

November 11, 2021

Mr. Jeff Lux
Environmental Properties Management, LLC
615 N. Hudson
Suite 200
Oklahoma City, Oklahoma 73102

Re: Uranium Daughter Activities Evaluation
Work Order: 559068

Dear Mr. Lux:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the following analytical results for the sample(s) we received on October 15, 2021. 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. 4289.

Sincerely,



Grace Bodiford for
Julie Robinson
Project Manager

Purchase Order: 176069
Chain of Custody: 2021-059
Enclosures



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Case Narrative

CASE NARRATIVE
for
Burns & McDonnell
Uranium Daughter Activities Evaluation
SDG:559068

November 11, 2021

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on October 15, 2021 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 There are no additional items of note concerning this SDG.

Sample Identification The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
559068001	TMW-13
559068002	02W02
559068003	02W01
559068004	TMW-09

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: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Radiochemistry.



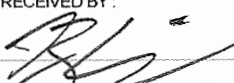
This data package, to the best of my knowledge, is in compliance with technical and administrative requirements.



Grace Bodiford for
Julie Robinson
Project Manager

Chain of Custody and Supporting Documentation

559068 ORIGINAL

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST										COC #: 2021-059											
SHIP TO: Company Name: GEL Laboratories LLC Address: 2040 Savage Road Address: Charleston, SC 29407 Contact Person: Julie Robinson Phone: 843-769-7393						SHIP FROM: Environmental Properties Management 100 North Highway 74 Guthrie, OK 73044 Contact Person: Jeff Lux Phone: 405-642-5152				ANALYSIS REQUESTED											
I ATTEST THAT THE PROPER FIELD SAMPLING PROCEDURES WERE USED DURING THE COLLECTION OF THESE SAMPLES. SAMPLER SIGNATURE: 										Th-234, Th-231, Pa-234 (EPA 901.1)	U-234, U-235, U-238 (HASL 300)										
SITE: CIMARRON FACILITY						SAMPLE TYPE															
SAMPLE			CONTAINER			SOLID		WATER													
ID	DATE	TIME	NO.	TYPE	SIZE	SOIL	OTHER	"X" IF WATER	PRESERV.	FILTERED 45µ Y/N											
TMW-13	10/13/2021	945	1	P	2 L			X	HNO3	Y	X										
TMW-13	10/13/2021	945	1	P	500 ml			X	HNO3	Y		X									
O2W02	10/13/2021	1125	1	P	2 L			X	HNO3	Y	X										
O2W02	10/13/2021	1125	1	P	500 ml			X	HNO3	Y		X									
O2W01	10/13/2021	1450	1	P	2 L			X	HNO3	Y	X										
O2W01	10/13/2021	1450	1	P	500 ml			X	HNO3	Y		X									
TMW-09	10/13/2021	1550	1	P	2 L			X	HNO3	Y	X										
TMW-09	10/13/2021	1550	1	P	500 ml			X	HNO3	Y		X									
Potential Hazardous Characteristics						Sample Disposal															
<input checked="" type="checkbox"/> Non-Haz <input type="checkbox"/> RCRA D001,2&3, or 4 <input type="checkbox"/> RCRA Listed <input type="checkbox"/> Radioactive <input type="checkbox"/> Unknown						<input checked="" type="checkbox"/> Disposal Lab <input type="checkbox"/> Return to Client <input type="checkbox"/> Holding pending further instructions															
PROJECT NAME: Uranium Daughter Activities Evaluation						PO#: 176069															
THIS SAMPLE MEETS ALL APPROPRIATE RADIOLOGICAL REQUIREMENTS:						HP INITIAL: <u>BIB</u>			NOTES:												
RELINQUISHED BY SAMPLER:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:	Distribution: Standard GEL EDD & GEL lab report in .pdf format to: - jlux@envpm.com - slawrence@burnsmcd.com - jmaisler@enercon.com EQuIS EDD to: - jlux@envpm.com - dhorne@burnsmcd.com															
	10/14/21	1600		10/15/21	0955																
RELINQUISHED BY:	DATE:	TIME:	RECEIVED BY:	DATE:	TIME:																


QA Review

10/14/2021

STR



Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: <u>CMRN</u>		SDG/AR/COC/Work Order: <u>559063</u>			
Received By: <u>BE</u>		Date Received: <u>10/15/21</u>			
Carrier and Tracking Number		Circle Applicable: <u>FedEx Express</u> FedEx Ground UPS Field Services Courier Other <u>2848 9647 6414</u> <u>2848 9647 3757</u>			
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): <u>00</u> 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 <u>None</u> Other: _____ *all temperatures are recorded in Celsius TEMP: <u>24</u>
4	Daily check performed and passed on IR temperature gun?	/			Temperature Device Serial #: <u>IR2-21</u> 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 ___
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 NRL Date 10/18/21 Page 1 of 1

