	1674447
7440-09-7	Potassium	5940	ug/L		50	150	150	1	P	HSC	06/27/17 08:44	062717-1	1674447
7440-62-2	Vanadium	10	ug/L		1	5	5	1	P	HSC	06/27/17 08:44	062717-1	1674447
7440-66-6	Zinc	220	ug/L		3.3	10	10	1	P	HSC	06/27/17 12:51	062717-3	1674447

Prep Information:

Analytical Batch	Prep Batch	Prep Method	Initial wt./vol.	Units	Final wt./vol.	Units	Date	Analyst
1674447	1674446	SW846 3005A	50	mL	50	mL	06/16/17	SXW1

***Analytical Methods:**

P SW846 3005A/6010D

Quality Control Summary

June 28, 2017 GEL LABORATORIES LLC

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

QC Summary

Report Date: June 28, 2017

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

Contact: Mr. Scot Fitzgerald

Workorder: 425518

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP											
Batch	1674447										
QC1203812384	LCS										
Antimony	500			476	ug/L		95.3	(80%-120%)	HSC	06/27/17	08:25
Calcium	5000			4780	ug/L		95.6	(80%-120%)			
Chromium	500			472	ug/L		94.4	(80%-120%)			
Magnesium	5000			5010	ug/L		100	(80%-120%)			
Nickel	500			486	ug/L		97.1	(80%-120%)			
Potassium	5000			4770	ug/L		95.4	(80%-120%)			
Vanadium	500			473	ug/L		94.6	(80%-120%)			
Zinc	500			473	ug/L		94.6	(80%-120%)		06/27/17	12:32
QC1203812383	MB										
Antimony			U	3.50	ug/L					06/27/17	08:22
Calcium			U	50.0	ug/L						
Chromium			U	1.00	ug/L						
Magnesium			U	110	ug/L						
Nickel			U	1.50	ug/L						

June 28, 2017

GEL LABORATORIES LLC

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

QC Summary

Workorder: 425518

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Parname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP											
Batch	1674447										
Potassium			U	50.0	ug/L				HSC	06/27/17	08:22
Vanadium			U	1.00	ug/L						
Zinc			U	3.30	ug/L					06/27/17	12:29
QC1203812385 425500003 MS											
Antimony	500	U	3.50	482	ug/L		96.4	(75%-125%)		06/27/17	08:31
Calcium	5000		26600	31700	ug/L		N/A	(75%-125%)			
Chromium	500	B	3.60	472	ug/L		93.6	(75%-125%)			
Magnesium	5000		6250	11100	ug/L		97.1	(75%-125%)			
Nickel	500	U	1.50	471	ug/L		94.2	(75%-125%)			
Potassium	5000		1560	6350	ug/L		95.8	(75%-125%)			
Vanadium	500		11.3	494	ug/L		96.6	(75%-125%)			
Zinc	500	U	3.30	477	ug/L		95.3	(75%-125%)		06/27/17	12:39
QC1203812386 425500003 MSD											
Antimony	500	U	3.50	479	ug/L	0.624	95.8	(0%-20%)		06/27/17	08:34
Calcium	5000		26600	31700	ug/L	0.0221	N/A	(0%-20%)			
Chromium	500	B	3.60	469	ug/L	0.642	93	(0%-20%)			
Magnesium	5000		6250	11100	ug/L	0.108	96.9	(0%-20%)			

June 28, 2017

GEL LABORATORIES LLC

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

QC Summary

Workorder: 425518

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Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time
Metals Analysis-ICP											
Batch	1674447										
Nickel	500	U	1.50	468	ug/L	0.622	93.6	(0%-20%)	HSC	06/27/17	08:34
Potassium	5000		1560	6350	ug/L	0.0362	95.8	(0%-20%)			
Vanadium	500		11.3	488	ug/L	1.25	95.4	(0%-20%)			
Zinc	500	U	3.30	447	ug/L	6.51	89.3	(0%-20%)		06/27/17	12:42
QC1203812387 425500003 SDILT											
Antimony		U	0.149	BD	-4.03	ug/L	N/A	(0%-20%)		06/27/17	08:37
Calcium			26600	D	5300	ug/L	.497	(0%-20%)			
Chromium		B	3.60	DU	5.00	ug/L	N/A	(0%-20%)			
Magnesium			6250	D	1280	ug/L	2.5	(0%-20%)			
Nickel		U	0.333	DU	7.50	ug/L	N/A	(0%-20%)			
Potassium			1560	D	321	ug/L	2.97	(0%-20%)			
Vanadium			11.3	BD	2.50	ug/L	10.6	(0%-20%)			
Zinc		U	0.891	DU	16.5	ug/L	N/A	(0%-20%)		06/27/17	12:45

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.

