



October 28, 2013

Mr. Jay Adler
TLG Services, Inc.
148 New Milford Rd. East
Bridgewater, Connecticut 06752

Re: Radiochemistry Analysis
Work Order: 334614

Dear Mr. Adler:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 03, 2013. 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. 4504.

Sincerely,

Erin Trent
Project Manager

Purchase Order: Signed Quote GELP13-1296
Enclosures

Certificate of Analysis

GEL LABORATORIES LLC

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

Certificate of Analysis Report for

TLGS001 TLG Services, Inc.

Client SDG: 334614 GEL Work Order: 334614

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, or LOD.
- UI Gamma Spectroscopy—Uncertain identification

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, Erin Trent.

Reviewed by



GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614001
 Client Sample ID: SU 1.6 #1
 Matrix: Soil
 Geometry Received:

Client: TLG Services, Inc.
 Collect Date: August 13, 2013
 Receive Date: October 03, 2013
 Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	1.62E-01	5.69E-01	1.04E+00		pCi/g
Na-22	10/15/13	U	3.43E-02	3.85E-02	7.93E-02		pCi/g
K-40	10/15/13	3	2.43E+01	1.50E+00	5.73E-01		pCi/g
Cr-51	10/15/13	U	9.19E-02	1.14E+00	2.10E+00		pCi/g
Mn-54	10/15/13	U	1.08E-02	4.16E-02	7.75E-02		pCi/g
Fe-59	10/15/13	U	-7.17E-02	1.73E-01	3.02E-01		pCi/g
Co-56	10/15/13	U	-4.36E-02	5.63E-02	9.72E-02		pCi/g
Co-57	10/15/13	UI	0.00E+00	5.42E-02	7.24E-02		pCi/g
Co-58	10/15/13	U	1.64E-02	5.57E-02	1.06E-01		pCi/g
Co-60	10/15/13	3	1.71E-01	7.30E-02	6.11E-02		pCi/g
Zn-65	10/15/13	U	-3.71E-03	1.81E-01	1.86E-01		pCi/g
Y-88	10/15/13	U	-2.50E-02	3.64E-02	6.24E-02		pCi/g
Zr-95	10/15/13	U	1.19E-01	1.97E-01	2.00E-01		pCi/g
Nb-94	10/15/13	U	8.56E-03	3.12E-02	5.88E-02		pCi/g
Nb-95	10/15/13	U	3.94E-02	7.30E-02	1.23E-01		pCi/g
Ru-106	10/15/13	U	2.05E-01	3.11E-01	5.82E-01		pCi/g
Ag-110m	10/15/13	U	2.25E-02	5.52E-02	1.04E-01		pCi/g
Sn-113	10/15/13	U	2.08E-03	5.77E-02	1.05E-01		pCi/g
Sb-124	10/15/13	U	1.05E-02	8.41E-02	1.77E-01		pCi/g
Sb-125	10/15/13	U	-4.06E-03	8.66E-02	1.56E-01		pCi/g
Cs-134	10/15/13	UI	0.00E+00	6.41E-02	9.50E-02		pCi/g
Cs-136	10/15/13	U	1.13E+00	1.27E+00	2.47E+00		pCi/g
Cs-137	10/15/13	U	9.56E-03	3.35E-02	6.36E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	2.15E-02	4.13E-02	6.91E-02		pCi/g
Ba-140	10/15/13	U	1.14E+00	3.33E+00	6.11E+00		pCi/g
Ce-139	10/15/13	U	-1.05E-02	3.72E-02	6.42E-02		pCi/g
Ce-141	10/15/13	U	6.51E-02	1.81E-01	3.23E-01		pCi/g
Ce-144	10/15/13	U	-2.31E-03	2.62E-01	4.12E-01		pCi/g
Nd-147	10/15/13	3,U	1.12E+01	1.11E+01	2.11E+01		pCi/g
Pm-144	10/15/13	U	4.34E-03	3.36E-02	6.30E-02		pCi/g
Pm-146	10/15/13	U	3.74E-03	4.02E-02	7.28E-02		pCi/g
Eu-152	10/15/13	3	5.53E-01	1.53E-01	1.75E-01		pCi/g
Eu-154	10/15/13	U	9.50E-02	1.06E-01	1.90E-01		pCi/g
Eu-155	10/15/13	U	3.99E-02	1.17E-01	2.12E-01		pCi/g
Ir-192	10/15/13	U	-3.10E-02	5.07E-02	8.99E-02		pCi/g
Hg-203	10/15/13	U	1.68E-02	8.79E-02	1.43E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614001
Client Sample ID: SU 1.6 #1
Matrix: Soil
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 13, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	5.27E-01	7.87E-02	6.26E-02		pCi/g
Pb-210	10/15/13	U	3.60E-01	7.92E+00	1.46E+01		pCi/g
Pb-212	10/15/13	3	1.82E+00	1.25E-01	1.00E-01		pCi/g
Pb-214	10/15/13	3	1.73E+00	1.74E-01	1.24E-01		pCi/g
Bi-212	10/15/13	3	1.31E+00	7.58E-01	8.31E-01		pCi/g
Bi-214	10/15/13	3	1.27E+00	1.66E-01	1.17E-01		pCi/g
Ra-228	10/15/13	3	1.58E+00	2.98E-01	2.39E-01		pCi/g
Ac-228	10/15/13	3	1.58E+00	2.98E-01	2.39E-01		pCi/g
Th-234	10/15/13	3	3.27E+00	2.89E+00	3.20E+00		pCi/g
U-235	10/15/13	U	2.05E-01	2.12E-01	3.84E-01		pCi/g
U-238	10/15/13	3	3.27E+00	2.89E+00	3.20E+00		pCi/g
Np-239	10/15/13	U	3.56E-01	4.68E-01	7.72E-01		pCi/g
Am-241	10/15/13	U	1.49E-01	2.48E-01	4.22E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

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UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614001

Client: TLG Services, Inc.

Client Sample ID: SU 1.6 #1

Collect Date: August 13, 2013

Matrix: Soil

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	1.58E+00	pCi/g	003.816
Bi-212	1.31E+00	pCi/g	003.165
Bi-214	1.27E+00	pCi/g	003.073
Co-60	1.71E-01	pCi/g	000.415
Eu-152	5.53E-01	pCi/g	001.339
Pb-212	1.82E+00	pCi/g	004.401
Pb-214	1.73E+00	pCi/g	004.183
K-40	2.43E+01	pCi/g	058.699
Ra-228	1.58E+00	pCi/g	003.816
Tl-208	5.27E-01	pCi/g	001.276
Th-234	3.27E+00	pCi/g	007.910
U-238	3.27E+00	pCi/g	007.910
Total Activity:	4.13E+01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614002
Client Sample ID: SU 1.6 #2
Matrix: Soil
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 13, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-1.32E-01	4.60E-01	8.30E-01		pCi/g
Na-22	10/15/13	U	-8.15E-04	3.38E-02	6.12E-02		pCi/g
K-40	10/15/13	3	1.93E+01	1.32E+00	5.14E-01		pCi/g
Cr-51	10/15/13	U	1.52E-01	1.03E+00	1.74E+00		pCi/g
Mn-54	10/15/13	U	2.34E-02	3.54E-02	6.85E-02		pCi/g
Fe-59	10/15/13	U	3.51E-02	1.84E-01	2.96E-01		pCi/g
Co-56	10/15/13	U	-1.71E-02	4.82E-02	8.72E-02		pCi/g
Co-57	10/15/13	UI	0.00E+00	3.95E-02	6.80E-02		pCi/g
Co-58	10/15/13	U	-3.10E-02	5.05E-02	8.96E-02		pCi/g
Co-60	10/15/13	3	1.07E-01	4.89E-02	5.39E-02		pCi/g
Zn-65	10/15/13	U	6.06E-02	1.42E-01	1.63E-01		pCi/g
Y-88	10/15/13	U	1.23E-03	2.88E-02	5.87E-02		pCi/g
Zr-95	10/15/13	U	5.96E-02	1.02E-01	1.97E-01		pCi/g
Nb-94	10/15/13	U	1.28E-02	2.65E-02	5.15E-02		pCi/g
Nb-95	10/15/13	U	-2.71E-02	7.24E-02	1.14E-01		pCi/g
Ru-106	10/15/13	U	4.04E-01	5.40E-01	5.04E-01		pCi/g
Ag-110m	10/15/13	U	-4.59E-02	4.22E-02	7.07E-02		pCi/g
Sn-113	10/15/13	U	-1.13E-02	4.87E-02	8.92E-02		pCi/g
Sb-124	10/15/13	U	9.16E-02	1.04E-01	2.30E-01		pCi/g
Sb-125	10/15/13	U	7.28E-02	7.51E-02	1.47E-01		pCi/g
Cs-134	10/15/13	UI	0.00E+00	7.55E-02	7.67E-02		pCi/g
Cs-136	10/15/13	U	-3.18E-01	9.68E-01	1.73E+00		pCi/g
Cs-137	10/15/13	U	-5.67E-03	2.83E-02	5.00E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	-1.27E-02	3.77E-02	6.04E-02		pCi/g
Ba-140	10/15/13	U	2.93E+00	3.02E+00	5.86E+00		pCi/g
Ce-139	10/15/13	U	-1.55E-02	3.01E-02	5.38E-02		pCi/g
Ce-141	10/15/13	U	5.25E-02	1.57E-01	2.63E-01		pCi/g
Ce-144	10/15/13	U	6.33E-02	1.83E-01	3.30E-01		pCi/g
Nd-147	10/15/13	U	-2.34E+00	8.44E+00	1.51E+01		pCi/g
Pm-144	10/15/13	U	6.58E-03	2.84E-02	5.45E-02		pCi/g
Pm-146	10/15/13	U	2.42E-02	3.16E-02	6.16E-02		pCi/g
Eu-152	10/15/13	3	6.15E-01	1.23E-01	1.47E-01		pCi/g
Eu-154	10/15/13	U	-2.25E-03	9.35E-02	1.69E-01		pCi/g
Eu-155	10/15/13	U	2.82E-02	8.83E-02	1.68E-01		pCi/g
Ir-192	10/15/13	U	-2.15E-02	4.14E-02	7.60E-02		pCi/g
Hg-203	10/15/13	3,U	7.52E-02	6.79E-02	1.22E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614002
Client Sample ID: SU 1.6 #2
Matrix: Soil
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 13, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	3.80E-01	7.91E-02	4.87E-02		pCi/g
Pb-210	10/15/13	U	9.24E-01	4.21E+00	8.44E+00		pCi/g
Pb-212	10/15/13	3	1.44E+00	1.04E-01	8.78E-02		pCi/g
Pb-214	10/15/13	3	1.53E+00	1.69E-01	2.67E-01		pCi/g
Bi-212	10/15/13	3	1.15E+00	7.44E-01	7.21E-01		pCi/g
Bi-214	10/15/13	3	1.11E+00	1.40E-01	1.04E-01		pCi/g
Ra-228	10/15/13	3	1.47E+00	2.17E-01	1.94E-01		pCi/g
Ac-228	10/15/13	3	1.47E+00	2.17E-01	1.94E-01		pCi/g
Th-234	10/15/13	3	3.86E+00	2.39E+00	2.30E+00		pCi/g
U-235	10/15/13	U	2.05E-01	2.35E-01	2.83E-01		pCi/g
U-238	10/15/13	3	3.86E+00	2.39E+00	2.30E+00		pCi/g
Np-239	10/15/13	U	-3.01E-01	3.84E-01	6.13E-01		pCi/g
Am-241	10/15/13	U	6.77E-02	1.61E-01	2.90E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

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UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614002

Client: TLG Services, Inc.

Client Sample ID: SU 1.6 #2

Collect Date: August 13, 2013

Matrix: Soil

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	1.47E+00	pCi/g	004.036
Bi-212	1.15E+00	pCi/g	003.176
Bi-214	1.11E+00	pCi/g	003.055
Co-60	1.07E-01	pCi/g	000.294
Eu-152	6.15E-01	pCi/g	001.695
Pb-212	1.44E+00	pCi/g	003.964
Pb-214	1.53E+00	pCi/g	004.201
K-40	1.93E+01	pCi/g	053.251
Ra-228	1.47E+00	pCi/g	004.036
Tl-208	3.80E-01	pCi/g	001.046
Th-234	3.86E+00	pCi/g	010.623
U-238	3.86E+00	pCi/g	010.623
Total Activity:	3.63E+01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614003
Client Sample ID: SU 1.6 #3
Matrix: Soil
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 13, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	4.44E-01	6.79E-01	1.30E+00		pCi/g
Na-22	10/15/13	U	1.85E-02	4.93E-02	9.21E-02		pCi/g
K-40	10/15/13	3	2.17E+01	1.58E+00	6.63E-01		pCi/g
Cr-51	10/15/13	U	-4.53E-01	1.74E+00	2.63E+00		pCi/g
Mn-54	10/15/13	3,U	7.01E-02	6.56E-02	8.99E-02		pCi/g
Fe-59	10/15/13	U	-3.85E-02	2.48E-01	3.78E-01		pCi/g
Co-56	10/15/13	U	5.23E-02	7.56E-02	1.46E-01		pCi/g
Co-57	10/15/13	U	4.44E-03	9.30E-02	6.13E-02		pCi/g
Co-58	10/15/13	3,U	8.58E-02	7.42E-02	1.48E-01		pCi/g
Co-60	10/15/13	UI	0.00E+00	6.20E-02	1.30E-01		pCi/g
Zn-65	10/15/13	U	1.25E-01	2.27E-01	2.46E-01		pCi/g
Y-88	10/15/13	U	2.87E-04	4.98E-02	9.66E-02		pCi/g
Zr-95	10/15/13	U	2.24E-02	1.45E-01	2.61E-01		pCi/g
Nb-94	10/15/13	U	1.07E-02	4.82E-02	7.56E-02		pCi/g
Nb-95	10/15/13	U	5.80E-02	9.29E-02	1.70E-01		pCi/g
Ru-106	10/15/13	U	3.77E-01	4.30E-01	7.36E-01		pCi/g
Ag-110m	10/15/13	U	1.93E-02	6.85E-02	1.29E-01		pCi/g
Sn-113	10/15/13	U	-5.69E-02	6.72E-02	1.19E-01		pCi/g
Sb-124	10/15/13	U	-5.44E-02	1.25E-01	2.27E-01		pCi/g
Sb-125	10/15/13	U	-1.15E-02	1.06E-01	1.95E-01		pCi/g
Cs-134	10/15/13	UI	0.00E+00	8.16E-02	7.70E-02		pCi/g
Cs-136	10/15/13	U	1.19E+00	1.33E+00	2.65E+00		pCi/g
Cs-137	10/15/13	U	-4.10E-02	4.56E-02	7.64E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	4.08E-02	6.40E-02	8.89E-02		pCi/g
Ba-140	10/15/13	U	-3.57E+00	4.24E+00	7.28E+00		pCi/g
Ce-139	10/15/13	U	-5.20E-03	4.21E-02	7.72E-02		pCi/g
Ce-141	10/15/13	U	1.31E-01	2.14E-01	3.61E-01		pCi/g
Ce-144	10/15/13	U	-1.07E-01	2.51E-01	4.61E-01		pCi/g
Nd-147	10/15/13	U	1.11E+00	1.52E+01	2.40E+01		pCi/g
Pm-144	10/15/13	U	-7.13E-03	7.56E-02	7.57E-02		pCi/g
Pm-146	10/15/13	U	3.47E-02	4.62E-02	8.92E-02		pCi/g
Eu-152	10/15/13	3	9.11E-01	1.99E-01	2.19E-01		pCi/g
Eu-154	10/15/13	U	4.68E-02	1.36E-01	2.53E-01		pCi/g
Eu-155	10/15/13	3,U	2.10E-01	1.35E-01	2.51E-01		pCi/g
Ir-192	10/15/13	U	2.31E-02	6.48E-02	1.17E-01		pCi/g
Hg-203	10/15/13	U	3.39E-02	9.29E-02	1.69E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

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UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614003
Client Sample ID: SU 1.6 #3
Matrix: Soil
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 13, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	5.17E-01	9.97E-02	7.33E-02		pCi/g
Pb-210	10/15/13	U	3.02E+00	8.24E+00	1.53E+01		pCi/g
Pb-212	10/15/13	3	1.85E+00	1.39E-01	1.16E-01		pCi/g
Pb-214	10/15/13	3	1.75E+00	2.05E-01	1.60E-01		pCi/g
Bi-212	10/15/13	3	2.59E+00	9.23E-01	9.89E-01		pCi/g
Bi-214	10/15/13	3	1.53E+00	1.61E-01	1.43E-01		pCi/g
Ra-228	10/15/13	3	1.48E+00	3.20E-01	2.98E-01		pCi/g
Ac-228	10/15/13	3	1.48E+00	3.20E-01	2.98E-01		pCi/g
Th-234	10/15/13	U	2.24E+00	3.45E+00	3.48E+00		pCi/g
U-235	10/15/13	U	2.74E-02	3.04E-01	4.05E-01		pCi/g
U-238	10/15/13	U	2.24E+00	3.45E+00	3.48E+00		pCi/g
Np-239	10/15/13	U	-2.08E-01	5.19E-01	8.45E-01		pCi/g
Am-241	10/15/13	3,U	4.62E-01	2.61E-01	4.62E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614003

Client: TLG Services, Inc.

