

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R1.1
Sample ID: 386515001

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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

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 Suite 112
 Buffalo, New York 14228
 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Report Date: March 8, 2016

Client Sample ID: 4.3.B.R.1.2
 Sample ID: 392031001
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 23.2%

Project: MJWC00115
 Client ID: MJWC001

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

Gamma with Ingrowth "Dry Weight Corrected"

Actinium-227	U	-0.27	+/-0.309	0.546	0.257	+/-0.334		pCi/g						
Antimony-125	U	0.112	+/-0.136	0.263	0.124	+/-0.145		pCi/g						
Bismuth-212	UI	0.00	+/-0.593	1.29	0.596	+/-0.740		pCi/g						
Bismuth-214		0.904	+/-0.184	0.154	0.0705	+/-0.199		pCi/g						
Cesium-137		2.32	+/-0.165	0.0791	0.0359	+/-0.253	0.100	pCi/g						
Cobalt-60	U	-0.00134	+/-0.048	0.0923	0.0402	+/-0.048		pCi/g						
Europium-154	U	-0.0572	+/-0.143	0.257	0.113	+/-0.145		pCi/g						
Lead-212		1.18	+/-0.181	0.146	0.0697	+/-0.206		pCi/g						
Lead-214		1.05	+/-0.244	0.175	0.082	+/-0.260		pCi/g						
Potassium-40		16.1	+/-1.60	0.566	0.226	+/-2.14		pCi/g						
Protactinium-231	UI	0.00	+/-0.687	1.08	0.507	+/-0.697		pCi/g						
Radium-226		0.904	+/-0.184	0.154	0.0705	+/-0.199		pCi/g						
Radium-228		1.21	+/-0.327	0.255	0.112	+/-0.374		pCi/g						
Thallium-208		0.400	+/-0.0961	0.0721	0.0327	+/-0.102		pCi/g						
Tin-126	UI	0.00	+/-0.217	0.172	0.0824	+/-0.218		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, solid "Dry Weight Corrected"

Alpha		11.2	+/-3.80	3.85	1.54	+/-4.38	4.00	pCi/g						
Beta		27.0	+/-4.13	4.66	2.18	+/-5.67	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	02/25/16	1518	1547782

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300.4 5 2 3/Ga-01-R
2	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.1.2
Sample ID: 392031001

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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

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Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R2.1
 Sample ID: 386515002
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 32.4%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		32.4						percent		LYT1	12/02/15	1224	1527662	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.084	+/-0.338	0.599	0.280	+/-0.340		pCi/g		RXF2	12/24/15	0714	1528027	2
Antimony-125	U	-0.0709	+/-0.128	0.228	0.105	+/-0.132		pCi/g						
Bismuth-212	U	0.609	+/-0.773	1.43	0.657	+/-0.823		pCi/g						
Bismuth-214		1.08	+/-0.219	0.182	0.083	+/-0.238		pCi/g						
Cesium-137		1.46	+/-0.147	0.0799	0.0356	+/-0.192	0.100	pCi/g						
Cobalt-60	U	-0.0181	+/-0.0423	0.0764	0.0313	+/-0.0431		pCi/g						
Europium-154	U	-0.0492	+/-0.150	0.272	0.117	+/-0.152		pCi/g						
Lead-212		0.929	+/-0.188	0.214	0.103	+/-0.204		pCi/g						
Lead-214		0.813	+/-0.232	0.199	0.093	+/-0.243		pCi/g						
Potassium-40		15.4	+/-1.84	0.882	0.372	+/-2.27		pCi/g						
Protactinium-231	UI	0.00	+/-1.03	1.06	0.491	+/-1.10		pCi/g						
Radium-226		1.08	+/-0.219	0.182	0.083	+/-0.238		pCi/g						
Radium-228		1.14	+/-0.368	0.336	0.149	+/-0.404		pCi/g						
Thallium-208		0.288	+/-0.102	0.0865	0.0393	+/-0.105		pCi/g						
Tin-126	U	0.104	+/-0.163	0.228	0.109	+/-0.164		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		15.2	+/-3.87	3.99	1.74	+/-4.98	4.00	pCi/g		KXB2	12/17/15	0732	1531241	3
Beta		30.6	+/-3.35	3.54	1.68	+/-5.46	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2 3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery Test

Batch ID Recovery% Acceptable Limits

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Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R2.1
Sample ID: 386515002

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer Recovery	Test							Batch ID	Recovery%	Acceptable Limits				

Notes:

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

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Report Date: March 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Project: MJWC00115
 Client ID: MJWC001

Client Sample ID: 4.3.B.R.2.2
 Sample ID: 392031002
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 22.7%

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

Gamma with Ingrowth "Dry Weight Corrected"

Actinium-227	U	-0.0778	+/-0.259	0.477	0.225	+/-0.261		pCi/g		MXR1	03/07/16	0635	1547790	1
Antimony-125	U	-0.0384	+/-0.113	0.199	0.0928	+/-0.114		pCi/g						
Bismuth-212		1.25	+/-1.29	0.915	0.416	+/-1.29		pCi/g						
Bismuth-214		0.850	+/-0.138	0.115	0.0521	+/-0.154		pCi/g						
Cesium-137		1.29	+/-0.134	0.0791	0.0366	+/-0.169	0.100	pCi/g						
Cobalt-60	U	-0.0383	+/-0.0393	0.0652	0.0279	+/-0.0431		pCi/g						
Europium-154	U	0.00517	+/-0.113	0.218	0.0965	+/-0.113		pCi/g						
Lead-212		1.23	+/-0.130	0.106	0.0503	+/-0.173		pCi/g						
Lead-214		1.10	+/-0.198	0.324	0.157	+/-0.218		pCi/g						
Potassium-40		14.2	+/-1.39	0.560	0.235	+/-1.86		pCi/g						
Protactinium-231	UI	0.00	+/-0.689	0.850	0.398	+/-0.753		pCi/g						
Radium-226		0.850	+/-0.138	0.115	0.0521	+/-0.154		pCi/g						
Radium-228		1.17	+/-0.268	0.258	0.116	+/-0.315		pCi/g						
Thallium-208		0.360	+/-0.0725	0.0805	0.0375	+/-0.0783		pCi/g						
Tin-126	UI	0.00	+/-0.120	0.117	0.056	+/-0.121		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, solid "Dry Weight Corrected"