June 28, 2017

GEL LABORATORIES LLC

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

QC Summary

Workorder: 425518

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

Radiological Analysis

Case Narrative

June 28, 2017

Radiochemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL425518
Work Order #: 425518

"
"
"

Product: UISO_IE_PRECIP_AEA:COMMON"
Analytical Method: 'WUQaKaRTGEKaCGC"
Analytical Procedure: 'I N/TCF/C/233'TGX%48"
Analytical Batch: '389799: "

Vj g'hqmuy kpi 'uco r rgu'y gtg'cpcn{ | gf 'wukpi 'y g'cdqxg'o gj qf u'cpf "cpcn{ vlcenr tqegf wtg*u+0"

GEL Sample ID# "Client Sample Identification"

64773: 224 "D5; J [: "
3425: 37724 "O gj qf 'Dirpm'O D+ "
3425: 37725 "64773: 224'D5; J [: + 'Uco r rg'F w rkecvg'F WR+ "
3425: 37726 "Ncdqtcvqt { 'Eqpvtqni'Uco r rg'NEU+ "

Vj g'uco r rgu'kp'y ku'UFI 'y gtg'cpcn{ | gf 'qp'cp '\$cu'tgegkxgf '\$dcuku0"

Data Summary: "

Cm'uco r rg'f cv'r tqxkf gf 'lp'y ku'tgr qtv'o gv'y g'ceegr vpeg'etkgtk'ur gekk'gf 'lp'y g'cpcn{ vlcenr gj qf u'cpf r tqegf wtgu'ht 'lpxk'ecrkdte'vqp.'eqpv'k'kpi 'ecrkdte'vqp.'kputwo gpv'eqpvtqni'cpf 'r tqegu'eqpvtqni'y j gtg cr r rkecdrg.'y kj 'y g'hqmuy kpi "gzegr vqpu0"

Quality Control (QC) Information "

QC Information "

Cm'qh'y g'S E'uco r rgu'o gg'v'y g'tgs vktgf 'ceegr vpeg'ho ku'y kj 'y g'hqmuy kpi "gzegr vqpu<Vj g'uco r rg'cpf 'y g f w rkecvg.'3425: 37725'D5; J [: F WR+ 'cpf '64773: 224'D5; J [: + 'f k'pqv'o gg'v'y g'tgr'v'xg'r gtegpv'f 'htg'ppeg tgs vktgo gpv'ht'W45: > qy gxgt.'y g{ 'f q'o gg'v'y g'tgr'v'xg'gttqt 'tcvq'tgs vktgo gpv'y kj "c'xcmg'qh'30270"

Product: SRTOT_SEP_PRECIP_GPC: COMMON"

Analytical Method: 'UTVQVaUGRaRTGEKaI RE "
Analytical Procedure: 'I N/TCF/C/226'TGX%3: "
Analytical Batch: '3897784"

Vj g'hqmuy kpi 'uco r rgu'y gtg'cpcn{ | gf 'wukpi 'y g'cdqxg'o gj qf u'cpf "cpcn{ vlcenr tqegf wtg*u+0"

GEL Sample ID# "Client Sample Identification"

64773: 224 "D5; J [: "
3425: 36; 93 "O gj qf 'Dirpm'O D+ "
3425: 36; 94 "64774; 223'P qpUFI + 'Uco r rg'F w rkecvg'F WR+ "
3425: 36; 95 "Ncdqtcvqt { 'Eqpvtqni'Uco r rg'NEU+ "

Vj g'uco r rgu'kp'y ku'UFI 'y gtg'cpcn{ | gf 'qp'cp '\$cu'tgegkxgf '\$dcuku0"

Data Summary:

Cml'uco r ng'f cv'r tqxkf gf 'lp'vj ku'tgr qt'v'o gv'vj g'ceegr vpeg'etkgtk'ur gekhgf 'lp'vj g'cpcnf v'ecnr'o gvj qf u'cpf r tqegf wt'gu'ht 'lp'kkn'ecrkdtevkqp.'eqp'v'p'w'pi 'ecrkdtevkqp.'lp'utwo gp'v'eqp'tqm'cpf 'r tqegu'eqp'tqm'y j gtg'cr r r'ecdr'g.'y kj 'y g'hqmqy lpi 'gzegr v'kpu'0"

Technical Information

Recounts

Cffk'kqpcn'engcpwr 'uvgr u'y gtg'r gthqto gf 'qp'uco r ng'3425: 36; 94*P qp'UF I '64774; 223F WR+'lp'qtf gt'vq eqp'ht'o 'uco r ng't'guwn'0Vj g't'geqwpv'ku'tgr qt'v'gf 0Cffk'kqpcn'engcpwr 'uvgr u'y gtg'r gthqto gf 'qp'uco r ng'64773: 224*D5; J [: +'lp'qtf gt'vq'tgo q'xg'uwur gev'gf 'h'cnug'r qu'k'x'g'0Vj g't'geqwpv'ku'tgr qt'v'gf 0"

Product: TC99_EIE_LSC: COMMON

Analytical Method:"VE; ; aGKaNUe"

Analytical Procedure:"I N/TCF/C/27; 'TGX%7"

Analytical Batch:"3896889"

Vj g'hqmqy lpi 'uco r ngu'y gtg'cpcnf | gf 'w'uk'pi 'y g'cdq'xg'o gvj qf u'cpf 'cpcnf v'ecnr' tqegf wt'g'u'0"

GEL Sample ID# Client Sample Identification

64773: 224*.....D5; J [: "
3425: 34: 34*.....O gvj qf 'D'rcpm'0 D+ "
3425: 34: 35*.....6474: 4223*P qp'UF I +'Uco r ng'F wr r'ecv'g'F WR+ "
3425: 34: 36*.....Ncdqtcvqt { 'Eqp'tqm'Uco r ng'NE U+ "

Vj g'uco r ngu'lp'vj ku'UF I 'y gtg'cpcnf | gf 'qp'cp'\$cu't'gegk'x'g'\$'dcuku'0"

Data Summary:

Vj gtg'ctg'pq'gzegr v'kpu.'cpqo cr'ku'qt'f g'x'k'v'k'p'u'ht'qo 'y j g'ur gekhgf 'o gvj qf u'0Cml'uco r ng'f cv'r tqxkf gf 'lp'vj ku'tgr qt'v'o gv'vj g'ceegr vpeg'etkgtk'ur gekhgf 'lp'vj g'cpcnf v'ecnr'o gvj qf u'cpf 'r tqegf wt'gu'ht 'lp'kkn'ecrkdtevkqp.'eqp'v'p'w'pi 'ecrkdtevkqp.'lp'utwo gp'v'eqp'tqm'cpf 'r tqegu'eqp'tqm'y j gtg'cr r r'ecdr'g'0"

Product: TRITIUM_DIST_LSC: COMMON

Analytical Method:"VTk/KwO aF KUVaNUE"

Analytical Procedure:"I N/TCF/C/224'TGX%44"

Analytical Batch:"3897; 74"

Vj g'hqmqy lpi 'uco r ngu'y gtg'cpcnf | gf 'w'uk'pi 'y g'cdq'xg'o gvj qf u'cpf 'cpcnf v'ecnr' tqegf wt'g'u'0"

GEL Sample ID# Client Sample Identification

64773: 224*.....D5; J [: "
3425: 37: 8;O gvj qf 'D'rcpm'0 D+ "
3425: 37: 92*.....64773: 224*D5; J [: +'Uco r ng'F wr r'ecv'g'F WR+ "
3425: 37: 93*.....64773: 224*D5; J [: +'O cvtkz'Ur kng'0 U+ "

3425: 37: 94*****Ncdqtcvqt { "EqpvtqnUco r rg"NEU+"

"

Vj g"uco r rgu'lp'vj ku'UFI 'y gtg'cpcn{| gf "qp"cp"\$cu'tgegkxgf '\$dcuku0"

Data Summary:"

"