Client Sample ID: SU 1.6 #3

Collect Date: August 13, 2013

Matrix: Soil

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	1.48E+00	pCi/g	004.366
Bi-212	2.59E+00	pCi/g	007.679
Bi-214	1.53E+00	pCi/g	004.526
Eu-152	9.11E-01	pCi/g	002.696
Pb-212	1.85E+00	pCi/g	005.474
Pb-214	1.75E+00	pCi/g	005.183
K-40	2.17E+01	pCi/g	064.179
Ra-228	1.48E+00	pCi/g	004.366
Tl-208	5.17E-01	pCi/g	001.529
Total Activity:	3.38E+01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614004
 Client Sample ID: SU 1.6 #4
 Matrix: Soil
 Geometry Received:

Client: TLG Services, Inc.
 Collect Date: August 13, 2013
 Receive Date: October 03, 2013
 Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-2.94E-01	6.34E-01	1.09E+00		pCi/g
Na-22	10/15/13	U	5.99E-03	5.24E-02	8.50E-02		pCi/g
K-40	10/15/13	3	2.36E+01	1.57E+00	5.31E-01		pCi/g
Cr-51	10/15/13	U	-8.53E-02	1.21E+00	2.19E+00		pCi/g
Mn-54	10/15/13	U	1.84E-02	4.52E-02	8.41E-02		pCi/g
Fe-59	10/15/13	U	-2.37E-01	2.03E-01	3.23E-01		pCi/g
Co-56	10/15/13	U	9.52E-03	6.07E-02	1.12E-01		pCi/g
Co-57	10/15/13	UI	0.00E+00	6.38E-02	8.73E-02		pCi/g
Co-58	10/15/13	U	4.52E-02	6.10E-02	1.18E-01		pCi/g
Co-60	10/15/13	3	1.43E-01	5.44E-02	7.97E-02		pCi/g
Zn-65	10/15/13	U	1.09E-01	1.78E-01	2.07E-01		pCi/g
Y-88	10/15/13	U	-5.43E-03	4.07E-02	7.76E-02		pCi/g
Zr-95	10/15/13	U	5.68E-03	1.25E-01	2.30E-01		pCi/g
Nb-94	10/15/13	U	-5.00E-03	4.13E-02	6.13E-02		pCi/g
Nb-95	10/15/13	U	8.54E-03	8.69E-02	1.38E-01		pCi/g
Ru-106	10/15/13	U	-4.15E-02	3.42E-01	6.29E-01		pCi/g
Ag-110m	10/15/13	U	-3.18E-02	6.08E-02	1.06E-01		pCi/g
Sn-113	10/15/13	U	-4.02E-03	6.33E-02	1.13E-01		pCi/g
Sb-124	10/15/13	U	5.99E-02	1.28E-01	2.65E-01		pCi/g
Sb-125	10/15/13	U	1.75E-02	1.01E-01	1.82E-01		pCi/g
Cs-134	10/15/13	UI	0.00E+00	5.65E-02	9.43E-02		pCi/g
Cs-136	10/15/13	U	-1.03E+00	1.32E+00	2.19E+00		pCi/g
Cs-137	10/15/13	U	-2.62E-03	4.40E-02	7.13E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	-5.05E-04	4.68E-02	7.43E-02		pCi/g
Ba-140	10/15/13	U	-1.20E+00	3.47E+00	6.00E+00		pCi/g
Ce-139	10/15/13	U	6.10E-03	3.94E-02	6.94E-02		pCi/g
Ce-141	10/15/13	3,U	2.14E-01	1.80E-01	3.31E-01		pCi/g
Ce-144	10/15/13	U	6.86E-03	2.58E-01	4.07E-01		pCi/g
Nd-147	10/15/13	U	-4.22E+00	1.19E+01	2.05E+01		pCi/g
Pm-144	10/15/13	U	3.70E-02	4.37E-02	7.56E-02		pCi/g
Pm-146	10/15/13	U	6.30E-04	4.35E-02	7.79E-02		pCi/g
Eu-152	10/15/13	3	9.51E-01	1.71E-01	1.98E-01		pCi/g
Eu-154	10/15/13	U	7.61E-03	1.44E-01	2.32E-01		pCi/g
Eu-155	10/15/13	3,U	2.08E-01	1.80E-01	2.11E-01		pCi/g
Ir-192	10/15/13	U	2.62E-02	5.85E-02	9.71E-02		pCi/g
Hg-203	10/15/13	3,U	1.05E-01	9.09E-02	1.56E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614004
Client Sample ID: SU 1.6 #4
Matrix: Soil
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 13, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	5.44E-01	8.14E-02	6.54E-02		pCi/g
Pb-210	10/15/13	U	1.03E+01	1.59E+01	1.45E+01		pCi/g
Pb-212	10/15/13	3	1.77E+00	1.29E-01	1.12E-01		pCi/g
Pb-214	10/15/13	3	1.84E+00	1.75E-01	3.26E-01		pCi/g
Bi-212	10/15/13	3	1.92E+00	1.05E+00	9.21E-01		pCi/g
Bi-214	10/15/13	3	1.41E+00	1.84E-01	1.37E-01		pCi/g
Ra-228	10/15/13	3	1.94E+00	3.12E-01	2.55E-01		pCi/g
Ac-228	10/15/13	3	1.94E+00	3.12E-01	2.55E-01		pCi/g
Th-234	10/15/13	U	1.64E+00	3.24E+00	3.47E+00		pCi/g
U-235	10/15/13	U	-1.05E-01	2.18E-01	3.76E-01		pCi/g
U-238	10/15/13	U	1.64E+00	3.24E+00	3.47E+00		pCi/g
Np-239	10/15/13	U	-9.05E-02	5.02E-01	7.89E-01		pCi/g
Am-241	10/15/13	U	4.45E-02	3.25E-01	4.30E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614004

Client: TLG Services, Inc.

Client Sample ID: SU 1.6 #4

Collect Date: August 13, 2013

Matrix: Soil

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	1.94E+00	pCi/g	005.372
Bi-212	1.92E+00	pCi/g	005.322
Bi-214	1.41E+00	pCi/g	003.897
Co-60	1.43E-01	pCi/g	000.397
Eu-152	9.51E-01	pCi/g	002.635
Pb-212	1.77E+00	pCi/g	004.915
Pb-214	1.84E+00	pCi/g	005.106
K-40	2.36E+01	pCi/g	065.475
Ra-228	1.94E+00	pCi/g	005.372
Tl-208	5.44E-01	pCi/g	001.509
Total Activity:	3.61E+01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	334614005	Client: TLG Services, Inc.
Client Sample ID:	SU 1.3 #1 0-15cm	Collect Date: August 22, 2013
Matrix:	Misc Solid	Receive Date: October 03, 2013
Geometry Received:		Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	3.46E-01	4.87E-01	9.55E-01		pCi/g
Na-22	10/15/13	U	1.56E-02	5.12E-02	8.42E-02		pCi/g
K-40	10/15/13	3	1.61E+01	1.32E+00	4.91E-01		pCi/g
Cr-51	10/15/13	U	-4.05E-01	8.44E-01	1.49E+00		pCi/g
Mn-54	10/15/13	U	2.13E-02	3.54E-02	6.15E-02		pCi/g
Fe-59	10/15/13	U	-7.76E-02	1.59E-01	2.80E-01		pCi/g
Co-56	10/15/13	U	-5.33E-04	6.42E-02	9.97E-02		pCi/g
Co-57	10/15/13	UI	0.00E+00	4.14E-02	7.71E-02		pCi/g
Co-58	10/15/13	U	-1.04E-02	4.74E-02	8.49E-02		pCi/g
Co-60	10/15/13	3	1.21E-01	5.22E-02	5.89E-02		pCi/g
Zn-65	10/15/13	U	1.33E-01	1.62E-01	1.99E-01		pCi/g
Y-88	10/15/13	U	2.39E-02	4.06E-02	8.94E-02		pCi/g
Zr-95	10/15/13	U	-7.28E-03	1.08E-01	1.95E-01		pCi/g
Nb-94	10/15/13	U	6.31E-03	3.21E-02	5.93E-02		pCi/g
Nb-95	10/15/13	U	-2.34E-02	7.11E-02	1.07E-01		pCi/g
Ru-106	10/15/13	U	2.63E-01	3.11E-01	6.13E-01		pCi/g
Ag-110m	10/15/13	U	-3.91E-02	5.49E-02	9.15E-02		pCi/g
Sn-113	10/15/13	U	8.30E-03	4.91E-02	8.95E-02		pCi/g
Sb-124	10/15/13	U	-9.34E-02	9.99E-02	1.61E-01		pCi/g
Sb-125	10/15/13	U	5.48E-02	8.39E-02	1.58E-01		pCi/g
Cs-134	10/15/13	3,U	6.27E-02	4.19E-02	8.51E-02		pCi/g
Cs-136	10/15/13	U	1.83E-01	7.47E-01	1.43E+00		pCi/g
Cs-137	10/15/13	U	-2.93E-02	3.53E-02	6.02E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	5.23E-02	6.42E-02	7.07E-02		pCi/g
Ba-140	10/15/13	U	-1.93E+00	1.96E+00	3.36E+00		pCi/g
Ce-139	10/15/13	U	-1.60E-02	3.05E-02	5.60E-02		pCi/g
Ce-141	10/15/13	U	5.80E-02	1.28E-01	2.30E-01		pCi/g
Ce-144	10/15/13	U	-1.19E-02	2.10E-01	3.31E-01		pCi/g
Nd-147	10/15/13	U	-1.91E+00	5.78E+00	1.05E+01		pCi/g
Pm-144	10/15/13	U	9.90E-03	3.93E-02	7.25E-02		pCi/g
Pm-146	10/15/13	U	-2.86E-03	4.13E-02	7.25E-02		pCi/g
Eu-152	10/15/13	3	9.14E-01	1.76E-01	1.65E-01		pCi/g
Eu-154	10/15/13	U	4.34E-02	1.42E-01	2.34E-01		pCi/g
Eu-155	10/15/13	U	5.21E-02	9.20E-02	1.70E-01		pCi/g
Ir-192	10/15/13	U	1.06E-02	4.53E-02	8.36E-02		pCi/g
Hg-203	10/15/13	U	5.61E-04	6.34E-02	1.16E-01		pCi/g

- Note(s):** 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614005
Client Sample ID: SU 1.3 #1 0-15cm
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 22, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	2.68E-01	6.79E-02	5.61E-02		pCi/g
Pb-210	10/15/13	U	1.23E+00	7.64E+00	6.55E+00		pCi/g
Pb-212	10/15/13	3	9.24E-01	1.03E-01	9.86E-02		pCi/g
Pb-214	10/15/13	3	8.45E-01	1.18E-01	1.07E-01		pCi/g
Bi-212	10/15/13	3	1.52E+00	9.54E-01	8.54E-01		pCi/g
Bi-214	10/15/13	3	5.27E-01	1.21E-01	1.09E-01		pCi/g
Ra-228	10/15/13	3	8.00E-01	2.42E-01	2.20E-01		pCi/g
Ac-228	10/15/13	3	8.00E-01	2.42E-01	2.20E-01		pCi/g
Th-234	10/15/13	U	9.77E-01	1.89E+00	2.07E+00		pCi/g
U-235	10/15/13	U	6.62E-02	1.86E-01	3.26E-01		pCi/g
U-238	10/15/13	U	9.77E-01	1.89E+00	2.07E+00		pCi/g
Np-239	10/15/13	U	-2.28E-01	4.18E-01	6.43E-01		pCi/g
Am-241	10/15/13	U	6.19E-02	1.46E-01	2.51E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614005

Client: TLG Services, Inc.

Client Sample ID: SU 1.3 #1 0-15cm

Collect Date: August 22, 2013

Matrix: Misc Solid

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	8.00E-01	pCi/g	003.506
Bi-212	1.52E+00	pCi/g	006.665
Bi-214	5.27E-01	pCi/g	002.310
Co-60	1.21E-01	pCi/g	000.529
Eu-152	9.14E-01	pCi/g	004.007
Pb-212	9.24E-01	pCi/g	004.049
Pb-214	8.45E-01	pCi/g	003.704
K-40	1.61E+01	pCi/g	070.551
Ra-228	8.00E-01	pCi/g	003.506
Tl-208	2.68E-01	pCi/g	001.173
Total Activity:	2.28E+01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	334614006	Client: TLG Services, Inc.	
Client Sample ID:	SU 1.3 #3 0-15cm	Collect Date: August 22, 2013	
Matrix:	Misc Solid	Receive Date: October 03, 2013	
Geometry Received:		Report Date: October 28, 2013	