Laboratory Certification

List of current GEL Certifications as of 11 November 2021

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	T104704235-21-19
Utah NELAP	SC000122021-36
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

Radiological Analysis

Case Narrative

**Radiochemistry
Technical Case Narrative
Burns & McDonnell
SDG #: 559068**

Product: Alphaspec U, Liquid

Analytical Method: DOE EML HASL-300, U-02-RC Modified

Analytical Procedure: GL-RAD-A-011 REV# 28

Analytical Batch: 2191040

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
559068001	TMW-13
559068002	02W02
559068003	02W01
559068004	TMW-09
1204943045	Method Blank (MB)
1204943046	559068001(TMW-13) Sample Duplicate (DUP)
1204943047	Laboratory Control Sample (LCS)

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.

Product: Gammaspec, Gamma, Liquid

Analytical Method: EPA 901.1

Analytical Procedure: GL-RAD-A-013 REV# 27

Analytical Batch: 2186917

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
559068001	TMW-13
559068002	02W02
559068003	02W01
559068004	TMW-09
1204934355	Method Blank (MB)
1204934356	559068001(TMW-13) Sample Duplicate (DUP)
1204934357	Laboratory Control Sample (LCS)

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.

Qualifier Information

Qualifier	Reason	Analyte	Sample	Client Sample
UI	Results are considered a false positive due to high peak-width.	Thorium-234	559068004	TMW-09
UI	Results are considered a false positive due to interference.	Thorium-231	559068001	TMW-13

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

CMRN001 Burns & McDonnell

Client SDG: 559068 GEL Work Order: 559068

The Qualifiers in this report are defined as follows:

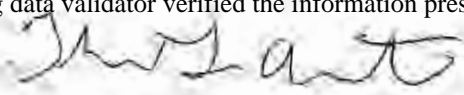
- * A quality control analyte recovery is outside of specified acceptance criteria
- ** Analyte is a Tracer compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- UI Gamma Spectroscopy--Uncertain identification

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: Theresa Austin

Date: 11 NOV 2021

Title: Group Leader

Sample Data Summary

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Environmental Properties
Address : Management, LLC
615 N. Hudson
Suite 200
Oklahoma City, Oklahoma 73102

Report Date: November 11, 2021

Contact: Mr. Jeff Lux
Project: Uranium Daughter Activities Evaluation

Client Sample ID: TMW-13
Sample ID: 559068001
Matrix: Water
Collect Date: 13-OCT-21
Receive Date: 15-OCT-21
Collector: Client

Project: CMRN00620
Client ID: CMRN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Liquid "As Received"</i>														
Uranium-233/234		602	+/-21.8	1.84	+/-130	1.00	pCi/L			BV1	11/10/21	1131	2191040	1
Uranium-235/236		38.4	+/-6.14	1.21	+/-10.2	1.00	pCi/L							
Uranium-238		364	+/-16.9	1.51	+/-79.3	1.00	pCi/L							
Rad Gamma Spec Analysis														
<i>Gammasec, Gamma, Liquid "As Received"</i>														
Protactinium-234	U	24.4	+/-30.3	71.2	+/-42.6		pCi/L			MXR1	10/25/21	0845	2186917	2
Thorium-231	UI	0.000	+/-108	107	+/-110		pCi/L							
Thorium-234	U	80.3	+/-311	585	+/-314		pCi/L							

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	EPA 901.1

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer	Alphaspec U, Liquid "As Received"	2191040	30.1	(15%-125%)

Notes:
The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration

Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Environmental Properties
 Address : Management, LLC
 615 N. Hudson
 Suite 200
 Oklahoma City, Oklahoma 73102

Report Date: November 11, 2021

Contact: Mr. Jeff Lux
 Project: Uranium Daughter Activities Evaluation

Client Sample ID: 02W02
 Sample ID: 559068002
 Matrix: Water
 Collect Date: 13-OCT-21
 Receive Date: 15-OCT-21
 Collector: Client

Project: CMRN00620
 Client ID: CMRN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Liquid "As Received"</i>														
Uranium-233/234		418	+/-17.5	2.12	+/-88.9	1.00	pCi/L			BV1	11/10/21	1131	2191040	1
Uranium-235/236		38.2	+/-5.91	1.13	+/-9.93	1.00	pCi/L							
Uranium-238		309	+/-15.1	1.71	+/-66.1	1.00	pCi/L							
Rad Gamma Spec Analysis														
<i>Gammasespec, Gamma, Liquid "As Received"</i>														
Protactinium-234	U	-14.5	+/-26.3	49.0	+/-31.8		pCi/L			MXR1	10/25/21	0845	2186917	2
Thorium-231	U	2.05	+/-77.5	128	+/-77.5		pCi/L							
Thorium-234	U	-247	+/-321	577	+/-344		pCi/L							