Cml'uco r rg'f cv'r tqxkf gf 'lp'vj ku'tgr qtv'o gv'vj g'ceegr vpeg'etkgtlc"ur gekhgf 'lp'vj g'cpcn{ vlcrl'o gjv qf u'cpf r tqegf wt gu'ht 'lp'kcn'ecrkdtevkp."eqpvkpwpi 'ecrkdtevkp.'kputwo gpv'eqpvtqni'cpf 'r tqegu'eqpvtqni'y j gtg cr r rdecdrq.'y kj 'vj g'hqmuy kpi "gzegr vkpu0"

"

Quality Control (QC) Information "

"

QC Information"

Cml'qh'vj g'S E'uco r rgu'o gg'vj g'tgs vktgf "ceegr vpeg'ho ku'y kj 'vj g'hqmuy kpi "gzegr vkpu<Vj g'O cvtz "Ur kng 3425: 37: 93"DS; J [: O U+f kf "pqv'o ggvtgeqxtg { 'tgs vktgo gpw'f wg'q"vj g'uco r rg'cevkxk{ "dglkpi 'i tgcvt'vj cp'hkxg vko gu'vj g'ur kngf "pqo kpcrleqpegpvtcvkp0"

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Certification Statement"

"

Y j gtg'vj g'cpcn{ vlcrl'o gjv qf 'j cu'dggp'r gthqto gf 'wvf gt'P GNCR'egt vlcrcvkp."vj g'cpcn{ uku'j cu'o gv'cm'qh'vj g tgs vktgo gpw'qh'vj g'P GNCE'ucpf ctf "vprguu'qvj gty kug'pqv'f 'lp'vj g'cpcn{ vlcrl'ecug'pcttcvkxg0"

June 28, 2017

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**Qualifier Definition Report
for**

ERTE223'EJ 4O J km'Rrcvcw'Tgo gf kvcqp'Ego r cp{
ErkpvUF I <I GN64773: "I GN"Y qtm'Qtf gt<64773:

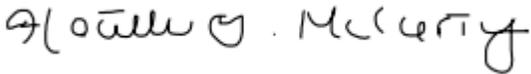
The Qualifiers in this report are defined as follows:

W""Cpcn{ | gf 'hqt'dw'pqv'f gvev'f'cdq'xg'ho k'kpi "etkgtk'0'k'pen'f'gu'OFN.'OFC.'RS N.'| gtq.'eqwp'kpi "gttqt.'cpf'vqcn
cpcn{ v'ecr'gttqt0

Review/Validation

I GN'tgs w'k'gu'cm'cpcn{ v'ecr'f'cvc'q'dg'xgt'k'k'f' "d{ "c's w'k'k'f' "f'cvc't'g'x'k'g'y'gt'0" k'p'c'f'f'k'k'p'.'cm'ENR'rkng'f'gr'k'x'g'cd'ng'u
t'g'g'k'g'c'v'j' k'f' "g'x'g'n't'g'x'k'g'y' "q'h'v'j' g' "t'c'v'k'p'c'n'f'c'v'c'r'c'c'c'n'i'g'0"