Alpha		14.2	+/-3.51	2.74	1.08	+/-4.48	4.00	pCi/g		JXB7	03/03/16	1123	1547849	2
Beta		21.4	+/-2.57	2.11	0.964	+/-4.07	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	02/25/16	1518	1547782

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5.2.3/Ga-01-R
2	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery Test

Batch ID Recovery% Acceptable Limits

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Report Date: March 8, 2016

Contact: Ms. Laurie Losey

Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.2.2

Sample ID: 392031002

Project: MJWC00115

Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

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 Project: Soil Radioisotopes

Report Date: December 28, 2015

Client Sample ID: 4.3B.R3.1
 Sample ID: 386515003
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 23.2%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lo	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		23.2						percent		LYT1	12/02/15	1224	1527662	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.21	+/-0.426	0.452	0.214	+/-0.438		pCi/g		RXF2	12/24/15	0715	1528027	2
Antimony-125	U	-0.0484	+/-0.102	0.181	0.0854	+/-0.104		pCi/g						
Bismuth-212		1.53	+/-0.670	0.814	0.375	+/-0.688		pCi/g						
Bismuth-214		0.872	+/-0.142	0.112	0.0519	+/-0.159		pCi/g						
Cesium-137		2.47	+/-0.148	0.0717	0.0335	+/-0.248	0.100	pCi/g						
Cobalt-60	U	-0.0144	+/-0.0357	0.064	0.0285	+/-0.0363		pCi/g						
Europium-154	U	-0.0242	+/-0.105	0.193	0.0873	+/-0.106		pCi/g						
Lead-212		1.07	+/-0.121	0.109	0.052	+/-0.148		pCi/g						
Lead-214		0.997	+/-0.172	0.144	0.068	+/-0.191		pCi/g						
Potassium-40		14.4	+/-1.32	0.521	0.226	+/-1.81		pCi/g						
Protactinium-231	UI	0.00	+/-0.681	0.846	0.400	+/-0.719		pCi/g						
Radium-226		0.872	+/-0.142	0.112	0.0519	+/-0.159		pCi/g						
Radium-228		0.683	+/-0.234	0.210	0.0953	+/-0.258		pCi/g						
Thallium-208		0.296	+/-0.077	0.0639	0.0298	+/-0.0808		pCi/g						
Tin-126	UI	0.00	+/-0.154	0.157	0.0752	+/-0.156		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		11.0	+/-3.41	3.92	1.69	+/-4.01	4.00	pCi/g		KXB2	12/17/15	0736	1531241	3
Beta		28.5	+/-3.44	3.57	1.68	+/-5.30	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2.3/Ga-01-R
3	EPA 900.0/SW846.9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

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Project: Soil Radioisotopes

Client Sample ID: 4.3B.R3.1
Sample ID: 386515003

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R3.2
 Sample ID: 386515004
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 20.2%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		20.2						percent		LYT1	12/02/15	1224	1527662	1
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.171	+/-0.250	0.483	0.231	+/-0.263		pCi/g		RXF2	12/24/15	0715	1528027	2
Antimony-125	U	0.0165	+/-0.0887	0.168	0.0794	+/-0.0891		pCi/g						
Bismuth-212		1.63	+/-0.929	0.799	0.370	+/-0.942		pCi/g						
Bismuth-214		0.770	+/-0.156	0.128	0.0601	+/-0.169		pCi/g						
Cesium-137		1.62	+/-0.115	0.0639	0.0299	+/-0.181	0.100	pCi/g						
Cobalt-60	U	-0.0126	+/-0.0355	0.0657	0.0297	+/-0.0359		pCi/g						
Europium-154	U	-0.125	+/-0.114	0.184	0.0832	+/-0.128		pCi/g						
Lead-212		0.925	+/-0.147	0.144	0.0697	+/-0.164		pCi/g						
Lead-214		0.927	+/-0.167	0.133	0.0629	+/-0.182		pCi/g						
Potassium-40		14.7	+/-1.23	0.520	0.229	+/-1.76		pCi/g						
Protactinium-231	UI	0.00	+/-0.769	0.773	0.366	+/-0.813		pCi/g						
Radium-226		0.770	+/-0.156	0.128	0.0601	+/-0.169		pCi/g						
Radium-228		1.17	+/-0.245	0.211	0.0966	+/-0.274		pCi/g						
Thallium-208		0.236	+/-0.061	0.0611	0.0286	+/-0.0642		pCi/g						
Tin-126	U	0.0276	+/-0.128	0.164	0.0791	+/-0.129		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		12.2	+/-3.59	3.89	1.66	+/-4.31	4.00	pCi/g		KXB2	12/17/15	0736	1531241	3
Beta		25.3	+/-2.89	2.44	1.12	+/-4.73	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300.4 5 2 3/Ga-01-R
3	EPA 900 0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R3.2
Sample ID: 386515004

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R4.1
Sample ID: 386515005
Matrix: Soil
Collect Date: 23-NOV-15
Receive Date: 30-NOV-15
Collector: Client
Moisture: 34.5%

