



October 12, 2022

Chris Decker
Laboratory for EPA
100 OB Curtis Drive
Ridgeland, Mississippi 39157

Re: Jackson Emergency Response
Work Order: 594760

Dear Chris Decker:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on September 28, 2022. 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. 4422.

Sincerely,

Jake Crook
Project Manager

Purchase Order: Pending
Enclosures

GEL LABORATORIES LLC

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

**Certificate of Analysis Report
for**

EPAJ001 EPA

Client SDG: 594760 GEL Work Order: 594760

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, Jake Crook.



Reviewed by _____

GEL LABORATORIES LLC

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Certificate of Analysis

Company : Laboratory for EPA
Address : 100 OB Curtis Drive
Ridgeland, Mississippi 39157
Contact: Chris Decker
Project: Jackson Emergency Response

Report Date: October 12, 2022

Client Sample ID: TF081
Sample ID: 594760001
Matrix: Drinking Water (Potable)
Collect Date: 27-SEP-22
Receive Date: 28-SEP-22
Collector: Client

Project: EPAJ00122
Client ID: EPAJ001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
<i>GFPC Gross Alpha, Liquid "As Received"</i>														
Alpha	U	-0.145	+/-1.00	2.65	+/-1.00	5.00	pCi/L			KP1	10/04/22	1333	2323085	1
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	0.839	+/-1.10	1.88	+/-1.12	3.00	pCi/L			JE1	10/10/22	0921	2323087	2
Rad Radium-226														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.427	+/-0.314	0.429	+/-0.326	1.00	pCi/L			LXP1	10/10/22	1101	2323088	3

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310
2	EPA 904.0/SW846 9320 Modified
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2323087	73.9	(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

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Certificate of Analysis

Company : Laboratory for EPA
Address : 100 OB Curtis Drive

Ridgeland, Mississippi 39157

Report Date: October 12, 2022

Contact: Chris Decker

Project: Jackson Emergency Response

Client Sample ID: TF082
Sample ID: 594760002
Matrix: Drinking Water (Potable)
Collect Date: 27-SEP-22
Receive Date: 28-SEP-22
Collector: Client

Project: EPAJ00122
Client ID: EPAJ001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
<i>GFPC Gross Alpha, Liquid "As Received"</i>														
Alpha	U	1.07	+/-1.37	2.31	+/-1.38	5.00	pCi/L			KP1	10/04/22	1333	2323085	1
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	1.22	+/-1.01	1.62	+/-1.05	3.00	pCi/L			JE1	10/10/22	0921	2323087	2
Rad Radium-226														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.140	+/-0.303	0.574	+/-0.304	1.00	pCi/L			LXP1	10/10/22	1132	2323088	3

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310
2	EPA 904.0/SW846 9320 Modified
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2323087	90.7	(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

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Certificate of Analysis

Company : Laboratory for EPA
Address : 100 OB Curtis Drive

Ridgeland, Mississippi 39157

Report Date: October 12, 2022

Contact: Chris Decker

Project: Jackson Emergency Response

Client Sample ID: TF083
Sample ID: 594760003
Matrix: Drinking Water (Potable)
Collect Date: 27-SEP-22
Receive Date: 28-SEP-22
Collector: Client

Project: EPAJ00122
Client ID: EPAJ001

Parameter	Qualifier	Result	Uncertainty	MDC	TPU	RL	Units	PF	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gas Flow Proportional Counting														
<i>GFPC Gross Alpha, Liquid "As Received"</i>														
Alpha	U	-0.335	+/-0.760	2.17	+/-0.761	5.00	pCi/L			KP1	10/04/22	1333	2323085	1
<i>GFPC Ra228, Liquid "As Received"</i>														
Radium-228	U	1.17	+/-1.42	2.40	+/-1.45	3.00	pCi/L			JE1	10/10/22	0921	2323087	2
Rad Radium-226														
<i>Lucas Cell, Ra226, Liquid "As Received"</i>														
Radium-226	U	0.0780	+/-0.306	0.597	+/-0.306	1.00	pCi/L			LXP1	10/10/22	1132	2323088	3

The following Analytical Methods were performed

Method	Description
1	EPA 900.0/SW846 9310
2	EPA 904.0/SW846 9320 Modified
3	EPA 903.1 Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Barium-133 Tracer	GFPC Ra228, Liquid "As Received"	2323087	82.6	(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

