

January 04, 2024

Katrina Alsum
Technology Laboratory, Inc.
1012 Centre Avenue
Fort Collins, Colorado 80526

Re: Radium in Groundwater
Work Order: 648284

Dear Katrina Alsum:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on December 11, 2023. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

The sample was delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. The following additional comments were noted at receipt: (insert text box)..

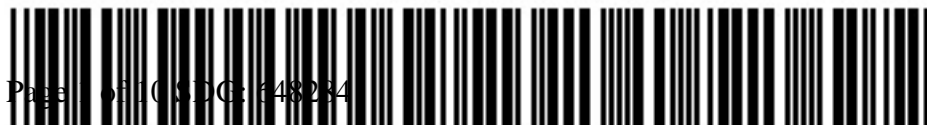
Test results for NELAP or ISO 17025 accredited tests are verified to meet the requirements of those standards, with any exceptions noted. The results reported relate only to the items tested and to the sample as received by the laboratory. These results may not be reproduced except as full reports without 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. 4422.

Sincerely,

Adrian Melendrez for
Jacob Crook
Project Manager

Purchase Order: 4633KA
Enclosures



GEL LABORATORIES LLC

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

Certificate of Analysis Report for

TELA001 Technology Laboratory, Inc

Client SDG: 648284 GEL Work Order: 648284

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
- ** Analyte is a surrogate compound
- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.

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 Certificate of Analysis.

The designation ND, if present, appears in the result column when the analyte concentration is not detected above the limit as defined in the 'U' qualifier above.

This data report has been prepared and reviewed in accordance with GEL Laboratories LLC standard operating procedures. Please direct any questions to your Project Manager, Jacob Crook.

Reviewed by



GEL LABORATORIES LLC

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

Certificate of Analysis

Company : Technology Laboratory, Inc.
Address : 1012 Centre Avenue

Fort Collins, Colorado 80526

Report Date: January 4, 2024

Contact: Katrina Alsum

Project: Radium in Groundwater

Client Sample ID: Schug
Sample ID: 648284001
Matrix: Water
Collect Date: 20-NOV-23
Receive Date: 11-DEC-23
Collector: Client

Project: TELA00122
Client ID: TELA001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228		38.0	+/-3.11	1.70	+/-10.2	3.00	pCi/L			JE1	01/02/24	0842	2542182	1
Rad Radium-226														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226		13.2	+/-1.57	0.383	+/-3.04	1.00	pCi/L			LXP1	01/02/24	1012	2539558	2

The following Analytical Methods were performed

Method	Description
1	EPA 904.0/SW846 9320 Modified
2	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2542182	82.2	(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

QC Summary

Client : Technology Laboratory, Inc.
1012 Centre Avenue

Report Date: January 4, 2024
Page 1 of 2

Contact: Fort Collins, Colorado

Workorder: Katrina Alsum

648284

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	2542182										
QC1205604502	647845001	DUP									
Radium-228		U	-0.257	U	0.524	pCi/L	0		N/A	JE1	12/27/2311:51
		Uncert:	+/-1.05		+/-0.795						
		TPU:	+/-1.05		+/-0.806						
QC1205604503	LCS										
Radium-228	75.2				69.8	pCi/L	92.9	(75%-125%)	JE1	12/27/2311:51	
		Uncert:			+/-4.07						
		TPU:			+/-18.7						
QC1205604501	MB										
Radium-228				U	0.0517	pCi/L			JE1	12/27/2311:51	
		Uncert:			+/-0.847						
		TPU:			+/-0.848						
Rad Ra-226											
Batch	2539558										
QC1205600120	LCS										
Radium-226	27.0				27.0	pCi/L	100	(75%-125%)	LXP1	01/02/2410:52	
		Uncert:			+/-2.37						
		TPU:			+/-6.64						
QC1205600115	MB										
Radium-226				U	0.0674	pCi/L			LXP1	01/02/2410:31	
		Uncert:			+/-0.171						
		TPU:			+/-0.171						

Notes:

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

The Qualifiers in this report are defined as follows:

- U Analyte was analyzed for, but not detected above the MDL, MDA, MDC or LOD.
- J Value is estimated
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- H Analytical holding time was exceeded
- < Result is less than value reported
- > Result is greater than value reported
- UI Gamma Spectroscopy--Uncertain identification
- BD Results are either below the MDC or tracer recovery is low
- h Preparation or preservation holding time was exceeded
- R Sample results are rejected
- ^ RPD of sample and duplicate evaluated using +/-RL. Concentrations are <5X the RL. Qualifier Not Applicable for Radiochemistry.
- N/A RPD or %Recovery limits do not apply.
- ND Analyte concentration is not detected above the detection limit