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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Gravimetric Solids

ASTM D 2216 % Moisture "As Received"

Moisture		34.5						percent		LYT1	12/02/15	1224	1527662	1
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Rad Gamma Spec Analysis

Gammascpec, Gamma, Solid "Dry Weight Corrected"

Actinium-227	U	0.103	+/-0.343	0.597	0.278	+/-0.347		pCi/g		RXF2	12/24/15	0715	1528027	2
Antimony-125	U	0.0535	+/-0.136	0.259	0.119	+/-0.138		pCi/g						
Bismuth-212	UI	0.00	+/-0.828	1.72	0.793	+/-1.16		pCi/g						
Bismuth-214		1.03	+/-0.224	0.176	0.0793	+/-0.241		pCi/g						
Cesium-137		0.503	+/-0.0957	0.094	0.042	+/-0.104	0.100	pCi/g						
Cobalt-60	U	0.00122	+/-0.0475	0.0949	0.0396	+/-0.0475		pCi/g						
Europium-154	U	-0.0277	+/-0.192	0.355	0.156	+/-0.192		pCi/g						
Lead-212		1.13	+/-0.150	0.131	0.0613	+/-0.177		pCi/g						
Lead-214		1.03	+/-0.190	0.389	0.187	+/-0.210		pCi/g						
Potassium-40		15.6	+/-1.98	0.945	0.394	+/-2.39		pCi/g						
Protactinium-231	UI	0.00	+/-0.966	1.08	0.499	+/-0.997		pCi/g						
Radium-226		1.03	+/-0.224	0.176	0.0793	+/-0.241		pCi/g						
Radium-228		0.972	+/-0.356	0.372	0.165	+/-0.379		pCi/g						
Thallium-208		0.346	+/-0.120	0.0861	0.0386	+/-0.124		pCi/g						
Tin-126	UI	0.00	+/-0.167	0.189	0.0896	+/-0.168		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, solid "Dry Weight Corrected"

Alpha		19.7	+/-5.43	6.02	2.63	+/-6.66	4.00	pCi/g		KXB2	12/17/15	0732	1531241	3
Beta		25.0	+/-3.35	3.02	1.38	+/-4.91	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5 2.3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery Test

Batch ID Recovery% Acceptable Limits

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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228
Contact: Ms. Laurie Losey
Project: Soil Radioisotopes
Client Sample ID: 4.3B.R4.1
Sample ID: 386515005

Report Date: December 28, 2015

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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

GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.4.2
 Sample ID: 392031003
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 23.7%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.0719	+/-0.260	0.505	0.237	+/-0.262		pCi/g		MXR1	03/07/16	0635	1547790	1
Antimony-125	U	-0.00651	+/-0.109	0.200	0.0925	+/-0.109		pCi/g						
Bismuth-212		2.65	+/-1.03	0.864	0.385	+/-1.06		pCi/g						
Bismuth-214		0.959	+/-0.152	0.112	0.050	+/-0.171		pCi/g						
Cesium-137		0.642	+/-0.104	0.0672	0.0301	+/-0.116	0.100	pCi/g						
Cobalt-60	UI	0.00	+/-0.0331	0.0711	0.0301	+/-0.0332		pCi/g						
Europium-154	U	-0.0266	+/-0.115	0.218	0.0944	+/-0.116		pCi/g						
Lead-212		1.12	+/-0.127	0.114	0.0538	+/-0.159		pCi/g						
Lead-214		1.19	+/-0.189	0.142	0.0657	+/-0.213		pCi/g						
Potassium-40		14.4	+/-1.45	0.711	0.303	+/-1.91		pCi/g						
Protactinium-231	UI	0.00	+/-0.790	0.909	0.424	+/-0.845		pCi/g						
Radium-226		0.959	+/-0.152	0.112	0.050	+/-0.171		pCi/g						
Radium-228		0.844	+/-0.266	0.250	0.110	+/-0.293		pCi/g						
Thallium-208		0.355	+/-0.0843	0.0645	0.0291	+/-0.0892		pCi/g						
Tin-126	UI	0.00	+/-0.103	0.135	0.0644	+/-0.105		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A.B, solid "Dry Weight Corrected"

Alpha		12.8	+/-3.92	3.93	1.63	+/-4.71	4.00	pCi/g		JXB7	03/04/16	0853	1547849	2
Beta		22.8	+/-3.31	3.61	1.69	+/-4.61	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	02/25/16	1518	1547782

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4 5 2 3/Ga-01-R
2	EPA 900 0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery Test