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-1.31E-01	4.00E-01	7.29E-01		pCi/g
Na-22	10/15/13	U	7.24E-03	3.58E-02	6.81E-02		pCi/g
K-40	10/15/13	3	1.37E+01	1.09E+00	4.48E-01		pCi/g
Cr-51	10/15/13	U	3.31E-01	7.29E-01	1.36E+00		pCi/g
Mn-54	10/15/13	U	-2.91E-02	3.65E-02	6.37E-02		pCi/g
Fe-59	10/15/13	U	-7.94E-02	1.52E-01	2.20E-01		pCi/g
Co-56	10/15/13	U	1.21E-02	4.27E-02	8.18E-02		pCi/g
Co-57	10/15/13	UI	0.00E+00	6.50E-02	3.91E-02		pCi/g
Co-58	10/15/13	U	6.72E-02	9.01E-02	8.04E-02		pCi/g
Co-60	10/15/13	3	1.69E-01	5.41E-02	5.97E-02		pCi/g
Zn-65	10/15/13	3,U	1.08E-01	8.33E-02	1.66E-01		pCi/g
Y-88	10/15/13	U	8.52E-04	3.07E-02	6.07E-02		pCi/g
Zr-95	10/15/13	U	5.17E-02	9.43E-02	1.76E-01		pCi/g
Nb-94	10/15/13	U	2.50E-02	2.97E-02	5.07E-02		pCi/g
Nb-95	10/15/13	U	3.07E-02	5.20E-02	1.01E-01		pCi/g
Ru-106	10/15/13	U	1.56E-01	2.68E-01	5.10E-01		pCi/g
Ag-110m	10/15/13	U	-2.30E-02	4.48E-02	7.98E-02		pCi/g
Sn-113	10/15/13	U	-1.76E-02	4.20E-02	7.73E-02		pCi/g
Sb-124	10/15/13	U	3.41E-02	7.99E-02	1.70E-01		pCi/g
Sb-125	10/15/13	U	-4.47E-02	6.90E-02	1.24E-01		pCi/g
Cs-134	10/15/13	UI	0.00E+00	5.45E-02	8.05E-02		pCi/g
Cs-136	10/15/13	U	2.08E-01	6.65E-01	1.25E+00		pCi/g
Cs-137	10/15/13	U	-1.97E-02	3.21E-02	5.42E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	-9.83E-03	3.69E-02	5.71E-02		pCi/g
Ba-140	10/15/13	U	-6.31E-01	1.82E+00	3.22E+00		pCi/g
Ce-139	10/15/13	U	4.82E-03	2.55E-02	4.86E-02		pCi/g
Ce-141	10/15/13	U	1.09E-02	1.03E-01	1.92E-01		pCi/g
Ce-144	10/15/13	U	-6.56E-02	1.81E-01	2.81E-01		pCi/g
Nd-147	10/15/13	U	-1.22E+00	5.20E+00	9.46E+00		pCi/g
Pm-144	10/15/13	U	7.24E-03	3.42E-02	5.45E-02		pCi/g
Pm-146	10/15/13	U	-1.05E-02	3.75E-02	5.93E-02		pCi/g
Eu-152	10/15/13	3	8.80E-01	1.53E-01	1.41E-01		pCi/g
Eu-154	10/15/13	U	1.91E-02	9.93E-02	1.89E-01		pCi/g
Eu-155	10/15/13	U	-2.52E-02	7.57E-02	1.36E-01		pCi/g
Ir-192	10/15/13	U	1.72E-02	3.67E-02	6.86E-02		pCi/g
Hg-203	10/15/13	U	1.09E-04	5.24E-02	9.57E-02		pCi/g

- Note(s):** 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
 2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
 3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614006
Client Sample ID: SU 1.3 #3 0-15cm
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 22, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	2.50E-01	6.01E-02	5.37E-02		pCi/g
Pb-210	10/15/13	3	2.75E+00	2.61E+00	2.21E+00		pCi/g
Pb-212	10/15/13	3	9.00E-01	1.05E-01	8.85E-02		pCi/g
Pb-214	10/15/13	3	7.12E-01	1.40E-01	1.02E-01		pCi/g
Bi-212	10/15/13	UI	0.00E+00	7.76E-01	9.75E-01		pCi/g
Bi-214	10/15/13	3	7.11E-01	1.08E-01	1.06E-01		pCi/g
Ra-228	10/15/13	3	6.79E-01	2.55E-01	2.11E-01		pCi/g
Ac-228	10/15/13	3	6.79E-01	2.55E-01	2.11E-01		pCi/g
Th-234	10/15/13	UI	0.00E+00	1.86E+00	1.20E+00		pCi/g
U-235	10/15/13	U	1.52E-02	1.42E-01	2.66E-01		pCi/g
U-238	10/15/13	UI	0.00E+00	1.86E+00	1.20E+00		pCi/g
Np-239	10/15/13	U	-2.22E-01	3.61E-01	5.56E-01		pCi/g
Am-241	10/15/13	U	2.35E-02	8.03E-02	1.38E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614006

Client: TLG Services, Inc.

Client Sample ID: SU 1.3 #3 0-15cm

Collect Date: August 22, 2013

Matrix: Misc Solid

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	6.79E-01	pCi/g	003.164
Bi-214	7.11E-01	pCi/g	003.312
Co-60	1.69E-01	pCi/g	000.787
Eu-152	8.80E-01	pCi/g	004.100
Pb-210	2.75E+00	pCi/g	012.792
Pb-212	9.00E-01	pCi/g	004.194
Pb-214	7.12E-01	pCi/g	003.315
K-40	1.37E+01	pCi/g	064.006
Ra-228	6.79E-01	pCi/g	003.164
Tl-208	2.50E-01	pCi/g	001.165
Total Activity:	2.15E+01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614007
Client Sample ID: SU 1.4 #1 0-15cm
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 13, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	3.61E-01	4.34E-01	8.36E-01		pCi/g
Na-22	10/15/13	U	-4.54E-03	3.31E-02	5.29E-02		pCi/g
K-40	10/15/13	3	1.46E+01	1.20E+00	4.59E-01		pCi/g
Cr-51	10/15/13	U	5.55E-01	8.95E-01	1.70E+00		pCi/g
Mn-54	10/15/13	U	5.68E-03	3.27E-02	6.07E-02		pCi/g
Fe-59	10/15/13	U	-1.11E-01	1.72E-01	2.37E-01		pCi/g
Co-56	10/15/13	U	1.25E-02	4.63E-02	8.73E-02		pCi/g
Co-57	10/15/13	U	6.43E-03	2.16E-02	3.90E-02		pCi/g
Co-58	10/15/13	U	-4.25E-02	5.31E-02	7.42E-02		pCi/g
Co-60	10/15/13	3,U	3.28E-02	3.01E-02	6.41E-02		pCi/g
Zn-65	10/15/13	U	-2.68E-02	8.47E-02	1.31E-01		pCi/g
Y-88	10/15/13	U	-2.05E-02	3.53E-02	6.01E-02		pCi/g
Zr-95	10/15/13	U	2.23E-02	9.00E-02	1.70E-01		pCi/g
Nb-94	10/15/13	U	4.53E-03	2.53E-02	4.74E-02		pCi/g
Nb-95	10/15/13	U	3.41E-02	6.01E-02	1.03E-01		pCi/g
Ru-106	10/15/13	U	-1.58E-01	2.46E-01	4.05E-01		pCi/g
Ag-110m	10/15/13	U	3.48E-03	4.30E-02	7.97E-02		pCi/g
Sn-113	10/15/13	U	-1.15E-02	4.67E-02	8.27E-02		pCi/g
Sb-124	10/15/13	U	-3.31E-02	6.35E-02	1.14E-01		pCi/g
Sb-125	10/15/13	U	-1.54E-03	7.40E-02	1.31E-01		pCi/g
Cs-134	10/15/13	3,U	3.89E-02	3.30E-02	6.69E-02		pCi/g
Cs-136	10/15/13	U	-2.55E-01	9.72E-01	1.72E+00		pCi/g
Cs-137	10/15/13	U	5.03E-03	3.02E-02	5.63E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	6.22E-03	3.38E-02	5.50E-02		pCi/g
Ba-140	10/15/13	U	-1.55E-01	2.49E+00	4.45E+00		pCi/g
Ce-139	10/15/13	U	-6.86E-03	2.92E-02	5.03E-02		pCi/g
Ce-141	10/15/13	U	5.95E-02	1.46E-01	2.34E-01		pCi/g
Ce-144	10/15/13	U	1.11E-01	1.65E-01	3.01E-01		pCi/g
Nd-147	10/15/13	U	2.73E+00	7.41E+00	1.39E+01		pCi/g
Pm-144	10/15/13	U	-3.95E-02	3.09E-02	5.07E-02		pCi/g
Pm-146	10/15/13	U	2.47E-05	3.28E-02	5.89E-02		pCi/g
Eu-152	10/15/13	U	6.88E-03	7.57E-02	1.23E-01		pCi/g
Eu-154	10/15/13	U	-1.31E-02	9.14E-02	1.46E-01		pCi/g
Eu-155	10/15/13	3,U	9.50E-02	7.67E-02	1.46E-01		pCi/g
Ir-192	10/15/13	U	8.99E-03	4.06E-02	7.50E-02		pCi/g
Hg-203	10/15/13	3,U	6.08E-02	5.90E-02	1.14E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614007 Client: TLG Services, Inc.
Client Sample ID: SU 1.4 #1 0-15cm Collect Date: August 13, 2013
Matrix: Misc Solid Receive Date: October 03, 2013
Geometry Received: Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	2.77E-01	5.96E-02	4.26E-02		pCi/g
Pb-210	10/15/13	U	8.62E-01	2.12E+00	4.00E+00		pCi/g
Pb-212	10/15/13	3	8.89E-01	8.31E-02	7.14E-02		pCi/g
Pb-214	10/15/13	3	7.55E-01	1.28E-01	9.03E-02		pCi/g
Bi-212	10/15/13	UI	0.00E+00	5.94E-01	9.82E-01		pCi/g
Bi-214	10/15/13	3	7.83E-01	1.02E-01	9.36E-02		pCi/g
Ra-228	10/15/13	3	9.01E-01	2.06E-01	2.09E-01		pCi/g
Ac-228	10/15/13	3	9.01E-01	2.06E-01	2.09E-01		pCi/g
Th-234	10/15/13	3	2.13E+00	1.98E+00	1.53E+00		pCi/g
U-235	10/15/13	U	5.27E-02	2.15E-01	2.54E-01		pCi/g
U-238	10/15/13	3	2.13E+00	1.98E+00	1.53E+00		pCi/g
Np-239	10/15/13	U	3.32E-03	2.94E-01	5.00E-01		pCi/g
Am-241	10/15/13	U	5.96E-02	1.04E-01	1.78E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614007

Client: TLG Services, Inc.

Client Sample ID: SU 1.4 #1 0-15cm

Collect Date: August 13, 2013

Matrix: Misc Solid

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	9.01E-01	pCi/g	003.860
Bi-214	7.83E-01	pCi/g	003.356
Pb-212	8.89E-01	pCi/g	003.810
Pb-214	7.55E-01	pCi/g	003.235
K-40	1.46E+01	pCi/g	062.451
Ra-228	9.01E-01	pCi/g	003.860
Tl-208	2.77E-01	pCi/g	001.186
Th-234	2.13E+00	pCi/g	009.121
U-238	2.13E+00	pCi/g	009.121
Total Activity:		2.33E+01	Total % Abundance: 100.00

GEL LABORATORIES LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	334614008	Client: TLG Services, Inc.	
Client Sample ID:	SU 1.4 #2 0-15cm	Collect Date: August 13, 2013	
Matrix:	Misc Solid	Receive Date: October 03, 2013	
Geometry Received:		Report Date: October 28, 2013	

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-4.52E-02	3.30E-01	5.93E-01		pCi/g
Na-22	10/15/13	U	1.60E-02	2.90E-02	4.95E-02		pCi/g
K-40	10/15/13	3	1.51E+01	8.55E-01	3.01E-01		pCi/g
Cr-51	10/15/13	U	-9.07E-02	8.03E-01	1.38E+00		pCi/g
Mn-54	10/15/13	3,U	3.11E-02	2.49E-02	4.84E-02		pCi/g
Fe-59	10/15/13	U	-4.41E-02	9.77E-02	1.73E-01		pCi/g
Co-56	10/15/13	U	-1.74E-02	3.55E-02	5.66E-02		pCi/g
Co-57	10/15/13	U	7.76E-03	1.81E-02	3.46E-02		pCi/g
Co-58	10/15/13	U	-3.09E-02	3.48E-02	5.88E-02		pCi/g
Co-60	10/15/13	U	6.78E-03	2.24E-02	4.19E-02		pCi/g
Zn-65	10/15/13	U	-1.14E-02	6.68E-02	1.02E-01		pCi/g
Y-88	10/15/13	U	-1.26E-02	2.53E-02	3.91E-02		pCi/g
Zr-95	10/15/13	U	-4.85E-02	6.92E-02	1.20E-01		pCi/g
Nb-94	10/15/13	U	2.56E-03	1.85E-02	3.41E-02		pCi/g
Nb-95	10/15/13	U	3.49E-02	4.67E-02	7.77E-02		pCi/g
Ru-106	10/15/13	U	1.02E-01	2.07E-01	3.94E-01		pCi/g
Ag-110m	10/15/13	U	2.67E-02	3.13E-02	6.02E-02		pCi/g
Sn-113	10/15/13	U	-1.57E-02	3.50E-02	6.26E-02		pCi/g
Sb-124	10/15/13	U	-1.18E-02	7.14E-02	1.33E-01		pCi/g
Sb-125	10/15/13	U	-4.99E-02	5.54E-02	9.54E-02		pCi/g
Cs-134	10/15/13	U	2.66E-02	3.26E-02	5.17E-02		pCi/g
Cs-136	10/15/13	U	-5.05E-01	7.03E-01	1.23E+00		pCi/g
Cs-137	10/15/13	U	1.96E-03	2.19E-02	4.05E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	1.72E-02	2.94E-02	4.89E-02		pCi/g
Ba-140	10/15/13	U	-1.30E-01	1.94E+00	3.63E+00		pCi/g
Ce-139	10/15/13	U	9.68E-03	2.48E-02	4.62E-02		pCi/g
Ce-141	10/15/13	3,U	1.30E-01	1.12E-01	2.17E-01		pCi/g
Ce-144	10/15/13	U	7.85E-02	1.64E-01	2.75E-01		pCi/g
Nd-147	10/15/13	U	-3.93E-01	6.53E+00	1.22E+01		pCi/g
Pm-144	10/15/13	U	-1.81E-02	2.11E-02	3.65E-02		pCi/g
Pm-146	10/15/13	U	-4.40E-03	2.43E-02	4.37E-02		pCi/g
Eu-152	10/15/13	U	2.19E-02	8.36E-02	1.09E-01		pCi/g
Eu-154	10/15/13	U	4.42E-02	8.03E-02	1.27E-01		pCi/g
Eu-155	10/15/13	U	-4.37E-02	7.07E-02	1.31E-01		pCi/g
Ir-192	10/15/13	U	2.08E-02	3.28E-02	6.28E-02		pCi/g
Hg-203	10/15/13	U	8.02E-02	9.82E-02	8.77E-02		pCi/g

- Note(s):** 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
 2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
 3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614008
Client Sample ID: SU 1.4 #2 0-15cm
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 13, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	3.08E-01	4.39E-02	3.62E-02		pCi/g
Pb-210	10/15/13	U	4.48E+00	5.37E+00	4.71E+00		pCi/g
Pb-212	10/15/13	3	1.07E+00	7.72E-02	6.33E-02		pCi/g
Pb-214	10/15/13	3	7.63E-01	1.06E-01	8.27E-02		pCi/g
Bi-212	10/15/13	UI	0.00E+00	4.68E-01	6.87E-01		pCi/g
Bi-214	10/15/13	3	6.32E-01	1.05E-01	7.23E-02		pCi/g
Ra-228	10/15/13	3	8.30E-01	1.87E-01	1.38E-01		pCi/g
Ac-228	10/15/13	3	8.30E-01	1.87E-01	1.38E-01		pCi/g
Th-234	10/15/13	U	1.35E+00	1.58E+00	1.66E+00		pCi/g
U-235	10/15/13	U	7.98E-02	1.31E-01	2.48E-01		pCi/g
U-238	10/15/13	U	1.35E+00	1.58E+00	1.66E+00		pCi/g
Np-239	10/15/13	U	-2.58E-01	2.56E-01	4.65E-01		pCi/g
Am-241	10/15/13	U	2.83E-02	1.21E-01	1.99E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID:	334614008	Client: TLG Services, Inc.
Client Sample ID:	SU 1.4 #2 0–15cm	Collect Date: August 13, 2013
Matrix:	Misc Solid	Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	8.30E-01	pCi/g	004.256
Bi-214	6.32E-01	pCi/g	003.240
Pb-212	1.07E+00	pCi/g	005.499
Pb-214	7.63E-01	pCi/g	003.916
K-40	1.51E+01	pCi/g	077.254
Ra-228	8.30E-01	pCi/g	004.256
Tl-208	3.08E-01	pCi/g	001.579
Total Activity:		Total % Abundance:	100.00