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QC Summary

Report Date: October 12, 2022

Page 1 of 3

Client : Laboratory for EPA
100 OB Curtis Drive

Ridgeland, Mississippi

Contact: Chris Decker

Workorder: 594760

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gas Flow											
Batch	2323085										
QC1205204334	594760001	DUP									
Alpha	U	-0.145	U	0.435	pCi/L	0		N/A	KP1	10/04/22	13:28
	Uncert:	+/-1.00		+/-1.34							
	TPU:	+/-1.00		+/-1.34							
QC1205204336	LCS										
Alpha	114			115	pCi/L		101	(75%-125%)	KP1	10/04/22	13:28
	Uncert:			+/-12.3							
	TPU:			+/-22.7							
QC1205204333	MB										
Alpha			U	-0.300	pCi/L				KP1	10/04/22	13:28
	Uncert:			+/-0.962							
	TPU:			+/-0.962							
QC1205204335	594760001	MS									
Alpha	115	U	-0.145	97.7	pCi/L		84.7	(75%-125%)	KP1	10/04/22	13:28
	Uncert:		+/-1.00	+/-11.4							
	TPU:		+/-1.00	+/-19.7							
Batch	2323087										
QC1205204342	594760001	DUP									
Radium-228	U	0.839	U	1.25	pCi/L	0		N/A	JE1	10/10/22	09:20
	Uncert:	+/-1.10		+/-1.03							
	TPU:	+/-1.12		+/-1.07							
QC1205204343	LCS										
Radium-228	44.2			41.9	pCi/L		94.7	(75%-125%)	JE1	10/10/22	09:21
	Uncert:			+/-3.54							
	TPU:			+/-11.1							
QC1205204341	MB										
Radium-228			U	-0.354	pCi/L				JE1	10/10/22	09:20
	Uncert:			+/-0.789							
	TPU:			+/-0.789							
Rad Ra-226											
Batch	2323088										
QC1205204345	594760001	DUP									
Radium-226	U	0.427	U	0.347	pCi/L	0		N/A	LXP1	10/10/22	11:32
	Uncert:	+/-0.314		+/-0.312							
	TPU:	+/-0.326		+/-0.319							
QC1205204347	LCS										
Radium-226	26.7			23.2	pCi/L		86.8	(75%-125%)	LXP1	10/10/22	11:32
	Uncert:			+/-1.96							
	TPU:			+/-4.71							
QC1205204344	MB										
Radium-226			U	0.102	pCi/L				LXP1	10/10/22	11:32

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QC Summary

Workorder: 594760

Page 2 of 3

Parmname	NOM	Sample Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Ra-226										
Batch	2323088									
			Uncert:							
			TPU:							
QC1205204346	594760001 MS									
Radium-226	133 U	0.427		110	pCi/L	82.8	(75%-125%)	LXP1	10/10/22	11:32
			Uncert:							
			TPU:							

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.
- 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

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QC Summary

Workorder: 594760

Page 3 of 3

<u>Parmname</u>	<u>NOM</u>	<u>Sample Qual</u>	<u>QC</u>	<u>Units</u>	<u>RPD%</u>	<u>REC%</u>	<u>Range</u>	<u>Anlst</u>	<u>Date</u>	<u>Time</u>
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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.

894760 894761

Chain of Custody and Analytical Request

GEL Work Order Number: GEL Project Manager: Jake Crook

Client Name: Chris Decker / USEPA
 Project Name: 2022 Central Mississippi Floods
 Address: 100 OB Curtis Drive, Ridgeland, MS 39157

Phone #: (706) 338-3124
 Fax #

Sample ID

*For composites - indicate start and stop date/time

Sample ID

Collection Date (mm-dd-yy)

*Time Collected (Military (hhmm))

QC Code (a)

Field Filtered (b)

Sample Matrix (c)

Radioactive (If yes, please supply isotope info.)

(7) Known or possible Hazards

Total number of containers

Gross A, Ra226, Ni

2,3,7,8-TCDD (sub ic

<-- Preservative Type (6)

Comments

Note: extra sample is required for sample specific QC

TAT Requested: Normal: ____ Rush: ____ Specify: ____ (Subject to Surcharge)

Fax Results: [] Yes [] No

Select Deliverable: [] C of A [] QC Summary [] Level 1 [] Level 2 [] Level 3 [] Level 4

Additional Remarks:

For Lab Receiving Use Only: Custody Seal Intact? [] Yes [] No Cooler Temp: ____ °C

Sample Collection Time Zone: [] Eastern [] Pacific [] Central [] Mountain [] Other:

Chain of Custody Signatures

Relinquished By (Signed) Date Time Received by (Signed) Date Time

1 16:30 9/27/22 16:30

2

3

For sample shipping and delivery details, see Sample Receipt & Review form (SRR.)

Chain of Custody Number - Client Determined

QC Codes: N = Normal Sample, TB = Trip Blank, FD = Field Duplicate, EB = Equipment Blank, MS = Matrix Spike Sample, MSD = Matrix Spike Duplicate Sample, G = Grab, C = Composite

Field Filtered: For liquid matrices, indicate with a -Y- for yes the sample was field filtered or -N- for sample was not field filtered.

Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, ML = Misc Liquid, SO = Soil, SD = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = Nasal

Sample Analysis Requested: Analytical method requested (i.e. 8260B, 6010B/7470A) and number of containers provided for each (i.e. X260B - 3, 6010B/7470A - 1).