Batch ID Recovery% Acceptable Limits

GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.4.2
Sample ID: 392031003

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

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

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: January 20, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.4.3
 Sample ID: 388092010
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 23-DEC-15
 Collector: Client
 Moisture: 23.7%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		23.7						percent		LYT1	12/24/15	0703	1533555	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238		0.0798	+/-0.0797	0.0924	0.0235	+/-0.0804	1.00	pCi/g		MXS2	01/12/16	1021	1534070	2
Plutonium-239/240	U	0.0272	+/-0.0617	0.106	0.0303	+/-0.0618	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232	U	0.0119	+/-0.0532	0.104	0.0298	+/-0.0532	1.00	pCi/g		MXS2	01/12/16	1015	1534063	3
Uranium-233/234		0.670	+/-0.213	0.110	0.030	+/-0.242	1.00	pCi/g						
Uranium-235/236		0.0463	+/-0.0668	0.0805	0.0151	+/-0.0672	1.00	pCi/g						
Uranium-238		0.799	+/-0.230	0.0803	0.015	+/-0.267	1.00	pCi/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237	U	-0.017	+/-0.147	0.340	0.0636	+/-0.147	1.00	pCi/g		MXS2	01/12/16	1032	1534069	4
<i>Alphaspec Th229 - 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		1.06	+/-0.677	0.600	0.157	+/-0.719	1.00	pCi/g		MXS2	01/12/16	1031	1534062	5
Thorium-229		0.342	+/-0.403	0.436	0.0816	+/-0.410	1.00	pCi/g						
Thorium-230		1.09	+/-0.643	0.272	0.00	+/-0.686	1.00	pCi/g						
Thorium-232		0.952	+/-0.619	0.501	0.115	+/-0.653	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241		0.00	+/-0.0282	0.042	0.00	+/-0.0283	1.00	pCi/g		MXS2	01/12/16	1103	1534067	6
Curium-242		0.00	+/-0.0345	0.0513	0.00	+/-0.0345	1.00	pCi/g						
Curium-243/244	U	-0.00333	+/-0.0287	0.0665	0.0124	+/-0.0288	1.00	pCi/g						
Curium-245/246		0.00	+/-0.0323	0.0481	0.00	+/-0.0324	1.00	pCi/g						
<i>Liquid Scint Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	-5.0	+/-6.51	11.5	5.60	+/-6.51	15.0	pCi/g		MXS2	01/14/16	2022	1534073	7
Rad Gamma Spec Analysis														
<i>Gamma I129, Solid "Dry Weight Corrected"</i>														
Iodine-129	U	0.152	+/-0.298	0.799	0.302	+/-0.306	1.00	pCi/g		MJH1	01/15/16	1023	1535059	8
<i>Gammasespec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.0525	+/-0.217	0.408	0.195	+/-0.218		pCi/g		MJH1	12/29/15	1157	1533562	9
Antimony-125	U	0.0103	+/-0.0971	0.183	0.0869	+/-0.0972		pCi/g						
Bismuth-212	U	0.00	+/-0.652	1.12	0.526	+/-0.872		pCi/g						
Bismuth-214		0.868	+/-0.153	0.112	0.0513	+/-0.169		pCi/g						
Cesium-137		2.36	+/-0.153	0.0663	0.0306	+/-0.245	0.100	pCi/g						
Cobalt-60	U	0.0333	+/-0.0499	0.081	0.0362	+/-0.0522		pCi/g						
Europium-154	U	0.00	+/-0.154	0.267	0.122	+/-0.215		pCi/g						
Lead-212		1.19	+/-0.0965	0.0836	0.0399	+/-0.163		pCi/g						
Lead-214		1.11	+/-0.153	0.125	0.0594	+/-0.181		pCi/g						

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228
 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes
 Client Sample ID: 4.3.B.R.4.3
 Sample ID: 388092010

Report Date: January 20, 2016

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Potassium-40		14.0	+/-1.33	0.769	0.341	+/-1.83		pCi/g						
Protactinium-231	U	0.00	+/-0.551	0.711	0.337	+/-0.610		pCi/g						
Radium-226		0.868	+/-0.153	0.112	0.0513	+/-0.169		pCi/g						
Radium-228		1.07	+/-0.309	0.270	0.124	+/-0.337		pCi/g						
Thallium-208		0.330	+/-0.0708	0.0573	0.0264	+/-0.0761		pCi/g						
Tin-126	U	0.00	+/-0.0651	0.0639	0.0307	+/-0.0681		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		21.4	+/-2.35	2.15	1.00	+/-4.68	4.00	pCi/g		JXB7	01/11/16	1904	1534760	10
Beta		12.6	+/-1.11	1.06	0.507	+/-2.15	10.0	pCi/g						
<i>GFPC, Sr90, solid "Dry Weight Corrected"</i>														
Strontium-90	U	-0.15	+/-0.620	1.23	0.540	+/-0.620	2.00	pCi/g		KSD1	01/07/16	1657	1534788	11
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist. Solid "Dry Weight Corrected"</i>														
Tritium	U	-0.308	+/-2.33	4.07	1.96	+/-2.33	6.00	pCi/g		TXJ1	01/11/16	0403	1534918	12
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14	U	0.313	+/-0.823	1.39	0.686	+/-0.823	2.00	pCi/g		TXJ1	01/16/16	1712	1534935	13
<i>Liquid Scint Tc99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	0.426	+/-1.79	3.10	1.49	+/-1.79	5.00	pCi/g		MYM	01/19/16	0732	1534638	14

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/24/15	0703	1533555

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300, I-01 Modified
9	DOE HASL 300, 4 5 2 3/Ga-01-R
10	EPA 900.0/SW846 9310/SM 7110B Modified
11	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
12	EPA 906.0 Modified
13	EPA EERF C-01 Modified

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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: January 20, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.4.3
Sample ID: 388092010

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
14	DOE EML HASL-300, Tc-02-RC Modified													

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer	ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1534070	78.9	(15%-125%)
Uranium-232 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1534063	68.9	(15%-125%)
Uranium-235/236 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1534063	96.9	(15%-125%)
Americium-243 Tracer	Alphaspec Np237, Solid "Dry Weight Corrected"	1534069	98.1	(15%-125%)
Actinium-227 Tracer	Alphaspec Th229 + 228.230.232 Solid "Dry Weight Corrected"	1534062	76.5	(15%-125%)
Americium-243 Tracer	Am241, Cm Solid "Dry Weight Corrected"	1534067	84.4	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid "Dry Weight Corrected"	1534073	78.9	(15%-125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"	1534788	80.3	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "Dry Weight Corrected"	1534638	92.5	(15%-125%)

Notes:

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

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: January 20, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.4.3
 Sample ID: 388092020
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 23-DEC-15
 Collector: Client
 Moisture: 23.7%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.115	+/-0.338	0.648	0.306	+/-0.342		pCi/g		MJH1	01/18/16	0724	1534020	1
Antimony-125	U	-0.0754	+/-0.134	0.230	0.106	+/-0.138		pCi/g						
Bismuth-212	UI	0.00	+/-0.964	1.42	0.654	+/-1.08		pCi/g						
Bismuth-214		0.850	+/-0.187	0.180	0.0831	+/-0.202		pCi/g						
Cesium-137		2.45	+/-0.179	0.094	0.043	+/-0.284	0.100	pCi/g						
Cobalt-60	U	-0.014	+/-0.0493	0.0932	0.040	+/-0.0497		pCi/g						
Europium-154	U	0.000298	+/-0.156	0.304	0.134	+/-0.156		pCi/g						
Lead-212		1.16	+/-0.146	0.126	0.0593	+/-0.180		pCi/g						
Lead-214		1.23	+/-0.232	0.376	0.182	+/-0.257		pCi/g						
Potassium-40		14.7	+/-1.72	0.798	0.333	+/-2.13		pCi/g						
Protactinium-231	UI	0.00	+/-0.864	0.905	0.417	+/-0.876		pCi/g						
Radium-226		0.850	+/-0.187	0.180	0.0831	+/-0.202		pCi/g						
Radium-228		1.05	+/-0.341	0.315	0.140	+/-0.379		pCi/g						
Thallium-208		0.367	+/-0.0755	0.0832	0.038	+/-0.0823		pCi/g						
Tin-126	UI	0.00	+/-0.160	0.171	0.0813	+/-0.162		pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/24/15	0703	1533924

The following Analytical Methods were performed

Method	Description
I	DOE HASL 300, 4.5.2.3/Ga-01-R

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: January 20, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.4.3
Sample ID: 388092020

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer Recovery	Test							Batch ID	Recovery%	Acceptable Limits				

Notes:

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

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R4.4
 Sample ID: 386515006
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 23%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		23.0						percent		LYT1	12/02/15	1224	1527662	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238	U	0.0141	+/-0.053	0.0892	0.0167	+/-0.0531	1.00	pCi/g		JXR1	12/21/15	1451	1527520	2
Plutonium-239/240	U	0.0141	+/-0.053	0.0891	0.0167	+/-0.0531	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232	U	-0.00917	+/-0.0405	0.106	0.0242	+/-0.0407	1.00	pci/g		JXR1	12/21/15	0932	1527510	3
Uranium-233/234		0.832	+/-0.216	0.0788	0.0181	+/-0.258	1.00	pci/g						
Uranium-235/236		0.157	+/-0.0971	0.0428	0.00	+/-0.101	1.00	pci/g						
Uranium-238		0.954	+/-0.232	0.0937	0.0255	+/-0.282	1.00	pci/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237	U	-0.122	+/-0.172	0.562	0.172	+/-0.172	1.00	pCi/g		JXR1	12/18/15	0923	1527516	4
<i>Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		0.677	+/-0.431	0.467	0.152	+/-0.444	1.00	pCi/g		JXR1	12/19/15	1025	1527505	5
Thorium-229		0.0809	+/-0.186	0.295	0.0675	+/-0.186	1.00	pCi/g						
Thorium-230		0.892	+/-0.457	0.372	0.106	+/-0.475	1.00	pCi/g						
Thorium-232		0.794	+/-0.416	0.159	0.00	+/-0.430	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241	U	-0.0229	+/-0.0661	0.166	0.0574	+/-0.0661	1.00	pCi/g		JXR1	12/22/15	1039	1527513	6
Curium-242	U	-0.00457	+/-0.0397	0.0918	0.0171	+/-0.0398	1.00	pCi/g						
Curium-243/244	U	0.0275	+/-0.0789	0.147	0.0479	+/-0.079	1.00	pCi/g						
Curium-245/246		0.0842	+/-0.0961	0.120	0.0304	+/-0.0969	1.00	pCi/g						
<i>Liquid Scint Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	0.996	+/-7.00	12.1	5.85	+/-7.01	15.0	pCi/g		JXR1	12/24/15	1639	1527521	7
Rad Gamma Spec Analysis														
<i>Gamma 1129, Solid "Dry Weight Corrected"</i>														
Iodine-129	U	-0.0243	+/-0.264	0.558	0.208	+/-0.264	1.00	pCi/g		MJH1	12/22/15	0646	1528513	8
<i>Gammaspect, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.263	+/-0.255	0.435	0.204	+/-0.284		pCi/g		RXF2	12/24/15	0716	1528027	9
Antimony-125	U	-0.000355	+/-0.0894	0.172	0.0796	+/-0.0894		pCi/g						
Bismuth-212	UI	0.00	+/-0.952	1.15	0.533	+/-0.989		pCi/g						
Bismuth-214		0.752	+/-0.184	0.132	0.0606	+/-0.194		pCi/g						
Cesium-137		0.828	+/-0.0974	0.0741	0.0341	+/-0.118	0.100	pCi/g						
Cobalt-60	U	-0.0126	+/-0.0378	0.0712	0.0312	+/-0.0382		pCi/g						
Europium-154	U	-0.0701	+/-0.102	0.165	0.0705	+/-0.107		pCi/g						
Lead-212		1.18	+/-0.130	0.104	0.049	+/-0.167		pCi/g						
Lead-214		1.12	+/-0.148	0.123	0.0572	+/-0.174		pCi/g						

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228
 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes
 Client Sample ID: 4.3B.R4.4
 Sample ID: 386515006