GEL LABORATORIES LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614009
Client Sample ID: SU 1.4 #3 0-15cm
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 14, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	1.48E-01	4.64E-01	8.76E-01		pCi/g
Na-22	10/15/13	U	3.06E-02	3.66E-02	7.22E-02		pCi/g
K-40	10/15/13	3	1.41E+01	1.12E+00	4.99E-01		pCi/g
Cr-51	10/15/13	U	5.42E-04	9.72E-01	1.73E+00		pCi/g
Mn-54	10/15/13	U	5.13E-03	3.54E-02	6.42E-02		pCi/g
Fe-59	10/15/13	U	-9.78E-02	1.42E-01	2.49E-01		pCi/g
Co-56	10/15/13	U	-1.06E-02	5.16E-02	8.92E-02		pCi/g
Co-57	10/15/13	UI	0.00E+00	7.14E-02	4.07E-02		pCi/g
Co-58	10/15/13	U	-4.90E-03	5.27E-02	9.41E-02		pCi/g
Co-60	10/15/13	3	3.44E-01	6.34E-02	5.65E-02		pCi/g
Zn-65	10/15/13	U	8.08E-02	1.48E-01	1.68E-01		pCi/g
Y-88	10/15/13	U	1.58E-02	3.04E-02	6.62E-02		pCi/g
Zr-95	10/15/13	U	5.63E-02	1.24E-01	2.02E-01		pCi/g
Nb-94	10/15/13	U	-1.27E-02	2.88E-02	4.77E-02		pCi/g
Nb-95	10/15/13	U	1.37E-02	7.08E-02	1.12E-01		pCi/g
Ru-106	10/15/13	UI	0.00E+00	2.87E-01	4.84E-01		pCi/g
Ag-110m	10/15/13	U	1.47E-02	4.69E-02	8.66E-02		pCi/g
Sn-113	10/15/13	U	2.59E-02	4.90E-02	8.92E-02		pCi/g
Sb-124	10/15/13	U	-3.05E-02	1.00E-01	1.83E-01		pCi/g
Sb-125	10/15/13	U	-2.62E-03	7.46E-02	1.31E-01		pCi/g
Cs-134	10/15/13	3,U	6.91E-02	3.93E-02	6.99E-02		pCi/g
Cs-136	10/15/13	U	2.83E-01	9.76E-01	1.87E+00		pCi/g
Cs-137	10/15/13	U	4.61E-03	3.02E-02	5.38E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	4.02E-03	3.99E-02	6.22E-02		pCi/g
Ba-140	10/15/13	U	1.42E-01	2.46E+00	4.58E+00		pCi/g
Ce-139	10/15/13	U	9.19E-03	2.82E-02	5.23E-02		pCi/g
Ce-141	10/15/13	U	8.85E-02	1.28E-01	2.41E-01		pCi/g
Ce-144	10/15/13	U	-6.33E-02	2.50E-01	2.87E-01		pCi/g
Nd-147	10/15/13	U	-7.65E+00	8.20E+00	1.41E+01		pCi/g
Pm-144	10/15/13	U	-2.41E-02	3.03E-02	5.17E-02		pCi/g
Pm-146	10/15/13	U	2.19E-02	3.29E-02	6.36E-02		pCi/g
Eu-152	10/15/13	3	8.50E-01	1.59E-01	1.43E-01		pCi/g
Eu-154	10/15/13	U	8.25E-02	1.01E-01	1.99E-01		pCi/g
Eu-155	10/15/13	U	9.75E-02	1.32E-01	1.49E-01		pCi/g
Ir-192	10/15/13	U	5.42E-03	4.29E-02	7.70E-02		pCi/g
Hg-203	10/15/13	U	6.94E-02	7.09E-02	1.19E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614009 Client: TLG Services, Inc.
Client Sample ID: SU 1.4 #3 0-15cm Collect Date: August 14, 2013
Matrix: Misc Solid Receive Date: October 03, 2013
Geometry Received: Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	2.64E-01	6.71E-02	5.18E-02		pCi/g
Pb-210	10/15/13	3	2.68E+00	1.49E+00	1.91E+00		pCi/g
Pb-212	10/15/13	3	1.09E+00	9.25E-02	7.82E-02		pCi/g
Pb-214	10/15/13	3	7.81E-01	1.23E-01	2.04E-01		pCi/g
Bi-212	10/15/13	3,U	7.49E-01	6.42E-01	9.57E-01		pCi/g
Bi-214	10/15/13	3	6.83E-01	1.16E-01	1.15E-01		pCi/g
Ra-228	10/15/13	3	1.11E+00	2.34E-01	2.07E-01		pCi/g
Ac-228	10/15/13	3	1.11E+00	2.34E-01	2.07E-01		pCi/g
Th-234	10/15/13	3	1.64E+00	1.54E+00	1.22E+00		pCi/g
U-235	10/15/13	U	6.39E-02	1.56E-01	2.84E-01		pCi/g
U-238	10/15/13	3	1.64E+00	1.54E+00	1.22E+00		pCi/g
Np-239	10/15/13	U	-1.96E-01	3.57E-01	5.66E-01		pCi/g
Am-241	10/15/13	U	5.35E-02	8.16E-02	1.34E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614009

Client: TLG Services, Inc.

Client Sample ID: SU 1.4 #3 0–15cm

Collect Date: August 14, 2013

Matrix: Misc Solid

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	1.11E+00	pCi/g	004.215
Bi-214	6.83E-01	pCi/g	002.598
Co-60	3.44E-01	pCi/g	001.310
Eu-152	8.50E-01	pCi/g	003.234
Pb-210	2.68E+00	pCi/g	010.192
Pb-212	1.09E+00	pCi/g	004.162
Pb-214	7.81E-01	pCi/g	002.972
K-40	1.41E+01	pCi/g	053.603
Ra-228	1.11E+00	pCi/g	004.215
Tl-208	2.64E-01	pCi/g	001.006
Th-234	1.64E+00	pCi/g	006.247
U-238	1.64E+00	pCi/g	006.247
Total Activity:	2.63E+01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID:	334614010	Client: TLG Services, Inc.	
Client Sample ID:	SU 1.4 #4 0-15cm	Collect Date: August 14, 2013	
Matrix:	Misc Solid	Receive Date: October 03, 2013	
Geometry Received:		Report Date: October 28, 2013	

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	2.32E-01	4.06E-01	7.98E-01		pCi/g
Na-22	10/15/13	U	-1.59E-02	2.71E-02	4.62E-02		pCi/g
K-40	10/15/13	3	1.58E+01	1.17E+00	5.06E-01		pCi/g
Cr-51	10/15/13	U	-2.68E-01	8.59E-01	1.54E+00		pCi/g
Mn-54	10/15/13	U	2.03E-02	2.76E-02	5.36E-02		pCi/g
Fe-59	10/15/13	U	-8.03E-02	1.35E-01	1.99E-01		pCi/g
Co-56	10/15/13	U	-2.64E-02	4.20E-02	7.17E-02		pCi/g
Co-57	10/15/13	U	1.24E-02	1.97E-02	3.68E-02		pCi/g
Co-58	10/15/13	U	-1.10E-02	4.16E-02	7.43E-02		pCi/g
Co-60	10/15/13	U	1.58E-02	3.30E-02	5.65E-02		pCi/g
Zn-65	10/15/13	U	2.33E-02	8.13E-02	1.34E-01		pCi/g
Y-88	10/15/13	U	-4.48E-03	2.85E-02	5.57E-02		pCi/g
Zr-95	10/15/13	U	4.35E-02	8.97E-02	1.70E-01		pCi/g
Nb-94	10/15/13	3,U	3.08E-02	2.32E-02	4.71E-02		pCi/g
Nb-95	10/15/13	U	1.98E-02	5.61E-02	9.20E-02		pCi/g
Ru-106	10/15/13	U	-3.16E-02	2.78E-01	4.41E-01		pCi/g
Ag-110m	10/15/13	U	-3.78E-02	3.77E-02	6.13E-02		pCi/g
Sn-113	10/15/13	U	8.03E-03	4.13E-02	7.60E-02		pCi/g
Sb-124	10/15/13	U	3.15E-02	1.13E-01	2.01E-01		pCi/g
Sb-125	10/15/13	U	2.61E-03	5.96E-02	1.14E-01		pCi/g
Cs-134	10/15/13	UI	0.00E+00	3.01E-02	5.22E-02		pCi/g
Cs-136	10/15/13	U	6.14E-02	8.10E-01	1.54E+00		pCi/g
Cs-137	10/15/13	U	-2.96E-03	2.82E-02	5.29E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	3.27E-02	3.43E-02	5.43E-02		pCi/g
Ba-140	10/15/13	U	1.16E+00	2.14E+00	4.21E+00		pCi/g
Ce-139	10/15/13	3,U	2.59E-02	2.49E-02	4.96E-02		pCi/g
Ce-141	10/15/13	U	1.21E-01	1.86E-01	2.10E-01		pCi/g
Ce-144	10/15/13	U	5.19E-03	1.66E-01	2.84E-01		pCi/g
Nd-147	10/15/13	U	-3.00E+00	6.96E+00	1.27E+01		pCi/g
Pm-144	10/15/13	U	-5.04E-03	2.71E-02	4.90E-02		pCi/g
Pm-146	10/15/13	U	2.88E-02	5.17E-02	5.73E-02		pCi/g
Eu-152	10/15/13	U	-2.40E-02	7.33E-02	1.20E-01		pCi/g
Eu-154	10/15/13	U	-5.68E-02	7.60E-02	1.27E-01		pCi/g
Eu-155	10/15/13	U	4.53E-02	7.89E-02	1.33E-01		pCi/g
Ir-192	10/15/13	U	2.44E-02	3.81E-02	7.27E-02		pCi/g
Hg-203	10/15/13	3,U	7.20E-02	6.08E-02	1.07E-01		pCi/g

- Note(s):** 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614010
Client Sample ID: SU 1.4 #4 0-15cm
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 14, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	2.48E-01	4.64E-02	4.00E-02		pCi/g
Pb-210	10/15/13	U	4.70E+00	5.10E+00	4.80E+00		pCi/g
Pb-212	10/15/13	3	9.86E-01	8.69E-02	6.97E-02		pCi/g
Pb-214	10/15/13	3	7.77E-01	9.89E-02	1.89E-01		pCi/g
Bi-212	10/15/13	3	1.09E+00	4.92E-01	7.00E-01		pCi/g
Bi-214	10/15/13	3	5.78E-01	1.27E-01	8.49E-02		pCi/g
Ra-228	10/15/13	3	7.70E-01	1.77E-01	1.75E-01		pCi/g
Ac-228	10/15/13	3	7.70E-01	1.77E-01	1.75E-01		pCi/g
Th-234	10/15/13	U	-3.03E-01	9.23E-01	1.71E+00		pCi/g
U-235	10/15/13	3,U	2.50E-01	2.08E-01	2.65E-01		pCi/g
U-238	10/15/13	U	-3.03E-01	9.23E-01	1.71E+00		pCi/g
Np-239	10/15/13	U	-2.31E-01	3.17E-01	4.85E-01		pCi/g
Am-241	10/15/13	U	-1.40E-02	1.07E-01	2.01E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID:	334614010	Client: TLG Services, Inc.
Client Sample ID:	SU 1.4 #4 0–15cm	Collect Date: August 14, 2013
Matrix:	Misc Solid	Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	7.70E-01	pCi/g	003.667
Bi-212	1.09E+00	pCi/g	005.200
Bi-214	5.78E-01	pCi/g	002.751
Pb-212	9.86E-01	pCi/g	004.693
Pb-214	7.77E-01	pCi/g	003.701
K-40	1.58E+01	pCi/g	075.140
Ra-228	7.70E-01	pCi/g	003.667
Tl-208	2.48E-01	pCi/g	001.180
Total Activity:		2.10E+01	Total % Abundance: 100.00

GEL LABORATORIES LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614011
Client Sample ID: SU 1.1 #1
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	2.18E-01	4.30E-01	7.86E-01		pCi/g
Na-22	10/15/13	U	-1.34E-02	3.12E-02	5.48E-02		pCi/g
K-40	10/15/13	U	1.17E-01	4.51E-01	7.41E-01		pCi/g
Cr-51	10/15/13	U	5.27E-02	8.32E-01	1.48E+00		pCi/g
Mn-54	10/15/13	U	-9.65E-03	2.99E-02	5.19E-02		pCi/g
Fe-59	10/15/13	U	1.35E-02	1.18E-01	2.27E-01		pCi/g
Co-56	10/15/13	U	-2.36E-02	5.00E-02	8.47E-02		pCi/g
Co-57	10/15/13	U	1.32E-03	1.64E-02	2.86E-02		pCi/g
Co-58	10/15/13	U	-2.49E-02	4.77E-02	8.09E-02		pCi/g
Co-60	10/15/13	U	2.45E-02	4.56E-02	6.08E-02		pCi/g
Zn-65	10/15/13	U	-7.23E-02	7.76E-02	1.28E-01		pCi/g
Y-88	10/15/13	U	-1.87E-02	4.99E-02	9.02E-02		pCi/g
Zr-95	10/15/13	U	1.35E-02	8.63E-02	1.59E-01		pCi/g
Nb-94	10/15/13	U	2.19E-02	2.77E-02	5.29E-02		pCi/g
Nb-95	10/15/13	U	4.26E-02	5.05E-02	9.85E-02		pCi/g
Ru-106	10/15/13	U	-1.41E-01	2.64E-01	4.56E-01		pCi/g
Ag-110m	10/15/13	3,U	4.14E-02	3.67E-02	7.71E-02		pCi/g
Sn-113	10/15/13	U	-4.19E-02	4.07E-02	6.53E-02		pCi/g
Sb-124	10/15/13	U	9.05E-03	1.27E-01	2.52E-01		pCi/g
Sb-125	10/15/13	U	1.00E-02	6.85E-02	1.22E-01		pCi/g
Cs-134	10/15/13	U	-1.02E-02	3.66E-02	5.47E-02		pCi/g
Cs-136	10/15/13	U	1.52E-01	8.71E-01	1.61E+00		pCi/g
Cs-137	10/15/13	U	-4.25E-03	3.24E-02	5.01E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	-1.29E-02	3.24E-02	5.52E-02		pCi/g
Ba-140	10/15/13	U	1.37E+00	2.39E+00	4.40E+00		pCi/g
Ce-139	10/15/13	U	-1.64E-02	2.66E-02	3.82E-02		pCi/g
Ce-141	10/15/13	U	1.99E-02	1.33E-01	1.60E-01		pCi/g
Ce-144	10/15/13	U	-8.90E-02	1.32E-01	2.17E-01		pCi/g
Nd-147	10/15/13	U	7.03E+00	7.60E+00	1.44E+01		pCi/g
Pm-144	10/15/13	U	7.22E-03	3.09E-02	5.66E-02		pCi/g
Pm-146	10/15/13	U	3.17E-04	3.32E-02	5.79E-02		pCi/g
Eu-152	10/15/13	U	2.55E-02	7.28E-02	1.31E-01		pCi/g
Eu-154	10/15/13	U	-4.91E-02	8.91E-02	1.53E-01		pCi/g
Eu-155	10/15/13	U	8.88E-03	6.12E-02	1.08E-01		pCi/g
Ir-192	10/15/13	U	3.57E-03	4.25E-02	6.70E-02		pCi/g
Hg-203	10/15/13	U	-7.09E-03	5.52E-02	9.05E-02		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614011
Client Sample ID: SU 1.1 #1
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	U	-8.53E-03	3.27E-02	5.36E-02		pCi/g
Pb-210	10/15/13	U	-1.19E+00	4.54E+00	6.63E+00		pCi/g
Pb-212	10/15/13	U	-1.57E-02	5.68E-02	7.81E-02		pCi/g
Pb-214	10/15/13	U	-6.33E-02	7.11E-02	1.01E-01		pCi/g
Bi-212	10/15/13	U	2.42E-01	3.70E-01	7.12E-01		pCi/g
Bi-214	10/15/13	U	1.27E-02	6.65E-02	1.13E-01		pCi/g
Ra-228	10/15/13	3,U	1.76E-01	1.50E-01	2.44E-01		pCi/g
Ac-228	10/15/13	3,U	1.76E-01	1.50E-01	2.44E-01		pCi/g
Th-234	10/15/13	U	3.42E-01	1.23E+00	1.53E+00		pCi/g
U-235	10/15/13	U	2.64E-02	1.54E-01	2.25E-01		pCi/g
U-238	10/15/13	U	3.42E-01	1.23E+00	1.53E+00		pCi/g
Np-239	10/15/13	U	-2.95E-02	2.22E-01	3.83E-01		pCi/g
Am-241	10/15/13	U	5.97E-02	1.25E-01	1.95E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614011
Client Sample ID: SU 1.1 #1
Matrix: Misc Solid