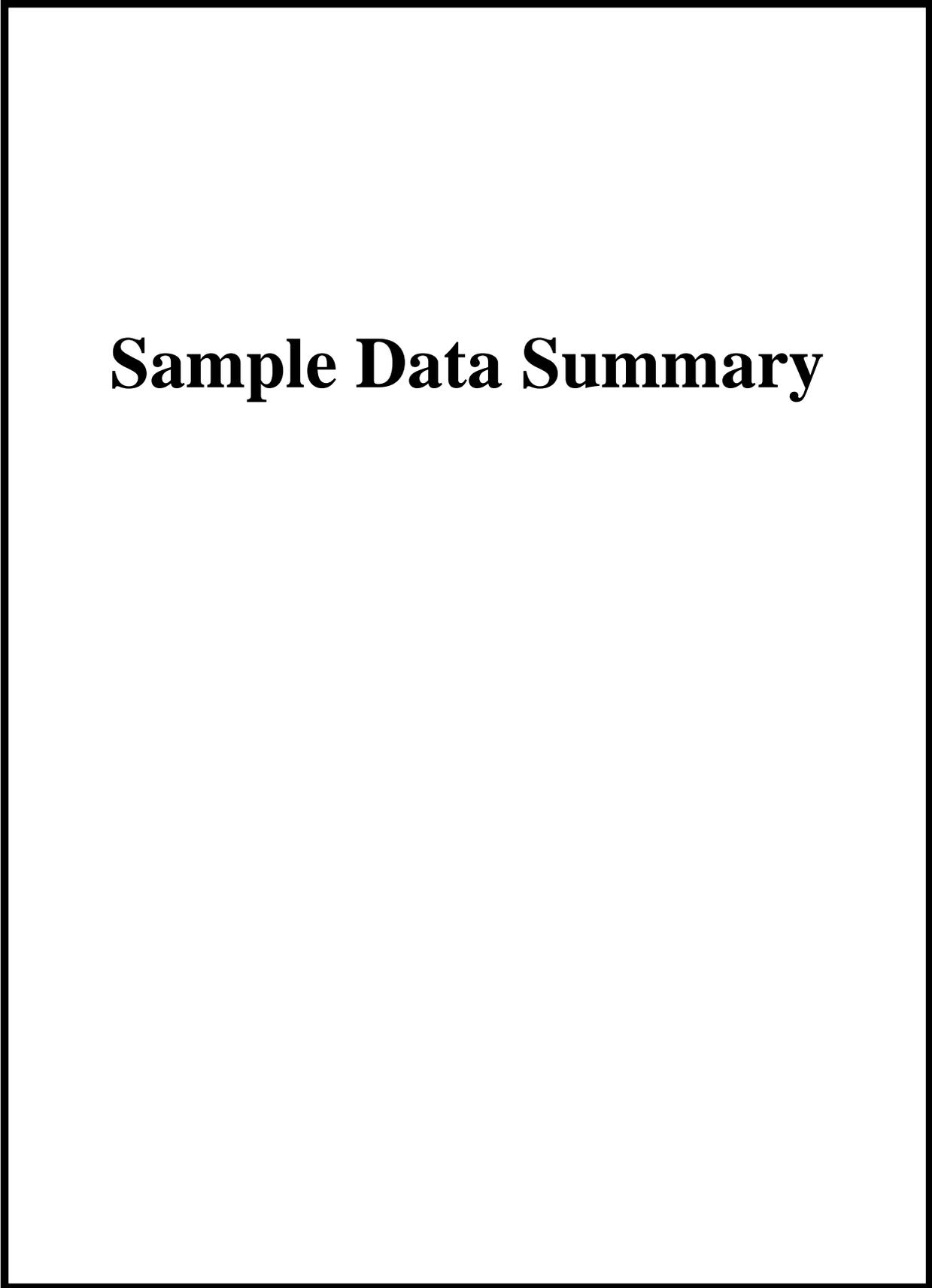
Vj'g'hq'm'y' k'p'i "f'c'v'x'c'r'f'c'v'q't'x'g't'k'k'f' "v'j' g' "k'p'q't'o'c'v'k'p'r't'g'g'p'v'g'f' "k'p'v'j' k'u'f'c'v't'g'r'q't'v'<

Signature: 

Name: Heather McCarty

Date: 28 JUN 2017

Title: Analyst II



Sample Data Summary

June 28, 2017

Certificate of Analysis
Sample Summary

SDG Number: GEL425518	Client: CPRC001	Project: CPRC0F16036
Lab Sample ID: 425518002	Date Collected: 06/14/2017 09:10	Matrix: WATER
	Date Received: 06/15/2017 09:05	
Client ID: B39HY8	Method: UIISO_IE_PRECIP_AEA	Prep Basis: "As Received"
Batch ID: 1675778	Analyst: BXA4	SOP Ref: GL-RAD-A-011
Run Date: 06/22/2017 08:52	Aliquot: 0.1 L	Instrument: 1004
Data File: S0425518002_UU.1A.gcnf	Prep Method: DOE EML HASL-300, U-02-R	Count Time: 240 min
Prep Batch: 1675778		
Prep Date: 06/21/2017 00:00		

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
U-233/234 <small>13968-55-3/13966-29-5</small>	Uranium-233/234		6.34	pCi/L	+/-1.26	1.51	0.353	1.00
15117-96-1/13982-7	Uranium-235/236	U	0.236	pCi/L	+/-0.311	0.312	0.236	1.00
7440-61-1	Uranium-238		5.00	pCi/L	+/-1.13	1.30	0.471	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Uranium-232 Tracer	21.0	20.9	pCi/L	101	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error. TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma). The MDC is a sample specific MDC.