GEL LABORATORIES LLC

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

QC Summary

Workorder: 648284

Page 2 of 2

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
M	M if above MDC and less than LLD									
NJ	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier									
FA	Failed analysis.									
UJ	Gamma Spectroscopy--Uncertain identification									
Q	One or more quality control criteria have not been met. Refer to the applicable narrative or DER.									
K	Analyte present. Reported value may be biased high. Actual value is expected to be lower.									
UL	Not considered detected. The associated number is the reported concentration, which may be inaccurate due to a low bias.									
L	Analyte present. Reported value may be biased low. Actual value is expected to be higher.									
N1	See case narrative									
Y	Other specific qualifiers were required to properly define the results. Consult case narrative.									
**	Analyte is a Tracer compound									
M	REMP Result > MDC/CL and < RDL									
J	See case narrative for an explanation									

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.

SAMPLE RECEIPT & REVIEW FORM

Client: TECUA
 Received By: Thyasia Tatum
 Date Received: 12/11/23
 SDG/AR/COC/Work Order: 648284
 Carrier and Tracking Number: 7743 8010 4336
 FedEx Express ☒ FedEx Ground ☐ UPS ☐ Field Services ☐ Courier ☐ Other ☐

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#: _____
 B) Did the client designate the samples are to be received as radioactive? ☒ If UN2910, Is the Radioactive Shipment Survey Compliant? Yes ☐ No ☐
 C) Did the RSO classify the samples as radioactive? ☒ COC notation or radioactive stickers on containers equal client designation.
 D) Did the client designate samples are hazardous? ☒ Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0 CPM / mR/Hr
 Classified as: Rad 1 Rad 2 Rad 3
 E) Did the RSO identify possible hazards? ☒ COC notation or hazard labels on containers equal client designation.
 If D or E is yes, select Hazards below:
 PCBs ☐ 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?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Client contacted and provided COC COC created upon receipt
3	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Preservation Method: Wet Ice Ice Packs Dry ice <input checked="" type="radio"/> None <input type="radio"/> Other: _____ *all temperatures are recorded in Celsius
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <u>462-23</u> TEMP: <u>16°C</u> Secondary Temperature Device Serial # (If Applicable): _____
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
6	Samples requiring chemical preservation at proper pH?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and Containers Affected: <u>see below</u> If Preservation added, Lot#: <u>231117BP</u>
7	Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	If Yes, are Encores or Soil Kits present for solids? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> (If yes, take to VOA Freezer) Do liquid VOA vials contain acid preservation? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> (If unknown, select No) Are liquid VOA vials free of headspace? Yes <input type="checkbox"/> No <input type="checkbox"/> NA <input type="checkbox"/> Sample ID's and containers affected: _____
8	Samples received within holding time?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID's and tests affected: _____
9	Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	ID's and containers affected: _____
10	Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	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?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: No container count on COC Other (describe)
12	Are sample containers identifiable as GEL provided by use of GEL labels?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):
Sample ID: Schug, Linnebur, Marwitz, DECKER,
7743 4529 1781
 PM (or PMA) review: Initials 00 Date 12/11/23 Page 1 of 1

List of current GEL Certifications as of 04 January 2024

State	Certification
Alabama	42200
Alaska	17-018
Alaska Drinking Water	SC00012
Arkansas	88-00651
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	KY90129
Kentucky Wastewater	KY90129
Louisiana Drinking Water	LA024
Louisiana NELAP	03046 (AI33904)
Maine	2023019
Maryland	270
Massachusetts	M-SC012
Massachusetts PFAS Approv	Letter
Michigan	9976
Mississippi	SC00012
Nebraska	NE-OS-26-13
Nevada	SC000122024-05
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	2023-152
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	T104704235-23-21
Utah NELAP	SC000122023-38
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

**Radiochemistry
Technical Case Narrative
Technology Laboratory, Inc
SDG #: 648284**

Product: GFPC Ra228, Liquid

Analytical Method: EPA 904.0/SW846 9320 Modified

Analytical Procedure: GL-RAD-A-063 REV# 5

Analytical Batch: 2542182

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
648284001	Schug
1205604501	Method Blank (MB)
1205604502	647845001(NonSDG) Sample Duplicate (DUP)
1205604503	Laboratory Control Sample (LCS)

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.

Technical Information

Recounts

Sample 648284001 (Schug) was re-eluted and recounted to verify sample result. The recount is reported.

Product: Lucas Cell, Ra226, Liquid

Analytical Method: EPA 903.1 Modified

Analytical Procedure: GL-RAD-A-008 REV# 15

Analytical Batch: 2539558

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
648284001	Schug
1205600115	Method Blank (MB)
1205600120	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.

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.