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Total Activity:		0.00E+00	Total % Abundance: 000.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614012
Client Sample ID: SU 1.1 #2
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-2.19E-02	3.52E-01	6.16E-01		pCi/g
Na-22	10/15/13	U	-1.06E-02	2.94E-02	5.02E-02		pCi/g
K-40	10/15/13	U	8.24E-04	3.73E-01	4.58E-01		pCi/g
Cr-51	10/15/13	U	4.11E-01	6.38E-01	1.38E+00		pCi/g
Mn-54	10/15/13	U	-9.96E-03	2.75E-02	4.80E-02		pCi/g
Fe-59	10/15/13	U	3.95E-02	1.27E-01	2.20E-01		pCi/g
Co-56	10/15/13	U	-2.86E-02	4.01E-02	6.71E-02		pCi/g
Co-57	10/15/13	U	-8.05E-03	1.69E-02	2.76E-02		pCi/g
Co-58	10/15/13	U	-2.49E-04	3.66E-02	6.73E-02		pCi/g
Co-60	10/15/13	3,U	3.54E-02	2.32E-02	4.83E-02		pCi/g
Zn-65	10/15/13	U	2.29E-02	6.14E-02	1.16E-01		pCi/g
Y-88	10/15/13	U	-2.61E-03	3.99E-02	6.84E-02		pCi/g
Zr-95	10/15/13	U	-2.96E-02	7.16E-02	1.25E-01		pCi/g
Nb-94	10/15/13	U	-5.87E-03	2.34E-02	4.14E-02		pCi/g
Nb-95	10/15/13	U	1.88E-02	5.47E-02	9.44E-02		pCi/g
Ru-106	10/15/13	U	4.57E-02	2.60E-01	4.54E-01		pCi/g
Ag-110m	10/15/13	U	1.22E-02	3.75E-02	7.07E-02		pCi/g
Sn-113	10/15/13	U	-4.93E-04	3.88E-02	6.78E-02		pCi/g
Sb-124	10/15/13	U	-6.41E-02	9.57E-02	1.62E-01		pCi/g
Sb-125	10/15/13	U	-3.46E-02	6.20E-02	1.03E-01		pCi/g
Cs-134	10/15/13	U	2.66E-02	3.28E-02	5.02E-02		pCi/g
Cs-136	10/15/13	U	-2.68E-02	7.48E-01	1.36E+00		pCi/g
Cs-137	10/15/13	U	-3.91E-04	2.56E-02	4.42E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	6.69E-03	3.07E-02	4.86E-02		pCi/g
Ba-140	10/15/13	U	1.72E-01	1.92E+00	3.41E+00		pCi/g
Ce-139	10/15/13	U	-1.21E-02	2.37E-02	3.80E-02		pCi/g
Ce-141	10/15/13	U	4.22E-03	1.31E-01	1.66E-01		pCi/g
Ce-144	10/15/13	U	8.78E-02	1.29E-01	2.25E-01		pCi/g
Nd-147	10/15/13	3,U	5.83E+00	5.81E+00	1.27E+01		pCi/g
Pm-144	10/15/13	U	-6.83E-03	2.83E-02	5.00E-02		pCi/g
Pm-146	10/15/13	U	-3.01E-02	2.87E-02	4.51E-02		pCi/g
Eu-152	10/15/13	U	3.96E-02	6.63E-02	1.10E-01		pCi/g
Eu-154	10/15/13	U	-2.80E-02	8.14E-02	1.40E-01		pCi/g
Eu-155	10/15/13	U	-2.54E-02	6.36E-02	9.95E-02		pCi/g
Ir-192	10/15/13	U	1.51E-02	3.81E-02	6.16E-02		pCi/g
Hg-203	10/15/13	U	3.28E-02	4.67E-02	8.61E-02		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614012
Client Sample ID: SU 1.1 #2
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	U	1.67E-02	3.74E-02	4.03E-02		pCi/g
Pb-210	10/15/13	U	9.57E-01	3.41E+00	5.94E+00		pCi/g
Pb-212	10/15/13	3	6.73E-02	5.45E-02	6.56E-02		pCi/g
Pb-214	10/15/13	U	4.34E-02	7.35E-02	8.07E-02		pCi/g
Bi-212	10/15/13	U	1.59E-01	3.50E-01	6.58E-01		pCi/g
Bi-214	10/15/13	U	5.25E-03	7.88E-02	1.14E-01		pCi/g
Ra-228	10/15/13	3	2.35E-01	1.38E-01	1.38E-01		pCi/g
Ac-228	10/15/13	3	2.35E-01	1.38E-01	1.38E-01		pCi/g
Th-234	10/15/13	U	9.18E-01	1.25E+00	1.50E+00		pCi/g
U-235	10/15/13	U	5.06E-03	1.57E-01	1.92E-01		pCi/g
U-238	10/15/13	U	9.18E-01	1.25E+00	1.50E+00		pCi/g
Np-239	10/15/13	U	-3.76E-02	2.67E-01	4.06E-01		pCi/g
Am-241	10/15/13	U	6.35E-02	1.20E-01	1.92E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

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U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614012
Client Sample ID: SU 1.1 #2
Matrix: Misc Solid

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Ac-228	2.35E-01	pCi/g	043.734
Pb-212	6.73E-02	pCi/g	012.532
Ra-228	2.35E-01	pCi/g	043.734
Total Activity:	5.37E-01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614013
 Client Sample ID: SU 1.1 #3
 Matrix: Misc Solid
 Geometry Received:

Client: TLG Services, Inc.
 Collect Date: August 15, 2013
 Receive Date: October 03, 2013
 Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-2.58E-01	3.82E-01	6.21E-01		pCi/g
Na-22	10/15/13	U	4.02E-03	2.25E-02	4.23E-02		pCi/g
K-40	10/15/13	U	2.80E-01	4.10E-01	3.65E-01		pCi/g
Cr-51	10/15/13	U	-1.39E-02	6.89E-01	1.21E+00		pCi/g
Mn-54	10/15/13	U	1.91E-02	3.36E-02	5.28E-02		pCi/g
Fe-59	10/15/13	U	-3.36E-02	1.25E-01	2.20E-01		pCi/g
Co-56	10/15/13	U	-1.94E-02	4.04E-02	6.76E-02		pCi/g
Co-57	10/15/13	U	1.29E-02	1.57E-02	2.82E-02		pCi/g
Co-58	10/15/13	U	-9.18E-03	4.26E-02	7.34E-02		pCi/g
Co-60	10/15/13	3	4.01E-01	6.42E-02	4.48E-02		pCi/g
Zn-65	10/15/13	U	-1.35E-02	6.74E-02	1.19E-01		pCi/g
Y-88	10/15/13	U	7.80E-03	3.04E-02	6.12E-02		pCi/g
Zr-95	10/15/13	U	-9.60E-03	8.33E-02	1.32E-01		pCi/g
Nb-94	10/15/13	U	-1.28E-02	2.10E-02	3.53E-02		pCi/g
Nb-95	10/15/13	U	-6.70E-03	4.52E-02	7.85E-02		pCi/g
Ru-106	10/15/13	U	-3.62E-02	2.40E-01	4.23E-01		pCi/g
Ag-110m	10/15/13	U	3.09E-03	4.06E-02	7.42E-02		pCi/g
Sn-113	10/15/13	U	2.56E-02	3.96E-02	6.43E-02		pCi/g
Sb-124	10/15/13	U	3.00E-02	1.00E-01	1.97E-01		pCi/g
Sb-125	10/15/13	U	-1.97E-02	6.37E-02	1.08E-01		pCi/g
Cs-134	10/15/13	U	-2.79E-03	2.87E-02	5.01E-02		pCi/g
Cs-136	10/15/13	U	-7.21E-01	7.53E-01	1.24E+00		pCi/g
Cs-137	10/15/13	U	3.98E-03	2.66E-02	4.32E-02	1.00E-01	pCi/g
Ba-133	10/15/13	3,U	3.03E-02	2.79E-02	4.71E-02		pCi/g
Ba-140	10/15/13	U	9.75E-01	2.18E+00	4.04E+00		pCi/g
Ce-139	10/15/13	U	5.92E-03	2.17E-02	3.36E-02		pCi/g
Ce-141	10/15/13	U	2.78E-02	9.34E-02	1.62E-01		pCi/g
Ce-144	10/15/13	U	7.40E-02	1.28E-01	2.08E-01		pCi/g
Nd-147	10/15/13	U	-4.73E+00	7.36E+00	1.15E+01		pCi/g
Pm-144	10/15/13	3,U	3.40E-02	2.55E-02	4.93E-02		pCi/g
Pm-146	10/15/13	U	1.69E-02	2.82E-02	5.07E-02		pCi/g
Eu-152	10/15/13	U	3.94E-02	6.15E-02	1.12E-01		pCi/g
Eu-154	10/15/13	U	2.17E-02	6.09E-02	1.18E-01		pCi/g
Eu-155	10/15/13	U	-3.20E-02	5.21E-02	8.83E-02		pCi/g
Ir-192	10/15/13	U	-1.60E-02	3.55E-02	5.49E-02		pCi/g
Hg-203	10/15/13	U	1.61E-02	4.92E-02	7.88E-02		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

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U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614013
Client Sample ID: SU 1.1 #3
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3,U	3.57E-02	3.38E-02	4.04E-02		pCi/g
Pb-210	10/15/13	U	1.84E-01	3.14E+00	5.19E+00		pCi/g
Pb-212	10/15/13	3,U	5.12E-02	4.83E-02	6.87E-02		pCi/g
Pb-214	10/15/13	U	1.29E-02	7.30E-02	8.94E-02		pCi/g
Bi-212	10/15/13	U	-4.60E-03	3.87E-01	6.07E-01		pCi/g
Bi-214	10/15/13	U	1.15E-02	7.75E-02	8.23E-02		pCi/g
Ra-228	10/15/13	U	7.46E-02	1.64E-01	2.00E-01		pCi/g
Ac-228	10/15/13	U	7.46E-02	1.64E-01	2.00E-01		pCi/g
Th-234	10/15/13	U	3.41E-01	1.38E+00	1.80E+00		pCi/g
U-235	10/15/13	U	-1.79E-01	1.34E-01	2.02E-01		pCi/g
U-238	10/15/13	U	3.41E-01	1.38E+00	1.80E+00		pCi/g
Np-239	10/15/13	U	3.13E-03	2.28E-01	3.55E-01		pCi/g
Am-241	10/15/13	U	-3.98E-02	1.02E-01	1.62E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614013
Client Sample ID: SU 1.1 #3
Matrix: Misc Solid

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Co-60	4.01E-01	pCi/g	100.000
Total Activity:	4.01E-01	Total % Abundance:	100.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614014
 Client Sample ID: SU 1.1 #4
 Matrix: Misc Solid
 Geometry Received:

Client: TLG Services, Inc.
 Collect Date: August 14, 2013
 Receive Date: October 03, 2013
 Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-3.49E-01	8.50E-01	1.38E+00		pCi/g
Na-22	10/15/13	U	-3.06E-03	5.23E-02	9.16E-02		pCi/g
K-40	10/15/13	U	2.70E-01	7.15E-01	1.01E+00		pCi/g
Cr-51	10/15/13	U	6.90E-01	1.64E+00	2.81E+00		pCi/g
Mn-54	10/15/13	3,U	6.43E-02	5.56E-02	1.02E-01		pCi/g
Fe-59	10/15/13	U	-5.38E-02	2.78E-01	4.09E-01		pCi/g
Co-56	10/15/13	U	3.82E-02	8.57E-02	1.51E-01		pCi/g
Co-57	10/15/13	U	7.32E-03	2.99E-02	4.97E-02		pCi/g
Co-58	10/15/13	U	2.26E-02	8.78E-02	1.53E-01		pCi/g
Co-60	10/15/13	U	5.01E-02	5.74E-02	1.07E-01		pCi/g
Zn-65	10/15/13	U	-4.49E-02	1.40E-01	2.03E-01		pCi/g
Y-88	10/15/13	U	2.63E-02	6.19E-02	1.22E-01		pCi/g
Zr-95	10/15/13	U	8.00E-02	1.64E-01	2.90E-01		pCi/g
Nb-94	10/15/13	U	4.09E-03	5.04E-02	8.65E-02		pCi/g
Nb-95	10/15/13	U	-1.10E-02	9.88E-02	1.67E-01		pCi/g
Ru-106	10/15/13	U	1.16E-01	4.83E-01	8.44E-01		pCi/g
Ag-110m	10/15/13	U	-5.57E-02	8.16E-02	1.32E-01		pCi/g
Sn-113	10/15/13	U	-1.84E-02	8.30E-02	1.38E-01		pCi/g
Sb-124	10/15/13	U	-6.20E-02	2.05E-01	3.62E-01		pCi/g
Sb-125	10/15/13	U	-1.39E-02	1.38E-01	2.29E-01		pCi/g
Cs-134	10/15/13	U	2.45E-02	6.08E-02	1.07E-01		pCi/g
Cs-136	10/15/13	U	5.55E-01	1.73E+00	3.11E+00		pCi/g
Cs-137	10/15/13	U	-2.69E-02	5.34E-02	8.92E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	-5.09E-02	7.90E-02	1.03E-01		pCi/g
Ba-140	10/15/13	U	-1.19E+00	4.87E+00	8.33E+00		pCi/g
Ce-139	10/15/13	U	-1.44E-02	4.73E-02	7.62E-02		pCi/g
Ce-141	10/15/13	UI	0.00E+00	2.89E-01	3.33E-01		pCi/g
Ce-144	10/15/13	U	-1.73E-01	2.39E-01	3.82E-01		pCi/g
Nd-147	10/15/13	U	-5.17E-01	1.81E+01	2.58E+01		pCi/g
Pm-144	10/15/13	U	1.86E-03	5.58E-02	9.57E-02		pCi/g
Pm-146	10/15/13	U	-2.79E-02	6.02E-02	9.79E-02		pCi/g
Eu-152	10/15/13	U	3.26E-02	1.77E-01	2.29E-01		pCi/g
Eu-154	10/15/13	U	-1.75E-03	1.44E-01	2.53E-01		pCi/g
Eu-155	10/15/13	U	5.76E-02	8.33E-02	1.78E-01		pCi/g
Ir-192	10/15/13	U	-7.07E-02	7.46E-02	1.21E-01		pCi/g
Hg-203	10/15/13	U	2.19E-02	9.85E-02	1.68E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