Report Date: December 28, 2015

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Potassium-40		13.4	+/-1.31	0.650	0.280	+/-1.76		pCi/g						
Protactinium-231	U	0.00	+/-0.914	0.881	0.414	+/-0.931		pCi/g						
Radium-226		0.752	+/-0.184	0.132	0.0606	+/-0.194		pCi/g						
Radium-228		0.894	+/-0.214	0.173	0.0742	+/-0.247		pCi/g						
Thallium-208		0.303	+/-0.0749	0.065	0.0299	+/-0.0789		pCi/g						
Tin-126	U	0.0699	+/-0.113	0.148	0.0713	+/-0.114		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		16.0	+/-4.58	3.82	1.48	+/-5.46	4.00	pCi/g		KXB2	12/17/15	0736	1531241	10
Beta		22.3	+/-3.39	2.83	1.26	+/-4.45	10.0	pCi/g						
<i>GFPC, Sr90, solid "Dry Weight Corrected"</i>														
Strontium-90	U	-0.832	+/-0.758	1.75	0.760	+/-0.758	2.00	pCi/g		KSD1	12/18/15	1651	1531246	11
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist, Solid "Dry Weight Corrected"</i>														
Tritium		3.71	+/-2.43	3.99	1.93	+/-2.43	6.00	pCi/g		TXJ1	12/19/15	1633	1529500	12
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14	U	0.0526	+/-0.995	1.70	0.834	+/-0.995	2.00	pCi/g		TXJ1	12/19/15	1207	1529501	13
<i>Liquid Scint Tc99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	-2.02	+/-1.80	3.61	1.67	+/-1.81	5.00	pCi/g		MYM	12/24/15	1106	1529498	14

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300, I-01 Modified
9	DOE HASL 300, 4.5.2 3/Ga-01-R
10	EPA 900 0/SW846 9310/SM 7110B Modified
11	EPA 905 0 Modified/DOE RP501 Rev. 1 Modified
12	EPA 906 0 Modified
13	EPA EERF C-01 Modified

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Sample ID: 386515006

Report Date: December 28, 2015

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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14 DOE EML HASL-300, Tc-02-RC Modified

Surrogate/Tracer	Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer		ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1527520	76.8	(15%-125%)
Uranium-232 Tracer		ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1527510	79.1	(15%-125%)
Uranium-235/236 Tracer		ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1527510	74.5	(15%-125%)
Americium-243 Tracer		Alphaspec Np237, Solid "Dry Weight Corrected"	1527516	93.1	(15%-125%)
Actinium-227 Tracer		Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"	1527505	103	(15%-125%)
Americium-243 Tracer		Am241, Cm Solid "Dry Weight Corrected"	1527513	71.4	(15%-125%)
Plutonium-242 Tracer		Liquid Scint Pu241, Solid "Dry Weight Corrected"	1527521	76.8	(15%-125%)
Strontium Carrier		GFPC, Sr90, solid "Dry Weight Corrected"	1531246	79.2	(25%-125%)
Technetium-99m Tracer		Liquid Scint Tc99, Solid "Dry Weight Corrected"	1529498	92.4	(15%-125%)

Notes:

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

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Report Date: December 29, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R.4.5
 Sample ID: 386555003
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 02-DEC-15
 Collector: Client
 Moisture: 23.6%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		23.6						percent		CXC1	12/02/15	1419	1527878	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238	U	0.00452	+/-0.0473	0.0987	0.0251	+/-0.0474	1.00	pCi/g		JXR1	12/21/15	0933	1527520	2
Plutonium-239/240	U	0.0207	+/-0.0569	0.0987	0.0251	+/-0.057	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232	U	-0.0389	+/-0.0602	0.174	0.0593	+/-0.0603	1.00	pCi/g		JXR1	12/21/15	0932	1527510	3
Uranium-233/234		0.555	+/-0.263	0.223	0.0702	+/-0.286	1.00	pCi/g						
Uranium-235/236		0.111	+/-0.122	0.0832	0.00	+/-0.124	1.00	pCi/g						
Uranium-238		0.961	+/-0.326	0.133	0.0248	+/-0.380	1.00	pCi/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237	U	0.0228	+/-0.238	0.497	0.127	+/-0.238	1.00	pCi/g		JXR1	12/18/15	0923	1527516	4
<i>Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		0.998	+/-0.595	0.607	0.194	+/-0.619	1.00	pCi/g		JXR1	12/19/15	1025	1527505	5
Thorium-229		0.108	+/-0.249	0.395	0.0904	+/-0.249	1.00	pCi/g						
Thorium-230		0.534	+/-0.422	0.394	0.0902	+/-0.431	1.00	pCi/g						
Thorium-232		0.833	+/-0.503	0.340	0.0636	+/-0.521	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241		0.0344	+/-0.0676	0.0936	0.0175	+/-0.0678	1.00	pCi/g		JXR1	12/21/15	1251	1527513	6
Curium-242		0.00	+/-0.0438	0.0652	0.00	+/-0.0439	1.00	pCi/g						
Curium-243/244	U	-0.00926	+/-0.041	0.107	0.0245	+/-0.0411	1.00	pCi/g						
Curium-245/246		0.00	+/-0.045	0.067	0.00	+/-0.0452	1.00	pCi/g						
<i>Liquid Scinti Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	5.92	+/-7.42	12.5	6.04	+/-7.52	15.0	pCi/g		JXR1	12/24/15	1944	1527521	7
Rad Gamma Spec Analysis														
<i>Gamma I129, Solid "Dry Weight Corrected"</i>														
Iodine-129	U	0.187	+/-0.428	1.16	0.428	+/-0.437	1.00	pCi/g		MJH1	12/22/15	0708	1528513	8
<i>Gammasespec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0893	+/-0.298	0.562	0.265	+/-0.301		pCi/g		RXF2	12/24/15	0605	1528387	9
Antimony-125	U	0.0113	+/-0.147	0.239	0.112	+/-0.147		pCi/g						
Bismuth-212	UI	0.00	+/-1.03	1.31	0.606	+/-1.19		pCi/g						
Bismuth-214		0.722	+/-0.198	0.164	0.0758	+/-0.208		pCi/g						
Cesium-137		2.09	+/-0.169	0.0911	0.0419	+/-0.252	0.100	pCi/g						
Cobalt-60	UI	0.00	+/-0.0457	0.106	0.0473	+/-0.0542		pCi/g						
Europium-154	U	0.0585	+/-0.127	0.264	0.117	+/-0.130		pCi/g						
Lead-212		1.30	+/-0.149	0.132	0.0625	+/-0.187		pCi/g						
Lead-214		1.19	+/-0.176	0.355	0.172	+/-0.204		pCi/g						