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	EPA 901.1

Surrogate/Tracer	Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer		Alphaspec U, Liquid "As Received"	2191040	30.7	(15%-125%)

Notes:
 The MDC is a sample specific MDC.
 TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor	Mtd.: Method
DL: Detection Limit	PF: Prep Factor
Lc/LC: Critical Level	RL: Reporting Limit
MDA: Minimum Detectable Activity	TPU: Total Propagated Uncertainty
MDC: Minimum Detectable Concentration	

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Environmental Properties
Address : Management, LLC
615 N. Hudson
Suite 200
Oklahoma City, Oklahoma 73102

Report Date: November 11, 2021

Contact: Mr. Jeff Lux

Project: Uranium Daughter Activities Evaluation

Client Sample ID: 02W01

Project: CMRN00620

Sample ID: 559068003

Client ID: CMRN001

Matrix: Water

Collect Date: 13-OCT-21

Receive Date: 15-OCT-21

Collector: Client

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
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Rad Alpha Spec Analysis

Alphaspec U, Liquid "As Received"

Uranium-233/234		1040	+/-35.3	3.22	+/-281	1.00	pCi/L			BV1	11/10/21	1356	2191040	1
Uranium-235/236		74.2	+/-10.5	1.15	+/-22.4	1.00	pCi/L							
Uranium-238		604	+/-26.9	2.05	+/-164	1.00	pCi/L							

Rad Gamma Spec Analysis

Gammasespec, Gamma, Liquid "As Received"

Protactinium-234	U	3.89	+/-38.5	79.2	+/-38.8		pCi/L			MXR1	10/25/21	0846	2186917	2
Thorium-231	U	77.6	+/-145	109	+/-145		pCi/L							
Thorium-234	U	-222	+/-322	559	+/-342		pCi/L							

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	EPA 901.1

Surrogate/Tracer	Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer		Alphaspec U, Liquid "As Received"	2191040	18.4	(15%-125%)

Notes:

The MDC is a sample specific MDC.

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

Column headers are defined as follows:

DF: Dilution Factor

DL: Detection Limit

Lc/LC: Critical Level

MDA: Minimum Detectable Activity

MDC: Minimum Detectable Concentration

Mtd.: Method

PF: Prep Factor

RL: Reporting Limit

TPU: Total Propagated Uncertainty

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Environmental Properties
Address : Management, LLC
615 N. Hudson
Suite 200
Oklahoma City, Oklahoma 73102

Report Date: November 11, 2021

Contact: Mr. Jeff Lux

Project: Uranium Daughter Activities Evaluation

Client Sample ID: TMW-09
Sample ID: 559068004
Matrix: Water
Collect Date: 13-OCT-21
Receive Date: 15-OCT-21
Collector: Client

Project: CMRN00620
Client ID: CMRN001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Alpha Spec Analysis														
<i>Alphaspec U, Liquid "As Received"</i>														
Uranium-233/234		950	+/-29.3	1.97	+/-216	1.00	pCi/L			BV1	11/10/21	1356	2191040	1
Uranium-235/236		58.0	+/-8.08	1.61	+/-15.4	1.00	pCi/L							
Uranium-238		660	+/-24.4	1.74	+/-151	1.00	pCi/L							
Rad Gamma Spec Analysis														
<i>Gammasespec, Gamma, Liquid "As Received"</i>														
Protactinium-234	U	-13.4	+/-47.6	84.7	+/-50.4		pCi/L			MXR1	10/25/21	0854	2186917	2
Thorium-231	U	-8.39	+/-95.9	165	+/-95.9		pCi/L							
Thorium-234	UI	0.000	+/-815	530	+/-843		pCi/L							

The following Analytical Methods were performed

Method	Description
1	DOE EML HASL-300, U-02-RC Modified
2	EPA 901.1

Surrogate/Tracer	Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Uranium-232 Tracer		Alphaspec U, Liquid "As Received"	2191040	26.7	(15%-125%)

Notes:
The MDC is a sample specific MDC.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

Column headers are defined as follows:

DF: Dilution Factor
DL: Detection Limit
Lc/LC: Critical Level
MDA: Minimum Detectable Activity
MDC: Minimum Detectable Concentration

Mtd.: Method
PF: Prep Factor
RL: Reporting Limit
TPU: Total Propagated Uncertainty

Quality Control Summary

GEL LABORATORIES LLC

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

QC Summary

Report Date: November 11, 2021
Page 1 of 3

Client : Environmental Properties Management, LLC
615 N. Hudson
Suite 200
Oklahoma City, Oklahoma