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U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614014
Client Sample ID: SU 1.1 #4
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 14, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3,U	7.64E-02	7.11E-02	8.52E-02		pCi/g
Pb-210	10/15/13	U	5.94E-01	6.66E-01	8.62E-01		pCi/g
Pb-212	10/15/13	U	1.67E-02	9.53E-02	1.32E-01		pCi/g
Pb-214	10/15/13	U	8.60E-02	1.44E-01	1.89E-01		pCi/g
Bi-212	10/15/13	U	8.91E-01	1.06E+00	1.23E+00		pCi/g
Bi-214	10/15/13	U	7.61E-03	1.43E-01	2.02E-01		pCi/g
Ra-228	10/15/13	U	1.68E-01	3.27E-01	4.03E-01		pCi/g
Ac-228	10/15/13	U	1.68E-01	3.27E-01	4.03E-01		pCi/g
Th-234	10/15/13	U	2.88E-02	7.54E-01	9.78E-01		pCi/g
U-235	10/15/13	U	2.66E-01	2.85E-01	3.64E-01		pCi/g
U-238	10/15/13	U	2.88E-02	7.54E-01	9.78E-01		pCi/g
Np-239	10/15/13	U	9.18E-02	4.23E-01	7.04E-01		pCi/g
Am-241	10/15/13	U	1.99E-02	7.31E-02	1.03E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614014
Client Sample ID: SU 1.1 #4
Matrix: Misc Solid

Client: TLG Services, Inc.
Collect Date: August 14, 2013
Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Total Activity:		0.00E+00	Total % Abundance: 000.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: **334614015**
 Client Sample ID: **SU 1.2 #1**
 Matrix: **Misc Solid**
 Geometry Received:

Client: **TLG Services, Inc.**
 Collect Date: **August 09, 2013**
 Receive Date: **October 03, 2013**
 Report Date: **October 28, 2013**

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-3.60E-01	4.75E-01	8.34E-01		pCi/g
Na-22	10/15/13	3,U	2.58E-02	2.53E-02	5.71E-02		pCi/g
K-40	10/15/13	U	-1.76E-01	3.05E-01	6.04E-01		pCi/g
Cr-51	10/15/13	U	4.23E-02	9.89E-01	1.81E+00		pCi/g
Mn-54	10/15/13	U	-3.56E-02	3.42E-02	5.80E-02		pCi/g
Fe-59	10/15/13	U	7.49E-02	1.66E-01	3.25E-01		pCi/g
Co-56	10/15/13	U	-1.11E-02	5.41E-02	1.00E-01		pCi/g
Co-57	10/15/13	UI	0.00E+00	3.82E-02	3.59E-02		pCi/g
Co-58	10/15/13	U	1.63E-02	5.21E-02	1.02E-01		pCi/g
Co-60	10/15/13	3	9.51E-01	1.03E-01	4.49E-02		pCi/g
Zn-65	10/15/13	3,U	9.61E-02	6.18E-02	1.49E-01		pCi/g
Y-88	10/15/13	U	2.16E-02	4.38E-02	9.47E-02		pCi/g
Zr-95	10/15/13	U	3.99E-02	1.09E-01	1.84E-01		pCi/g
Nb-94	10/15/13	U	-9.47E-03	3.31E-02	4.99E-02		pCi/g
Nb-95	10/15/13	U	3.71E-02	5.95E-02	1.15E-01		pCi/g
Ru-106	10/15/13	U	6.11E-02	2.51E-01	4.82E-01		pCi/g
Ag-110m	10/15/13	U	6.56E-03	5.39E-02	1.02E-01		pCi/g
Sn-113	10/15/13	U	-1.48E-02	4.32E-02	8.01E-02		pCi/g
Sb-124	10/15/13	U	1.41E-02	7.31E-02	1.69E-01		pCi/g
Sb-125	10/15/13	U	-3.19E-02	7.52E-02	1.33E-01		pCi/g
Cs-134	10/15/13	UI	0.00E+00	7.23E-02	7.16E-02		pCi/g
Cs-136	10/15/13	U	-1.76E-01	1.35E+00	2.49E+00		pCi/g
Cs-137	10/15/13	U	-2.32E-02	2.74E-02	4.59E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	-1.76E-03	3.28E-02	5.90E-02		pCi/g
Ba-140	10/15/13	U	1.36E-02	3.21E+00	6.05E+00		pCi/g
Ce-139	10/15/13	U	8.12E-03	2.82E-02	4.80E-02		pCi/g
Ce-141	10/15/13	U	4.75E-02	1.34E-01	2.31E-01		pCi/g
Ce-144	10/15/13	U	8.10E-02	1.36E-01	2.69E-01		pCi/g
Nd-147	10/15/13	U	3.87E+00	1.17E+01	2.20E+01		pCi/g
Pm-144	10/15/13	U	3.64E-03	3.28E-02	6.04E-02		pCi/g
Pm-146	10/15/13	U	1.24E-02	3.13E-02	6.14E-02		pCi/g
Eu-152	10/15/13	UI	0.00E+00	1.26E-01	1.80E-01		pCi/g
Eu-154	10/15/13	3,U	7.11E-02	6.98E-02	1.58E-01		pCi/g
Eu-155	10/15/13	3,U	8.76E-02	7.39E-02	1.44E-01		pCi/g
Ir-192	10/15/13	U	-1.18E-02	4.10E-02	7.30E-02		pCi/g
Hg-203	10/15/13	U	1.05E-02	6.08E-02	1.13E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614015
Client Sample ID: SU 1.2 #1
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 09, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	6.93E-02	3.84E-02	4.98E-02		pCi/g
Pb-210	10/15/13	U	3.05E-02	4.45E+00	8.25E+00		pCi/g
Pb-212	10/15/13	3,U	1.03E-01	7.95E-02	1.11E-01		pCi/g
Pb-214	10/15/13	U	-1.95E-02	6.58E-02	1.05E-01		pCi/g
Bi-212	10/15/13	U	3.21E-01	4.37E-01	8.50E-01		pCi/g
Bi-214	10/15/13	U	-1.93E-02	6.84E-02	1.19E-01		pCi/g
Ra-228	10/15/13	U	1.91E-01	1.96E-01	2.86E-01		pCi/g
Ac-228	10/15/13	U	1.91E-01	1.96E-01	2.86E-01		pCi/g
Th-234	10/15/13	U	-9.73E-01	1.13E+00	2.05E+00		pCi/g
U-235	10/15/13	U	-7.21E-03	1.32E-01	2.49E-01		pCi/g
U-238	10/15/13	U	-9.73E-01	1.13E+00	2.05E+00		pCi/g
Np-239	10/15/13	U	-6.25E-02	2.94E-01	4.92E-01		pCi/g
Am-241	10/15/13	U	-1.11E-02	1.28E-01	2.38E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

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3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

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UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614015
Client Sample ID: SU 1.2 #1
Matrix: Misc Solid

Client: TLG Services, Inc.
Collect Date: August 09, 2013
Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Co-60	9.51E-01	pCi/g	093.201
Tl-208	6.93E-02	pCi/g	006.799
Total Activity:	1.02E+00	Total % Abundance:	100.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614016
Client Sample ID: SU 1.2 #2
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	-2.27E-01	2.75E-01	4.94E-01		pCi/g
Na-22	10/15/13	U	1.12E-02	1.50E-02	3.26E-02		pCi/g
K-40	10/15/13	U	1.65E-01	2.27E-01	1.98E-01		pCi/g
Cr-51	10/15/13	U	-2.53E-01	4.53E-01	8.79E-01		pCi/g
Mn-54	10/15/13	U	-8.71E-03	2.46E-02	3.93E-02		pCi/g
Fe-59	10/15/13	U	-1.66E-02	9.77E-02	1.81E-01		pCi/g
Co-56	10/15/13	U	8.19E-04	3.25E-02	6.28E-02		pCi/g
Co-57	10/15/13	UI	0.00E+00	3.51E-02	3.85E-02		pCi/g
Co-58	10/15/13	U	-9.84E-03	3.05E-02	5.77E-02		pCi/g
Co-60	10/15/13	3	7.72E-01	7.27E-02	3.83E-02		pCi/g
Zn-65	10/15/13	U	6.18E-03	6.44E-02	1.05E-01		pCi/g
Y-88	10/15/13	U	1.36E-02	2.20E-02	5.02E-02		pCi/g
Zr-95	10/15/13	U	4.56E-02	5.53E-02	1.17E-01		pCi/g
Nb-94	10/15/13	U	7.29E-04	1.80E-02	3.54E-02		pCi/g
Nb-95	10/15/13	U	2.90E-02	3.24E-02	6.77E-02		pCi/g
Ru-106	10/15/13	U	-8.65E-02	1.76E-01	3.16E-01		pCi/g
Ag-110m	10/15/13	U	-6.88E-03	3.38E-02	6.35E-02		pCi/g
Sn-113	10/15/13	U	1.07E-02	2.52E-02	5.18E-02		pCi/g
Sb-124	10/15/13	U	-8.43E-02	5.48E-02	5.89E-02		pCi/g
Sb-125	10/15/13	U	-4.70E-03	4.22E-02	8.23E-02		pCi/g
Cs-134	10/15/13	U	-1.05E-03	2.11E-02	4.09E-02		pCi/g
Cs-136	10/15/13	U	1.66E-01	6.07E-01	1.19E+00		pCi/g
Cs-137	10/15/13	U	-1.56E-02	1.77E-02	3.02E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	1.78E-03	1.78E-02	3.60E-02		pCi/g
Ba-140	10/15/13	U	1.49E-01	1.48E+00	2.88E+00		pCi/g
Ce-139	10/15/13	U	9.71E-03	1.38E-02	2.88E-02		pCi/g
Ce-141	10/15/13	U	2.45E-02	7.19E-02	1.33E-01		pCi/g
Ce-144	10/15/13	U	-6.75E-02	9.23E-02	1.74E-01		pCi/g
Nd-147	10/15/13	U	-4.98E+00	4.34E+00	7.38E+00		pCi/g
Pm-144	10/15/13	U	-1.85E-02	1.81E-02	3.26E-02		pCi/g
Pm-146	10/15/13	U	1.29E-03	1.83E-02	3.62E-02		pCi/g
Eu-152	10/15/13	3	4.81E-01	8.76E-02	7.79E-02		pCi/g
Eu-154	10/15/13	U	2.01E-02	4.26E-02	8.98E-02		pCi/g
Eu-155	10/15/13	U	9.47E-03	4.21E-02	8.82E-02		pCi/g
Ir-192	10/15/13	U	-5.37E-03	2.12E-02	4.22E-02		pCi/g
Hg-203	10/15/13	U	2.83E-02	3.10E-02	6.35E-02		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

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U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614016
Client Sample ID: SU 1.2 #2
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 15, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	4.23E-02	3.83E-02	3.09E-02		pCi/g
Pb-210	10/15/13	U	3.53E-01	2.65E+00	5.25E+00		pCi/g
Pb-212	10/15/13	3	2.63E-01	5.56E-02	4.99E-02		pCi/g
Pb-214	10/15/13	U	-5.76E-03	3.51E-02	6.82E-02		pCi/g
Bi-212	10/15/13	U	2.98E-01	3.28E-01	4.87E-01		pCi/g
Bi-214	10/15/13	3,U	6.28E-02	5.09E-02	7.34E-02		pCi/g
Ra-228	10/15/13	3,U	1.37E-01	9.33E-02	1.85E-01		pCi/g
Ac-228	10/15/13	3,U	1.37E-01	9.33E-02	1.85E-01		pCi/g
Th-234	10/15/13	U	3.22E-02	1.65E+00	1.31E+00		pCi/g
U-235	10/15/13	U	3.81E-03	8.26E-02	1.53E-01		pCi/g
U-238	10/15/13	U	3.22E-02	1.65E+00	1.31E+00		pCi/g
Np-239	10/15/13	U	4.73E-02	1.77E-01	3.32E-01		pCi/g
Am-241	10/15/13	U	2.05E-02	8.09E-02	1.62E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

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3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614016

Client: TLG Services, Inc.

Client Sample ID: SU 1.2 #2

Collect Date: August 15, 2013

Matrix: Misc Solid

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Co-60	7.72E-01	pCi/g	049.568
Eu-152	4.81E-01	pCi/g	030.855
Pb-212	2.63E-01	pCi/g	016.865
Tl-208	4.23E-02	pCi/g	002.712
Total Activity:	1.56E+00	Total % Abundance:	100.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614017
 Client Sample ID: SU 1.2 #3
 Matrix: Misc Solid
 Geometry Received:

Client: TLG Services, Inc.
 Collect Date: August 16, 2013
 Receive Date: October 03, 2013
 Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	2.41E-02	2.08E-01	4.03E-01		pCi/g
Na-22	10/15/13	U	3.51E-05	1.71E-02	2.73E-02		pCi/g
K-40	10/15/13	U	7.96E-02	1.50E-01	2.91E-01		pCi/g
Cr-51	10/15/13	U	-4.51E-02	3.91E-01	7.42E-01		pCi/g
Mn-54	10/15/13	U	1.51E-02	1.77E-02	3.42E-02		pCi/g
Fe-59	10/15/13	U	1.43E-02	8.05E-02	1.40E-01		pCi/g
Co-56	10/15/13	U	1.49E-02	2.67E-02	5.15E-02		pCi/g
Co-57	10/15/13	3,U	1.06E-02	1.02E-02	2.14E-02		pCi/g
Co-58	10/15/13	U	9.20E-03	2.75E-02	5.03E-02		pCi/g
Co-60	10/15/13	3	8.68E-01	6.23E-02	2.32E-02		pCi/g
Zn-65	10/15/13	U	-5.94E-02	5.48E-02	7.58E-02		pCi/g
Y-88	10/15/13	U	-4.27E-03	2.11E-02	3.96E-02		pCi/g
Zr-95	10/15/13	U	-5.11E-04	4.55E-02	8.62E-02		pCi/g
Nb-94	10/15/13	U	-6.84E-03	1.63E-02	2.55E-02		pCi/g
Nb-95	10/15/13	U	-1.18E-02	2.80E-02	5.10E-02		pCi/g
Ru-106	10/15/13	U	6.95E-02	1.35E-01	2.71E-01		pCi/g
Ag-110m	10/15/13	3,U	2.89E-02	2.62E-02	5.21E-02		pCi/g
Sn-113	10/15/13	U	-8.22E-03	2.15E-02	4.11E-02		pCi/g
Sb-124	10/15/13	U	-4.81E-02	4.64E-02	7.27E-02		pCi/g
Sb-125	10/15/13	U	-1.59E-02	3.55E-02	6.69E-02		pCi/g
Cs-134	10/15/13	U	8.92E-03	1.77E-02	3.44E-02		pCi/g
Cs-136	10/15/13	U	1.79E-01	5.07E-01	9.74E-01		pCi/g
Cs-137	10/15/13	U	5.18E-03	1.47E-02	2.90E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	-9.52E-03	1.74E-02	2.87E-02		pCi/g
Ba-140	10/15/13	U	-9.07E-01	1.16E+00	2.06E+00		pCi/g
Ce-139	10/15/13	U	-2.90E-03	1.33E-02	2.51E-02		pCi/g
Ce-141	10/15/13	U	1.84E-02	5.64E-02	1.12E-01		pCi/g
Ce-144	10/15/13	U	-1.99E-02	7.81E-02	1.51E-01		pCi/g
Nd-147	10/15/13	U	-5.94E-01	3.69E+00	6.90E+00		pCi/g
Pm-144	10/15/13	U	9.44E-03	1.44E-02	2.88E-02		pCi/g
Pm-146	10/15/13	U	1.62E-03	1.56E-02	3.04E-02		pCi/g
Eu-152	10/15/13	UI	0.00E+00	6.02E-02	7.32E-02		pCi/g
Eu-154	10/15/13	U	-3.98E-04	4.74E-02	7.53E-02		pCi/g
Eu-155	10/15/13	U	-2.15E-02	3.57E-02	6.97E-02		pCi/g
Ir-192	10/15/13	U	-8.66E-03	1.98E-02	3.66E-02		pCi/g
Hg-203	10/15/13	U	7.74E-03	2.75E-02	5.40E-02		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

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UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614017
Client Sample ID: SU 1.2 #3
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 16, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	3	3.46E-02	2.48E-02	2.70E-02		pCi/g
Pb-210	10/15/13	U	9.69E-02	2.11E+00	4.02E+00		pCi/g
Pb-212	10/15/13	3	1.59E-01	5.65E-02	3.98E-02		pCi/g
Pb-214	10/15/13	U	4.08E-02	5.63E-02	5.92E-02		pCi/g
Bi-212	10/15/13	U	1.69E-01	2.12E-01	4.22E-01		pCi/g
Bi-214	10/15/13	U	5.52E-02	5.91E-02	6.95E-02		pCi/g
Ra-228	10/15/13	U	1.20E-01	1.35E-01	1.50E-01		pCi/g
Ac-228	10/15/13	U	1.20E-01	1.35E-01	1.50E-01		pCi/g
Th-234	10/15/13	U	3.88E-01	1.16E+00	1.08E+00		pCi/g
U-235	10/15/13	U	7.61E-03	7.97E-02	1.38E-01		pCi/g
U-238	10/15/13	U	3.88E-01	1.16E+00	1.08E+00		pCi/g
Np-239	10/15/13	U	-2.75E-02	1.44E-01	2.84E-01		pCi/g
Am-241	10/15/13	U	4.90E-02	6.90E-02	1.40E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.