Preservative Type: HA = Hydrochloric Acid, NI = Nitric Acid, SH = Sodium Hydroxide, SA = Sulfuric Acid, AA = Ascorbic Acid, HX = Hexane, ST = Sodium Thiosulfate. If no preservative is added = leave field blank

KNOWN OR POSSIBLE HAZARDS

Characteristic Hazards

FL = Flammable/Ignitable
 CO = Corrosive
 RE = Reactive

TSCA Regulated
 PCB = Polychlorinated biphenyls

RCRA Metals
 As = Arsenic Hg = Mercury
 Ba = Barium Se = Selenium
 Cd = Cadmium Ag = Silver
 Cr = Chromium MR = Misc. RCRA metals
 Pb = Lead

Listed Waste
 LW = Listed Waste
 (F, K, P and U-listed wastes.)
 Waste code(s):

Other
 OT = Other / Unknown
 (i.e.: High/low pH, asbestos, beryllium, irritants, other misc. health hazards, etc.)
 Description:

Please provide any additional details below regarding handling and/or disposal concerns. (i.e.: Origin of sample(s), type of site collected from, odd matrices, etc.)

SAMPLE RECEIPT & REVIEW FORM

Client: <u>EDAJ</u>	SDG/AR/COC/Work Order: <u>594760, 594761</u>
Received By: <u>AJ</u>	Date Received: <u>9/28/22</u>
Carrier and Tracking Number	Circle Applicable: <input checked="" type="checkbox"/> FedEx Express <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other <u>2784 8487 2270</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?		<input checked="" type="checkbox"/>	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?		<input checked="" type="checkbox"/>	COC notation or radioactive stickers on containers equal client designation.
C) Did the RSO classify the samples as radioactive?		<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u> </u> CPM / mR/Hr Classified as: Rad 1 Rad 2 Rad 3
D) Did the client designate samples are hazardous?		<input checked="" type="checkbox"/>	COC notation or hazard labels on containers equal client designation.
E) Did the RSO identify possible hazards?		<input checked="" type="checkbox"/>	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?	<input checked="" type="checkbox"/>	<input 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 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 type="checkbox"/>	<input type="checkbox"/>	Preservation Method: <u>Wet Ice</u> Ice Packs Dry ice None Other: *all temperatures are recorded in Celsius TEMP: <u>3</u>
4	Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <u>123-22</u> Secondary Temperature Device Serial # (If Applicable): _____
5	Sample containers intact and sealed?	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input type="checkbox"/>	Sample ID's and Containers Affected: If Preservation added, Lot#: _____
7	Do any samples require Volatile Analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	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) <input checked="" type="checkbox"/> Are liquid VOA vials free of headspace? Yes ___ No ___ NA ___ Sample ID's and containers affected: _____
8	Samples received within holding time?	<input checked="" type="checkbox"/>	<input 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 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 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 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 type="checkbox"/>	<input type="checkbox"/>	
13	COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: Not relinquished Other (describe)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials AJ Date 9/29/22 Page ___ of ___

List of current GEL Certifications as of 12 October 2022

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	SC000122023-3
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	2022-137
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	T104704235-22-20
Utah NELAP	SC000122021-36
Vermont	VT87156
Virginia NELAP	460202
Washington	C780

**Radiochemistry
Technical Case Narrative
EPA
SDG #: 594760**

Product: GFPC Gross Alpha, Liquid

Analytical Method: EPA 900.0/SW846 9310

Analytical Procedure: GL-RAD-A-001 REV# 20

Analytical Batch: 2323085

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
594760001	TF081
594760002	TF082
594760003	TF083
1205204333	Method Blank (MB)
1205204334	594760001(TF081) Sample Duplicate (DUP)
1205204335	594760001(TF081) Matrix Spike (MS)
1205204336	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

Gross Alpha/Beta Preparation Information

High hygroscopic salt content in evaporated samples can cause the sample mass to fluctuate due to moisture absorption. To minimize this interference, the salts are converted to oxides by heating the sample under a flame until a dull red color is obtained. The conversion to oxides stabilizes the sample weight and ensures that proper alpha/beta efficiencies are assigned for each sample. Volatile radioisotopes of carbon, hydrogen, technetium, polonium and cesium may be lost during sample heating.

Product: GFPC Ra228, Liquid

Analytical Method: EPA 904.0/SW846 9320 Modified

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

Analytical Batch: 2323087

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
594760001	TF081
594760002	TF082
594760003	TF083

1205204341	Method Blank (MB)
1205204342	594760001(TF081) Sample Duplicate (DUP)
1205204343	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: Lucas Cell, Ra226, Liquid

Analytical Method: EPA 903.1 Modified

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

Analytical Batch: 2323088

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

<u>GEL Sample ID#</u>	<u>Client Sample Identification</u>
594760001	TF081
594760002	TF082
594760003	TF083
1205204344	Method Blank (MB)
1205204345	594760001(TF081) Sample Duplicate (DUP)
1205204346	594760001(TF081) Matrix Spike (MS)
1205204347	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.

Miscellaneous Information

Additional Comments

The matrix spike, 1205204346 (TF081MS), aliquot was reduced to conserve sample volume.

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.