Contact: Mr. Jeff Lux

Workorder: 559068

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Alpha Spec											
Batch	2191040										
QC1204943046	559068001 DUP										
Uranium-233/234		602		553	pCi/L	8.45		(0%-20%)	BV1	11/10/21	13:56
	Uncert:	+/-21.8		+/-20.2							
	TPU:	+/-130		+/-120							
Uranium-235/236		38.4		32.7	pCi/L	16.2		(0%-20%)			
	Uncert:	+/-6.14		+/-5.48							
	TPU:	+/-10.2		+/-8.88							
Uranium-238		364		339	pCi/L	7.03		(0%-20%)			
	Uncert:	+/-16.9		+/-15.8							
	TPU:	+/-79.3		+/-74.3							
QC1204943047	LCS										
Uranium-233/234				26.0	pCi/L				BV1	11/10/21	13:56
	Uncert:			+/-2.57							
	TPU:			+/-4.32							
Uranium-235/236				1.39	pCi/L						
	Uncert:			+/-0.692							
	TPU:			+/-0.716							
Uranium-238	27.1			28.4	pCi/L		105	(75%-125%)			
	Uncert:			+/-2.67							
	TPU:			+/-4.63							
QC1204943045	MB										
Uranium-233/234			U	-0.0464	pCi/L				BV1	11/10/21	13:56
	Uncert:			+/-0.258							
	TPU:			+/-0.258							
Uranium-235/236			U	0.0245	pCi/L						
	Uncert:			+/-0.256							
	TPU:			+/-0.256							
Uranium-238			U	0.252	pCi/L						
	Uncert:			+/-0.351							
	TPU:			+/-0.353							
Rad Gamma Spec											
Batch	2186917										
QC1204934356	559068001 DUP										
Protactinium-234		U	24.4	U	-41.4	pCi/L	0		N/AMXR1	10/25/21	11:07
	Uncert:		+/-30.3		+/-45.0						
	TPU:		+/-42.6		+/-68.1						
Thorium-231		UI	0.000	U	43.4	pCi/L	0		N/A		
	Uncert:		+/-108		+/-106						
	TPU:		+/-110		+/-106						
Thorium-234		U	80.3	U	241	pCi/L	0		N/A		
	Uncert:		+/-311		+/-430						
	TPU:				+/-434						

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QC Summary

Workorder: 559068

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Rad Gamma Spec									
Batch	2186917								
		+/-314							
QC1204934357 LCS									
Americium-241	1.09E+05		1.18E+05	pCi/L		109	(75%-125%)	MXR1	10/25/2109:15
	Uncert:		+/-2070						
	TPU:		+/-11100						
Cesium-137	37800		39900	pCi/L		105	(75%-125%)		
	Uncert:		+/-676						
	TPU:		+/-3450						
Cobalt-60	21400		22700	pCi/L		106	(75%-125%)		
	Uncert:		+/-614						
	TPU:		+/-2140						
Protactinium-234		U	70.5	pCi/L					
	Uncert:		+/-1200						
	TPU:		+/-1210						
Thorium-231		U	93.4	pCi/L					
	Uncert:		+/-990						
	TPU:		+/-991						
Thorium-234		U	-1060	pCi/L					
	Uncert:		+/-2650						
	TPU:		+/-2700						
QC1204934355 MB									
Protactinium-234		U	3.80	pCi/L				MXR1	10/25/2108:46
	Uncert:		+/-41.5						
	TPU:		+/-41.7						
Thorium-231		U	19.8	pCi/L					
	Uncert:		+/-45.4						
	TPU:		+/-46.3						
Thorium-234		U	-185	pCi/L					
	Uncert:		+/-219						
	TPU:		+/-238						

Notes:

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

The Qualifiers in this report are defined as follows:

- ** Analyte is a Tracer compound
- < Result is less than value reported
- > Result is greater than value reported
- BD Results are either below the MDC or tracer recovery is low
- FA Failed analysis.
- H Analytical holding time was exceeded
- J See case narrative for an explanation
- J Value is estimated
- K Analyte present. Reported value may be biased high. Actual value is expected to be lower.
- L Analyte present. Reported value may be biased low. Actual value is expected to be higher.

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QC Summary

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Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
M	M if above MDC and less than LLD									
M	REMP Result > MDC/CL and < RDL									
N/A	RPD or %Recovery limits do not apply.									
N1	See case narrative									
ND	Analyte concentration is not detected above the detection limit									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
R	Sample results are rejected									
U	Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.									
UI	Gamma Spectroscopy--Uncertain identification									
UJ	Gamma Spectroscopy--Uncertain identification									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
^	RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.									
h	Preparation or preservation holding time was exceeded									

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/tracer 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.