2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.

3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.

UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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

10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614017

Client: TLG Services, Inc.

Client Sample ID: SU 1.2 #3

Collect Date: August 16, 2013

Matrix: Misc Solid

Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Co-60	8.68E-01	pCi/g	081.792
Pb-212	1.59E-01	pCi/g	014.949
Tl-208	3.46E-02	pCi/g	003.259
Total Activity:	1.06E+00	Total % Abundance:	100.00

GEL LABORATORIES LLC

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

10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614018
 Client Sample ID: SU 1.2 #4
 Matrix: Misc Solid
 Geometry Received:

Client: TLG Services, Inc.
 Collect Date: August 16, 2013
 Receive Date: October 03, 2013
 Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Gamma Spec							
Be-7	10/15/13	U	6.36E-02	2.17E-01	4.18E-01		pCi/g
Na-22	10/15/13	U	-4.30E-03	1.35E-02	2.46E-02		pCi/g
K-40	10/15/13	U	4.10E-03	1.78E-01	2.27E-01		pCi/g
Cr-51	10/15/13	U	6.11E-02	5.97E-01	8.47E-01		pCi/g
Mn-54	10/15/13	U	-3.89E-03	2.04E-02	3.16E-02		pCi/g
Fe-59	10/15/13	U	-6.00E-02	7.76E-02	1.36E-01		pCi/g
Co-56	10/15/13	U	5.93E-03	2.84E-02	5.19E-02		pCi/g
Co-57	10/15/13	UI	0.00E+00	2.79E-02	2.22E-02		pCi/g
Co-58	10/15/13	U	-1.33E-02	2.45E-02	4.38E-02		pCi/g
Co-60	10/15/13	3	7.64E-01	5.60E-02	2.58E-02		pCi/g
Zn-65	10/15/13	U	2.11E-02	4.38E-02	8.40E-02		pCi/g
Y-88	10/15/13	U	5.98E-03	1.90E-02	3.81E-02		pCi/g
Zr-95	10/15/13	U	2.33E-02	5.12E-02	9.70E-02		pCi/g
Nb-94	10/15/13	U	-4.71E-03	1.41E-02	2.60E-02		pCi/g
Nb-95	10/15/13	U	2.17E-02	2.69E-02	5.32E-02		pCi/g
Ru-106	10/15/13	U	7.56E-02	1.40E-01	2.78E-01		pCi/g
Ag-110m	10/15/13	U	-3.51E-03	2.88E-02	4.48E-02		pCi/g
Sn-113	10/15/13	U	-1.07E-02	2.41E-02	4.48E-02		pCi/g
Sb-124	10/15/13	U	-5.20E-04	4.99E-02	9.69E-02		pCi/g
Sb-125	10/15/13	U	-2.29E-02	3.60E-02	6.55E-02		pCi/g
Cs-134	10/15/13	U	1.17E-02	1.81E-02	3.52E-02		pCi/g
Cs-136	10/15/13	U	-1.47E-01	4.58E-01	8.42E-01		pCi/g
Cs-137	10/15/13	U	5.95E-03	1.42E-02	2.74E-02	1.00E-01	pCi/g
Ba-133	10/15/13	U	-1.75E-02	1.86E-02	2.85E-02		pCi/g
Ba-140	10/15/13	U	-9.56E-02	1.15E+00	2.22E+00		pCi/g
Ce-139	10/15/13	U	-8.92E-05	1.39E-02	2.72E-02		pCi/g
Ce-141	10/15/13	UI	0.00E+00	2.71E-01	1.13E-01		pCi/g
Ce-144	10/15/13	U	-1.52E-02	8.26E-02	1.63E-01		pCi/g
Nd-147	10/15/13	U	5.98E-01	3.50E+00	6.94E+00		pCi/g
Pm-144	10/15/13	3,U	1.71E-02	1.50E-02	3.05E-02		pCi/g
Pm-146	10/15/13	U	5.12E-03	1.76E-02	3.39E-02		pCi/g
Eu-152	10/15/13	UI	0.00E+00	8.83E-02	9.50E-02		pCi/g
Eu-154	10/15/13	U	-1.10E-02	3.75E-02	6.87E-02		pCi/g
Eu-155	10/15/13	U	2.99E-02	3.91E-02	8.23E-02		pCi/g
Ir-192	10/15/13	U	-5.55E-03	2.39E-02	3.97E-02		pCi/g
Hg-203	10/15/13	U	2.28E-02	5.15E-02	5.47E-02		pCi/g

- Note(s):** 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
 2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
 3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
 UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES LLC

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10 CFR Part 50/61 Certificate of Analysis

GEL Sample ID: 334614018
Client Sample ID: SU 1.2 #4
Matrix: Misc Solid
Geometry Received:

Client: TLG Services, Inc.
Collect Date: August 16, 2013
Receive Date: October 03, 2013
Report Date: October 28, 2013

Analyte	Run Date	Qualifier	Activity ²	2 Sigma Uncertainty	MDA ¹	RL	Units
Tl-208	10/15/13	UI	0.00E+00	2.73E-02	2.72E-02		pCi/g
Pb-210	10/15/13	U	4.72E-01	3.32E+00	2.92E+00		pCi/g
Pb-212	10/15/13	UI	0.00E+00	5.90E-02	6.75E-02		pCi/g
Pb-214	10/15/13	U	-1.34E-02	3.21E-02	5.18E-02		pCi/g
Bi-212	10/15/13	U	6.26E-02	2.04E-01	3.92E-01		pCi/g
Bi-214	10/15/13	U	-1.30E-02	3.32E-02	6.04E-02		pCi/g
Ra-228	10/15/13	UI	0.00E+00	1.47E-01	1.58E-01		pCi/g
Ac-228	10/15/13	UI	0.00E+00	1.47E-01	1.58E-01		pCi/g
Th-234	10/15/13	U	-1.74E-01	5.54E-01	1.12E+00		pCi/g
U-235	10/15/13	UI	0.00E+00	3.31E-01	1.49E-01		pCi/g
U-238	10/15/13	U	-1.74E-01	5.54E-01	1.12E+00		pCi/g
Np-239	10/15/13	U	-1.23E-01	1.87E-01	3.16E-01		pCi/g
Am-241	10/15/13	U	-2.29E-02	5.93E-02	1.15E-01		pCi/g

Note(s): 1. Calculated MDAs are a-posteriori values at the 95% confidence level.
2. Activity is reported on a dry weight basis unless otherwise indicated in the case narrative and is decay corrected to the sample collect date.
3. Results are statistically positive at the 95% confidence level. (activity is greater than or equal to the two sigma uncertainty)

U Analyte was analyzed for, but not detected above the MDL, MDA, or LOD.
UI Gamma Spectroscopy—Uncertain identification

GEL LABORATORIES, LLC

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10 CFR Part 50/61 Isotope Abundance Report

GEL Sample ID: 334614018
Client Sample ID: SU 1.2 #4
Matrix: Misc Solid

Client: TLG Services, Inc.
Collect Date: August 16, 2013
Receive Date: October 03, 2013

Analyte	Activity	Units	% Abundance
Gamma Spec			
Co-60	7.64E-01	pCi/g	100.000
Total Activity:		7.64E-01	Total % Abundance: 100.00

QC Summary

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QC Summary

Report Date: October 28, 2013

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TLG Services, Inc.
148 New Milford Rd. East
Bridgewater, Connecticut

Contact: Mr. Jay Adler

Workorder: 334614

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1336621										
QC1202961675	334614002	DUP									
Actinium-228		1.47		1.16	pCi/g	23.6*		(0%-20%)	MXR1	10/15/13	14:40
	Uncertainty	+/-0.217		+/-0.265							
Americium-241	U	0.0677	U	0.0743	pCi/g	N/A		N/A			
	Uncertainty	+/-0.161		+/-0.0948							
Antimony-124	U	0.0916	U	-0.0372	pCi/g	N/A		N/A			
	Uncertainty	+/-0.104		+/-0.101							
Antimony-125	U	0.0728	U	0.0329	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0751		+/-0.0724							
Barium-133	U	-0.0127	U	-0.00507	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0377		+/-0.040							
Barium-140	U	2.93	U	-0.355	pCi/g	N/A		N/A			
	Uncertainty	+/-3.02		+/-3.14							
Beryllium-7	U	-0.132	U	0.274	pCi/g	N/A		N/A			
	Uncertainty	+/-0.460		+/-0.473							
Bismuth-212		1.15		1.14	pCi/g	1.31		(0% - 100%)			
	Uncertainty	+/-0.744		+/-0.743							
Bismuth-214		1.11		1.24	pCi/g	10.9		(0%-20%)			
	Uncertainty	+/-0.140		+/-0.136							
Cerium-139	U	-0.0155	U	-0.0016	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0301		+/-0.0297							
Cerium-141	U	0.0525	U	-0.11	pCi/g	N/A		N/A			
	Uncertainty	+/-0.157		+/-0.143							
Cerium-144	U	0.0633	U	0.0983	pCi/g	N/A		N/A			
	Uncertainty	+/-0.183		+/-0.201							
Cesium-134	UI	0.00	UI	0.00	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0755		+/-0.0534							
Cesium-136	U	-0.318	U	0.153	pCi/g	N/A		N/A			
	Uncertainty	+/-0.968		+/-1.14							
Cesium-137	U	-0.00567	U	-0.0226	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0283		+/-0.0359							
Chromium-51	U	0.152	U	-0.615	pCi/g	N/A		N/A			
	Uncertainty	+/-1.03		+/-1.04							
Cobalt-56	U	-0.0171	U	0.00341	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0482		+/-0.0555							
Cobalt-57	UI	0.00	UI	0.00	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0395		+/-0.0491							
Cobalt-58	U	-0.031	UI	0.00	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0505		+/-0.152							
Cobalt-60		0.107		0.0624	pCi/g	52.5		(0% - 100%)			
	Uncertainty	+/-0.0489		+/-0.0536							

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch 1336621											
Europium-152		0.615		0.660	pCi/g	7.00		(0% - 100%)	MXR1	10/15/13	14:40
	Uncertainty	+/-0.123		+/-0.129							
Europium-154	U	-0.00225	U	-0.0213	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0935		+/-0.108							
Europium-155	U	0.0282	U	-0.00966	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0883		+/-0.0843							
Iridium-192	U	-0.0215	U	0.0154	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0414		+/-0.0456							
Iron-59	U	0.0351	U	-0.0141	pCi/g	N/A		N/A			
	Uncertainty	+/-0.184		+/-0.167							
Lead-210	U	0.924		3.28	pCi/g	88.0		(0% - 100%)			
	Uncertainty	+/-4.21		+/-2.90							
Lead-212		1.44		1.43	pCi/g	0.418		(0%-20%)			
	Uncertainty	+/-0.104		+/-0.104							
Lead-214		1.53		1.48	pCi/g	3.20		(0%-20%)			
	Uncertainty	+/-0.169		+/-0.131							
Manganese-54	U	0.0234	U	-0.00235	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0354		+/-0.0343							
Mercury-203	U	0.0752	U	-0.0124	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0679		+/-0.0731							
Neodymium-147	U	-2.34	U	-6.01	pCi/g	N/A		N/A			
	Uncertainty	+/-8.44		+/-10.0							
Neptunium-239	U	-0.301	U	-0.103	pCi/g	N/A		N/A			
	Uncertainty	+/-0.384		+/-0.367							
Niobium-94	U	0.0128	U	0.000281	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0265		+/-0.0298							
Niobium-95	U	-0.0271	U	0.0322	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0724		+/-0.0669							
Potassium-40		19.3		19.1	pCi/g	1.09		(0%-20%)			
	Uncertainty	+/-1.32		+/-1.21							
Promethium-144	U	0.00658	U	0.00715	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0284		+/-0.0346							
Promethium-146	U	0.0242	U	-0.00326	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0316		+/-0.0403							
Radium-228		1.47		1.16	pCi/g	23.6*		(0%-20%)			
	Uncertainty	+/-0.217		+/-0.265							
Ruthenium-106	U	0.404	U	-0.0578	pCi/g	N/A		N/A			
	Uncertainty	+/-0.540		+/-0.282							
Silver-110m	U	-0.0459	U	-0.0332	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0422		+/-0.048							
Sodium-22	U	-0.000815	U	-0.00734	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0338		+/-0.039							

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1336621										
Thallium-208		0.380		0.370	pCi/g	2.67		(0%-20%)			
	Uncertainty	+/-0.0791		+/-0.0711							
Thorium-234		3.86		2.78	pCi/g	32.4		(0% - 100%)	MXR1	10/15/13	14:40
	Uncertainty	+/-2.39		+/-1.98							
Tin-113	U	-0.0113	U	0.00799	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0487		+/-0.0477							
Uranium-235	U	0.205	U	0.038	pCi/g	N/A		N/A			
	Uncertainty	+/-0.235		+/-0.163							
Uranium-238		3.86		2.78	pCi/g	32.4		(0% - 100%)			
	Uncertainty	+/-2.39		+/-1.98							
Yttrium-88	U	0.00123	U	-0.0103	pCi/g	N/A		N/A			
	Uncertainty	+/-0.0288		+/-0.0312							
Zinc-65	U	0.0606	UI	0.00	pCi/g	N/A		N/A			
	Uncertainty	+/-0.142		+/-0.115							
Zirconium-95	U	0.0596	U	-0.0255	pCi/g	N/A		N/A			
	Uncertainty	+/-0.102		+/-0.110							
QC1202961676	LCS										
Actinium-228			U	1.75	pCi/g					10/15/13	14:41
	Uncertainty			+/-2.44							
Americium-241	491			565	pCi/g		115	(75%-125%)			
	Uncertainty			+/-8.40							
Antimony-124			U	-0.19	pCi/g						
	Uncertainty			+/-0.438							
Antimony-125			U	-0.0307	pCi/g						
	Uncertainty			+/-1.25							
Barium-133			U	0.0333	pCi/g						
	Uncertainty			+/-0.518							
Barium-140			U	-1.68	pCi/g						
	Uncertainty			+/-1.64							
Beryllium-7			U	-2.65	pCi/g						
	Uncertainty			+/-3.90							
Bismuth-212			U	2.19	pCi/g						
	Uncertainty			+/-6.55							
Bismuth-214			U	-0.185	pCi/g						
	Uncertainty			+/-0.853							
Cerium-139				2.40	pCi/g						
	Uncertainty			+/-0.415							
Cerium-141			U	0.0139	pCi/g						
	Uncertainty			+/-0.400							
Cerium-144			U	0.0487	pCi/g						
	Uncertainty			+/-1.93							
Cesium-134			U	0.504	pCi/g						
	Uncertainty			+/-0.565							
Cesium-136			U	0.0663	pCi/g						
	Uncertainty										