June 28, 2017

**Certificate of Analysis
Sample Summary**

SDG Number: GEL425518	Client: CPRC001	Project: CPRC0F16036
Lab Sample ID: 425518002	Date Collected: 06/14/2017 09:10	Matrix: WATER
	Date Received: 06/15/2017 09:05	
Client ID: B39HY8	Method: SRTOT_SEP_PRECIP_GPC	Prep Basis: "As Received"
Batch ID: 1675562	Analyst: BXF1	SOP Ref: GL-RAD-A-004
Run Date: 06/27/2017 14:03	Aliquot: 300 mL	Instrument: PIC7D
Data File: S1675562r.xls	Prep Method: EPA 905.0 Modified/DOE RP5	Count Time: 60 min
Prep Batch: 1675562		
Prep Date: 06/21/2017 13:05		

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
SR-RAD	Total Strontium	U	1.36	pCi/L	+/-1.02	1.07	1.60	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Strontium Carrier	5.30	7.75	mg	68.4	(40%-110%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
 TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).
 The MDC is a sample specific MDC.

June 28, 2017

**Certificate of Analysis
Sample Summary**

SDG Number: GEL425518	Client: CPRC001	Project: CPRC0F16036
Lab Sample ID: 425518002	Date Collected: 06/14/2017 09:10	Matrix: WATER
	Date Received: 06/15/2017 09:05	
Client ID: B39HY8	Method: TC99_EIE_LSC	Prep Basis: "As Received"
Batch ID: 1674667	Analyst: CXS7	SOP Ref: GL-RAD-A-059
Run Date: 06/27/2017 05:32	Aliquot: 100 mL	Instrument: LSCRED
Data File: E1674667.xls	Prep Method: DOE EML HASL-300, Tc-02-	Count Time: 20 min
Prep Batch: 1674667		
Prep Date: 06/22/2017 15:36		

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99		468	pCi/L	+/-35.4	62.7	38.7	50.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	5.10E+05	5.31E+05	CPM	96	(30%-105%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
 TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).
 The MDC is a sample specific MDC.

June 28, 2017

Certificate of Analysis
Sample Summary

SDG Number: GEL425518	Client: CPRC001	Project: CPRC0F16036
Lab Sample ID: 425518002	Date Collected: 06/14/2017 09:10	Matrix: WATER
	Date Received: 06/15/2017 09:05	
Client ID: B39HY8	Method: TRITIUM_DIST_LSC	Prep Basis: "As Received"
Batch ID: 1675952	Analyst: BXM4	SOP Ref: GL-RAD-A-002
Run Date: 06/22/2017 21:00	Aliquot: 50 mL	Instrument: LSCSILVER
Data File: T1675952.xls	Prep Method: EPA 906.0 Modified	Count Time: .699999988079071 min
Prep Batch: 1675952		
Prep Date: 06/22/2017 10:04		

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium		3.59E+06	pCi/L	+/-69000	6.98E+05	2990	400

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
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Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
 TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).
 The MDC is a sample specific MDC.

Quality Control Summary

GEL LABORATORIES LLC

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QC Summary

Report Date: June 28, 2017
Page 1 of 3

Client : CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Workorder: 425518

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch	1675778								
QC1203815502	MB								
Uranium-233/234			U	-0.158	pCi/L			BXA4	06/22/1708:52
				Uncert: +/-0.223					
				TPU: +/-0.223					
Uranium-235/236			U	0.0605	pCi/L				
				Uncert: +/-0.336					
				TPU: +/-0.337					
Uranium-238			U	0.354	pCi/L				
				Uncert: +/-0.417					
				TPU: +/-0.421					
**Uranium-232 Tracer	20.9			15.0	pCi/L	REC: 72	(30%-105%)		
				Uncert: +/-2.77					
				TPU: +/-4.20					
QC1203815503	425518002	DUP							
Uranium-233/234			6.34	5.64	pCi/L				
				Uncert: +/-1.26		RPD: 12	(0% - 20%)		
				TPU: +/-1.51		RER: 0.645	(0-2)		
Uranium-235/236		U	0.236	0.161	pCi/L				
				Uncert: +/-0.311		RPD: 60	N/A		
				TPU: +/-0.312		RER: 0.332	(0-2)		
Uranium-238			5.00	4.05	pCi/L				
				Uncert: +/-1.13		RPD: 21*	(0% - 20%)		
				TPU: +/-1.30		RER: 1.05	(0-2)		
**Uranium-232 Tracer	20.9		21.0	17.7	pCi/L	REC: 85	(30%-105%)		
				Uncert: +/-2.28					
				TPU: +/-3.56					
QC1203815504	LCS								
Uranium-233/234				28.7	pCi/L				
				Uncert: +/-3.29					
				TPU: +/-5.50					
Uranium-235/236				1.33	pCi/L				
				Uncert: +/-0.825					
				TPU: +/-0.850					
Uranium-238	27.0			26.8	pCi/L	REC: 99	(80%-120%)		
				Uncert: +/-3.19					
				TPU: +/-5.21					
**Uranium-232 Tracer	20.9			14.9	pCi/L	REC: 71	(30%-105%)		
				Uncert: +/-2.82					
				TPU: +/-4.27					
Rad Gas Flow									
Batch	1675562								
QC1203814971	MB								
Total Strontium			U	-0.503	pCi/L			BXF1	06/27/1714:03
				Uncert: +/-0.599					