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1336621										
				+/-0.836							
Cesium-137	192			184	pCi/g		95.8	(75%-125%)	MXR1	10/15/13	14:41
	Uncertainty			+/-1.87							
Chromium-51			U	1.21	pCi/g						
	Uncertainty			+/-3.13							
Cobalt-56			U	-0.59	pCi/g						
	Uncertainty			+/-0.547							
Cobalt-57				15.7	pCi/g						
	Uncertainty			+/-0.540							
Cobalt-58			U	0.266	pCi/g						
	Uncertainty			+/-0.507							
Cobalt-60	237			220	pCi/g		92.8	(75%-125%)			
	Uncertainty			+/-2.30							
Europium-152			U	0.512	pCi/g						
	Uncertainty			+/-1.19							
Europium-154			U	0.694	pCi/g						
	Uncertainty			+/-0.852							
Europium-155			U	-0.30	pCi/g						
	Uncertainty			+/-1.06							
Iridium-192			U	-0.399	pCi/g						
	Uncertainty			+/-0.369							
Iron-59			U	0.625	pCi/g						
	Uncertainty			+/-1.19							
Lead-210				5490	pCi/g						
	Uncertainty			+/-158							
Lead-212			U	0.0886	pCi/g						
	Uncertainty			+/-0.596							
Lead-214			U	-0.419	pCi/g						
	Uncertainty			+/-0.894							
Manganese-54			U	-0.36	pCi/g						
	Uncertainty			+/-0.525							
Mercury-203			U	-0.181	pCi/g						
	Uncertainty			+/-0.345							
Neodymium-147			U	2.18	pCi/g						
	Uncertainty			+/-3.14							
Neptunium-239			U	0.640	pCi/g						
	Uncertainty			+/-4.42							
Niobium-94			U	0.245	pCi/g						
	Uncertainty			+/-0.418							
Niobium-95			U	0.0959	pCi/g						
	Uncertainty			+/-0.471							
Potassium-40			U	0.221	pCi/g						
	Uncertainty			+/-2.04							

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QC Summary

Workorder: 334614

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1336621										
Promethium-144			U	-0.279	pCi/g						
	Uncertainty			+/-0.418							
Promethium-146			U	-0.37	pCi/g				MXR1	10/15/13	14:41
	Uncertainty			+/-0.619							
Radium-228			U	1.75	pCi/g						
	Uncertainty			+/-2.44							
Ruthenium-106			U	-4.38	pCi/g						
	Uncertainty			+/-4.61							
Silver-110m			U	-0.124	pCi/g						
	Uncertainty			+/-0.821							
Sodium-22			U	0.236	pCi/g						
	Uncertainty			+/-0.298							
Thallium-208			U	0.0373	pCi/g						
	Uncertainty			+/-0.442							
Thorium-234			U	-43.9	pCi/g						
	Uncertainty			+/-20.6							
Tin-113				1.33	pCi/g						
	Uncertainty			+/-0.694							
Uranium-235			U	0.686	pCi/g						
	Uncertainty			+/-1.70							
Uranium-238			U	-43.9	pCi/g						
	Uncertainty			+/-20.6							
Yttrium-88				1.38	pCi/g						
	Uncertainty			+/-0.451							
Zinc-65				49.6	pCi/g						
	Uncertainty			+/-2.65							
Zirconium-95			U	1.11	pCi/g						
	Uncertainty			+/-0.923							
QC1202961674	MB										
Actinium-228			U	-0.0156	pCi/g					10/15/13	14:39
	Uncertainty			+/-0.0512							
Americium-241			U	0.0537	pCi/g						
	Uncertainty			+/-0.0799							
Antimony-124			U	0.0076	pCi/g						
	Uncertainty			+/-0.0304							
Antimony-125			U	0.0185	pCi/g						
	Uncertainty			+/-0.0288							
Barium-133			U	0.0024	pCi/g						
	Uncertainty			+/-0.0156							
Barium-140			U	-0.0097	pCi/g						
	Uncertainty			+/-0.0396							
Beryllium-7			U	0.00758	pCi/g						
	Uncertainty			+/-0.099							
Bismuth-212			U	0.112	pCi/g						
	Uncertainty										

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1336621										
				+/-0.174							
Bismuth-214			U	-0.00775	pCi/g				MXR1	10/15/13	14:39
				Uncertainty							
				+/-0.0271							
Cerium-139			U	0.00151	pCi/g						
				Uncertainty							
				+/-0.00934							
Cerium-141			U	0.00433	pCi/g						
				Uncertainty							
				+/-0.0367							
Cerium-144			UI	0.00	pCi/g						
				Uncertainty							
				+/-0.129							
Cesium-134			U	-0.00466	pCi/g						
				Uncertainty							
				+/-0.0114							
Cesium-136			U	0.00572	pCi/g						
				Uncertainty							
				+/-0.0177							
Cesium-137			U	0.000936	pCi/g						
				Uncertainty							
				+/-0.0177							
Chromium-51			U	0.00972	pCi/g						
				Uncertainty							
				+/-0.0838							
Cobalt-56			U	-0.00281	pCi/g						
				Uncertainty							
				+/-0.0109							
Cobalt-57			U	-0.0018	pCi/g						
				Uncertainty							
				+/-0.00747							
Cobalt-58			U	-0.00495	pCi/g						
				Uncertainty							
				+/-0.0111							
Cobalt-60			U	-0.0107	pCi/g						
				Uncertainty							
				+/-0.0147							
Europium-152			U	-0.0272	pCi/g						
				Uncertainty							
				+/-0.035							
Europium-154			U	-0.00512	pCi/g						
				Uncertainty							
				+/-0.0329							
Europium-155			U	-0.0181	pCi/g						
				Uncertainty							
				+/-0.0316							
Iridium-192			U	0.00201	pCi/g						
				Uncertainty							
				+/-0.00978							
Iron-59			U	-0.00625	pCi/g						
				Uncertainty							
				+/-0.0252							
Lead-210			U	-1.72	pCi/g						
				Uncertainty							
				+/-3.08							
Lead-212			U	0.0111	pCi/g						
				Uncertainty							
				+/-0.0409							
Lead-214			U	-0.0311	pCi/g						
				Uncertainty							
				+/-0.0306							
Manganese-54			U	0.00843	pCi/g						
				Uncertainty							
				+/-0.0103							

GEL LABORATORIES LLC

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QC Summary

Workorder: 334614

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Rad Gamma Spec											
Batch	1336621										
Mercury-203	Uncertainty		U	-0.00558	pCi/g						
				+/-0.0115							
Neodymium-147	Uncertainty		U	0.0865	pCi/g				MXR1	10/15/13	14:39
				+/-0.130							
Neptunium-239	Uncertainty		U	0.00651	pCi/g						
				+/-0.126							
Niobium-94	Uncertainty		U	-0.0065	pCi/g						
				+/-0.0126							
Niobium-95	Uncertainty		U	0.00527	pCi/g						
				+/-0.0109							
Potassium-40	Uncertainty		U	0.140	pCi/g						
				+/-0.159							
Promethium-144	Uncertainty		U	-0.00589	pCi/g						
				+/-0.014							
Promethium-146	Uncertainty		U	0.00216	pCi/g						
				+/-0.0141							
Radium-228	Uncertainty		U	-0.0156	pCi/g						
				+/-0.0512							
Ruthenium-106	Uncertainty		U	-0.0547	pCi/g						
				+/-0.105							
Silver-110m	Uncertainty		U	-0.000892	pCi/g						
				+/-0.0131							
Sodium-22	Uncertainty		U	-0.000374	pCi/g						
				+/-0.0112							
Thallium-208	Uncertainty		U	0.00121	pCi/g						
				+/-0.0128							
Thorium-234	Uncertainty		U	-0.141	pCi/g						
				+/-0.704							
Tin-113	Uncertainty		U	-0.00656	pCi/g						
				+/-0.0137							
Uranium-235	Uncertainty		U	0.0184	pCi/g						
				+/-0.156							
Uranium-238	Uncertainty		U	-0.141	pCi/g						
				+/-0.704							
Yttrium-88	Uncertainty		U	0.00392	pCi/g						
				+/-0.0101							
Zinc-65	Uncertainty		U	-0.00685	pCi/g						
				+/-0.0257							
Zirconium-95	Uncertainty		U	0.000959	pCi/g						
				+/-0.0188							

Notes:

Counting Uncertainty is calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

GEL LABORATORIES LLC

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QC Summary

Workorder: 334614

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
**	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	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, 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.

^ 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.

Chain of Custody

Client Name: TLG SERVICES

Project/Site Name: Worcester Polytechnic

Address: 148 New Milford Rd, East, Bridgewater, CT

Collected by: Jay Adler

Send Results To: Jay Adler

Phone #: 860-355-2300

Fax #:

Sample ID	Date Collected (mm-dd-yy)	Time Collected (Military) (hhmm)	QC Code (a)	Field Filtered (b)	Sample Matrix (c)	Should this sample be considered:		Sample Analysis Requested (d)		Preservative Type (e)	Comments
						Radioactive	TSCA Regulated	Total number of containers	(f)		
SU1.6 #1	08-13-13	NA	G		SO			1	DOE HASL		Soil
SU1.6 #2	08-13-13	NA	G		SO			1	DOE HASL		Soil
SU1.6 #3	08-13-13	NA	G		SO			1	DOE HASL		Soil
SU1.6 #4	08-13-13	NA	G		SO			1	DOE HASL		Soil
SU1.3 #1 0-15cm	08-22-13	NA	G		SS			1	DOE HASL		CONCRETE CORE - TC
SU1.3 #3 0-15cm	08-22-13	NA	G		SS			1	DOE HASL		CONCRETE CORE - TC
SU1.4 #1 0-15cm	08-13-13	NA	G		SS			1	DOE HASL		CONCRETE CORE - TC
SU1.4 #2 0-15cm	08-13-13	NA	G		SS			1	DOE HASL		CONCRETE CORE - TC
SU1.4 #3 0-15cm	08-14-13	NA	G		SS			1	DOE HASL		CONCRETE CORE - TC
SU1.4 #4 0-15cm	08-14-13	NA	G		SS			1	DOE HASL		CONCRETE CORE - TC

TAT Requested: Normal: ☒ Rush: ☐ Specify: (Subject to Surcharge) Fax Results: Yes / No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Sample Collection Time Zone: Eastern Pacific Other

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

NONE

Chain of Custody Signatures				Sample Shipping and Delivery Details			
Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time	GEL PM:	Date Shipped:
Jay Adler	10/1/13	07:23	Jay Adler	10/3/13	08:40		
						Method of Shipment:	
						Airbill #:	
						Airbill #:	

Chain of Custody Number = Client Determined

1.) 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

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

3.) Matrix Codes: DW=Drinking Water, GW=Groundwater, SW=Surface Water, WW=Waste Water, W=Water, ML=Misc Liquid, SO=Soil, SED=Sediment, SL=Sludge, SS=Solid Waste, O=Oil, F=Filter, P=Wipe, U=Urine, F=Feet, N=N

4.) Sample Analysis Requested: Analytical method requested (i.e. 8260B6010B/7470A) and number of containers provided for each (i.e. 8260B - 3, 6010B/7470A - 1).

5.) 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

For Lab Receiving Use Only

Custody Seal Intact?

YES

Cooler Temp:

C

WHITE = LABORATORY
YELLOW = FILE
PINK = CLIENT

Client Name: TLG Services

Phone #: 560-355-2300

Project/Site Name: Worcester Polytechnic

Fax #: 560-355-2300

Address: 148 New Milford Rd. East, Bridgewater, CT

06752

Collected by: Jay Adler

Send Results To: JAY Adler

Sample ID	*Date Collected (mm-dd-yy)	*Time Collected (Military) (hhmm)	QC Code (b) (hhmm)	Field Filtered (b) Matrix (a)	Should this sample be considered:		Total number of containers	Sample Analysis Requested (5) (Fill in the number of containers for each test)					Comments
					Radioactive	TSCA Regulated		1	2	3	4	5	
SU1.1 #1	08-15-13	NA	G	SS			1						NORTH RW WALL - ALUM. LINER
SU1.1 #2	08-15-13	NA	G	SS			1						SOUTH RW WALL - ALUM. LINER
SU1.1 #3	08-15-13	NA	G	SS			1						END OF ALUM. BEAM POST LINER
SU1.1 #4	08-14-13	NA	G	SS			1						WESTRX WALL - ALUM. LINER
SU1.2 #1	08-09-13	NA	G	SS			1						Therm. Col. Floor - ALUM. LINER
SU1.2 #2	08-15-13	NA	G	SS			1						Therm. Col. North Wall - ALUM. LINER
SU1.2 #3	08-16-13	NA	G	SS			1						Therm. Col. South Wall - ALUM. LINER
SU1.2 #4	08-16-13	NA	G	SS			1						Therm. Col. Ceiling - ALUM. LINER

TAT Requested: Normal:

Rush:

Specify:

(Subject to Surcharge)

Fax Results:

Yes

No

Circle Deliverable: C of A / QC Summary / Level 1 / Level 2 / Level 3 / Level 4

Remarks: Are there any known hazards applicable to these samples? If so, please list the hazards

Chain of Custody Signatures				Sample Shipping and Delivery Details			
Relinquished By (Signed)	Date	Time	Received by (signed)	Date	Time	GEL PM:	
Jay Adler	09/11/13	07:23	Jay Adler	10-31-13	0840		
						Method of Shipment:	Date Shipped:
						Airbill #:	
						Airbill #:	

1.) Chain of Custody Number = Client Determined

2.) 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

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

4.) Matrix Codes: DW = Drinking Water, GW = Groundwater, SW = Surface Water, WW = Waste Water, W = Water, ML = Mixture Liquid, SO = Soil, SED = Sediment, SL = Sludge, SS = Solid Waste, O = Oil, F = Filter, P = Wipe, U = Urine, F = Fecal, N = N

5.) Sample Analysis Requested: Analytical method requested (i.e. 8260B/6010B/4700A) and number of containers provided for each (i.e. 8260B - 3, 6010B/4700A - 1)

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

WHITE = LABORATORY

YELLOW = FILE

PINK = CLIENT

For Lab Receiving Use Only

Custody Seal Intact?

YES

NO

Cooler Temp:

C



SAMPLE RECEIPT & REVIEW FORM

Client: <u>TLG Services</u>		SDG/AR/COC/Work Order: <u>334614</u>
Received By: <u>[Signature]</u>		Date Received: <u>10.3.13</u>
Suspected Hazard Information	Yes <input type="checkbox"/> No <input type="checkbox"/>	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?	<input type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <u>40cpm</u>
Classified Radioactive II or III by RSO?	<input type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?	<input type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?	<input type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?	<input type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?	<input type="checkbox"/>	

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 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Preservation Method: Ice bags Blue ice Dry ice <input checked="" type="checkbox"/> None Other (describe) *all temperatures are recorded in Celsius <u>24°C</u>
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Temperature Device Serial #: <u>41502182</u> Secondary Temperature Device Serial # (If Applicable):
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
4 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)
5 Samples requiring chemical preservation at proper pH?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Sample ID's and containers affected:
7 Are Encore containers present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
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"/>	Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sample ID's affected: <u>no times on Containers</u>
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sample ID's affected:
12 Are sample containers identifiable as GEL provided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
14 Carrier and tracking number.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Circle Applicable: <input checked="" type="checkbox"/> FedEx Air <input type="checkbox"/> FedEx Ground <input type="checkbox"/> UPS <input type="checkbox"/> Field Services <input type="checkbox"/> Courier <input type="checkbox"/> Other <u>7968 1827 5610</u> <u>7968 1849 7849</u>

Comments (Use Continuation Form if needed):

Laboratory Certifications

List of current GEL Certifications as of 28 October 2013

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-12-00283, P330-12-00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122013-2
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
Plant Material Permit	PDEP-12-00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-13-8
Utah NELAP	SC000122013-10
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790