QC Summary

Workorder: 425518

Page 2 of 3

Parname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gas Flow									
Batch	1675562								
		TPU:		+/-0.599					
**Strontium Carrier	7.75			8.10	mg	REC: 105	(40%-110%)		
QC1203814972	425529001	DUP							
Total Strontium		4.60		3.40	pCi/L				06/27/1716:08
		Uncert:	+/-1.51	+/-1.09		RPD: 30	(0% - 100%)		
		TPU:	+/-1.85	+/-1.35		RER: 1.03	(0-2)		
**Strontium Carrier	7.75	4.10		5.60	mg	REC: 72	(40%-110%)		
QC1203814973	LCS								
Total Strontium	72.9			71.7	pCi/L	REC: 98	(80%-120%)		06/23/1711:13
		Uncert:		+/-3.81					
		TPU:		+/-16.9					
**Strontium Carrier	7.75			7.00	mg	REC: 90	(40%-110%)		
Rad Liquid Scintillation									
Batch	1674667								
QC1203812812	MB								
Technetium-99			U	-21	pCi/L			CXS7	06/27/1705:54
		Uncert:		+/-23.2					
		TPU:		+/-23.2					
**Technetium-99m Tracer	5.31E+05			4.71E+05	CPM	REC: 89	(30%-105%)		
QC1203812813	425282001	DUP							
Technetium-99		6210		6250	pCi/L				06/27/1706:15
		Uncert:	+/-126	+/-127		RPD: 1	(0% - 20%)		
		TPU:	+/-697	+/-703		RER: 0.0874	(0-2)		
**Technetium-99m Tracer	5.31E+05	5.10E+05		4.52E+05	CPM	REC: 85	(30%-105%)		
QC1203812814	LCS								
Technetium-99	861			773	pCi/L	REC: 90	(80%-120%)		06/27/1706:32
		Uncert:		+/-42.7					
		TPU:		+/-95.5					
**Technetium-99m Tracer	5.31E+05			4.93E+05	CPM	REC: 93	(30%-105%)		
Batch	1675952								
QC1203815869	MB								
Tritium			U	37.9	pCi/L			BXM4	06/22/1721:03
		Uncert:		+/-205					
		TPU:		+/-205					
QC1203815870	425518002	DUP							
Tritium		3.59E+06		3.67E+06	pCi/L				06/22/1721:49
		Uncert:	+/-69000	+/-70300		RPD: 2	(0% - 20%)		
		TPU:	+/-6.98E+05	+/-7.14E+05		RER: 0.159	(0-2)		
QC1203815871	425518002	MS							
Tritium	2240	3.59E+06		3.58E+06	pCi/L	REC: N/A			06/22/1721:50
		Uncert:	+/-69000	+/-69000					
		TPU:	+/-6.98E+05	+/-6.96E+05					
QC1203815872	LCS								
Tritium	2240			2040	pCi/L	REC: 91	(80%-120%)		06/22/1721:53
		Uncert:		+/-293					
		TPU:		+/-491					

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

QC Summary

Workorder: 425518

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date	Time
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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).
- B The associated QC sample blank has a result $\geq 2X$ the MDA and, after corrections, result is \geq MDA for this sample
- 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.
- UX Gamma Spectroscopy--Uncertain identification
- 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.

** Indicates analyte is a surrogate compound.

^ 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.

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.