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 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes
 Client Sample ID: 4.3B.R.4.5
 Sample ID: 386555003

Report Date: December 29, 2015

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec. Gamma. Solid "Dry Weight Corrected"</i>														
Potassium-40		13.6	+/-1.50	0.678	0.282	+/-1.90		pCi/g						
Protactinium-231	UI	0.00	+/-0.952	0.985	0.460	+/-1.05		pCi/g						
Radium-226		0.722	+/-0.198	0.164	0.0758	+/-0.208		pCi/g						
Radium-228		1.16	+/-0.289	0.273	0.121	+/-0.338		pCi/g						
Thallium-208		0.371	+/-0.0874	0.0737	0.0336	+/-0.0936		pCi/g						
Tin-126	UI	0.00	+/-0.155	0.178	0.0851	+/-0.157		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		17.4	+/-4.86	3.95	1.52	+/-5.83	4.00	pCi/g		JXB7	12/17/15	1527	1531243	10
Beta		28.6	+/-3.92	3.21	1.44	+/-5.48	10.0	pCi/g						
<i>GFPC, Sr90, solid "Dry Weight Corrected"</i>														
Strontium-90	U	0.257	+/-0.455	0.806	0.344	+/-0.457	2.00	pCi/g		KSD1	12/21/15	1411	1531246	11
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist. Solid "Dry Weight Corrected"</i>														
Tritium		2.65	+/-2.55	4.26	2.06	+/-2.55	6.00	pCi/g		TXJ1	12/19/15	2245	1529500	12
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14		1.22	+/-1.00	1.67	0.821	+/-1.01	2.00	pCi/g		TXJ1	12/19/15	1618	1529501	13
<i>Liquid Scint Tc99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	-1.52	+/-1.31	2.49	1.18	+/-1.31	5.00	pCi/g		MYM	12/28/15	0841	1529498	14

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GI.-RAD-A-021	CXC1	12/02/15	1419	1527878

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300, I-01 Modified
9	DOE HASL 300, 4 5 2.3/Ga-01-R
10	EPA 900.0/SW846 9310/SM 7110B Modified
11	EPA 905.0 Modified/DOE RP501 Rev 1 Modified
12	EPA 906.0 Modified
13	EPA EERF C-01 Modified

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Client Sample ID: 4,3B.R.4.5
Sample ID: 386555003

Report Date: December 29, 2015

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
14	DOE EML HASL-300, Tc-02-RC Modified													

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer	ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1527520	72.9	(15%-125%)
Uranium-232 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1527510	43.5	(15%-125%)
Uranium-235/236 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1527510	74.8	(15%-125%)
Americium-243 Tracer	Alphaspec Np237, Solid "Dry Weight Corrected"	1527516	88.1	(15%-125%)
Actinium-227 Tracer	Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"	1527505	74.6	(15%-125%)
Americium-243 Tracer	Am241, Cm Solid "Dry Weight Corrected"	1527513	74.2	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid "Dry Weight Corrected"	1527521	72.9	(15%-125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"	1531246	79.2	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "Dry Weight Corrected"	1529498	93.8	(15%-125%)

Notes:

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

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Report Date: December 29, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R.4.5
 Sample ID: 386555003
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 02-DEC-15
 Collector: Client
 Moisture: 23.6%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		23.6						percent		CXC1	12/02/15	1419	1527878	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238	U	0.00452	+/-0.0473	0.0987	0.0251	+/-0.0474	1.00	pCi/g		JXR1	12/21/15	0933	1527520	2
Plutonium-239/240	U	0.0207	+/-0.0569	0.0987	0.0251	+/-0.057	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232	U	-0.0389	+/-0.0602	0.174	0.0593	+/-0.0603	1.00	pCi/g		JXR1	12/21/15	0932	1527510	3
Uranium-233/234		0.555	+/-0.263	0.223	0.0702	+/-0.286	1.00	pCi/g						
Uranium-235/236		0.111	+/-0.122	0.0832	0.00	+/-0.124	1.00	pCi/g						
Uranium-238		0.961	+/-0.326	0.133	0.0248	+/-0.380	1.00	pCi/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237	U	0.0228	+/-0.238	0.497	0.127	+/-0.238	1.00	pCi/g		JXR1	12/18/15	0923	1527516	4
<i>Alphaspec Th229 - 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		0.998	+/-0.595	0.607	0.194	+/-0.619	1.00	pCi/g		JXR1	12/19/15	1025	1527505	5
Thorium-229		0.108	+/-0.249	0.395	0.0904	+/-0.249	1.00	pCi/g						
Thorium-230		0.534	+/-0.422	0.394	0.0902	+/-0.431	1.00	pCi/g						
Thorium-232		0.833	+/-0.503	0.340	0.0636	+/-0.521	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241		0.0344	+/-0.0676	0.0936	0.0175	+/-0.0678	1.00	pCi/g		JXR1	12/21/15	1251	1527513	6
Curium-242		0.00	+/-0.0438	0.0652	0.00	+/-0.0439	1.00	pCi/g						
Curium-243/244	U	-0.00926	+/-0.041	0.107	0.0245	+/-0.0411	1.00	pCi/g						
Curium-245/246		0.00	+/-0.045	0.067	0.00	+/-0.0452	1.00	pCi/g						
<i>Liquid Scint Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	5.92	+/-7.42	12.5	6.04	+/-7.52	15.0	pCi/g		JXR1	12/24/15	1944	1527521	7
Rad Gamma Spec Analysis														
<i>Gamma I129, Solid "Dry Weight Corrected"</i>														
Iodine-129	U	0.187	+/-0.428	1.16	0.428	+/-0.437	1.00	pCi/g		MJH1	12/22/15	0708	1528513	8
<i>Gammasespec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0893	+/-0.298	0.562	0.265	+/-0.301		pCi/g		RXF2	12/24/15	0605	1528387	9
Antimony-125	U	0.0113	+/-0.147	0.239	0.112	+/-0.147		pCi/g						
Bismuth-212	UI	0.00	+/-1.03	1.31	0.606	+/-1.19		pCi/g						
Bismuth-214		0.722	+/-0.198	0.164	0.0758	+/-0.208		pCi/g						
Cesium-137		2.09	+/-0.169	0.0911	0.0419	+/-0.252	0.100	pCi/g						
Cobalt-60	UI	0.00	+/-0.0457	0.106	0.0473	+/-0.0542		pCi/g						
Europtium-154	U	0.0585	+/-0.127	0.264	0.117	+/-0.130		pCi/g						
Lead-212		1.30	+/-0.149	0.132	0.0625	+/-0.187		pCi/g						
Lead-214		1.19	+/-0.176	0.355	0.172	+/-0.204		pCi/g						

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 Sample ID: 386555003

Report Date: December 29, 2015

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RI	Units	DI	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Potassium-40		13.6	+/-1.50	0.678	0.282	+/-1.90		pCi/g						
Protactinium-231	UI	0.00	+/-0.952	0.985	0.460	+/-1.05		pCi/g						
Radium-226		0.722	+/-0.198	0.164	0.0758	+/-0.208		pCi/g						
Radium-228		1.16	+/-0.289	0.273	0.121	+/-0.338		pCi/g						
Thallium-208		0.371	+/-0.0874	0.0737	0.0336	+/-0.0936		pCi/g						
Tin-126	UI	0.00	+/-0.155	0.178	0.0851	+/-0.157		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		17.4	+/-4.86	3.95	1.52	+/-5.83	4.00	pCi/g	JXB7	12/17/15	1527	1531243	10	
Beta		28.6	+/-3.92	3.21	1.44	+/-5.48	10.0	pCi/g						
<i>GFPC, Sr90, solid "Dry Weight Corrected"</i>														
Strontium-90	UI	0.257	+/-0.455	0.806	0.344	+/-0.457	2.00	pCi/g	KSDI	12/21/15	1411	1531246	11	
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist, Solid "Dry Weight Corrected"</i>														
Tritium		2.65	+/-2.55	4.26	2.06	+/-2.55	6.00	pCi/g	TXJ1	12/19/15	2245	1529500	12	
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14		1.22	+/-1.00	1.67	0.821	+/-1.01	2.00	pCi/g	TXJ1	12/19/15	1618	1529501	13	
<i>Liquid Scint Tc99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	-1.52	+/-1.31	2.49	1.18	+/-1.31	5.00	pCi/g	MYM	12/28/15	0841	1529498	14	

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	12/02/15	1419	1527878

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300, I-01 Modified
9	DOE HASL 300, 4.5.2 3/Ga-01-R
10	EPA 900.0/SW846 9310/SM 7110B Modified
11	EPA 905.0 Modified/DOE RP501 Rev. 1 Modified
12	EPA 906.0 Modified
13	EPA EERF C-01 Modified

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

Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 29, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R.4.5
Sample ID: 386555003

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
14	DOE EML HASL-300, Tc-02-RC Modified													

Surrogate/Tracer	Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer		ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1527520	72.9	(15%-125%)
Uranium-232 Tracer		ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1527510	43.5	(15%-125%)
Uranium-235/236 Tracer		ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1527510	74.8	(15%-125%)
Americium-243 Tracer		Alphaspec Np237, Solid "Dry Weight Corrected"	1527516	88.1	(15%-125%)
Actinium-227 Tracer		Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"	1527505	74.6	(15%-125%)
Americium-243 Tracer		Am241, Cm Solid "Dry Weight Corrected"	1527513	74.2	(15%-125%)
Plutonium-242 Tracer		Liquid Scint Pu241, Solid "Dry Weight Corrected"	1527521	72.9	(15%-125%)
Strontium Carrier		GFPC, Sr90, solid "Dry Weight Corrected"	1531246	79.2	(25%-125%)
Technetium-99m Tracer		Liquid Scint Tc99, Solid "Dry Weight Corrected"	1529498	93.8	(15%-125%)

Notes:

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

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R4.6
 Sample ID: 386515007
 Matrix: Soil
 Collect Date: 23-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 22.9%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.9						percent		LYT1	12/02/15	1224	1527662	1
Rad Alpha Spec Analysis														
<i>ASP Plutonium Isotopic, Solid "Dry Weight Corrected"</i>														
Plutonium-238	U	0.0279	+/-0.0632	0.109	0.0311	+/-0.0633	1.00	pCi/g		JXR1	12/21/15	0933	1527520	2
Plutonium-239/240	U	0.0161	+/-0.055	0.102	0.0278	+/-0.055	1.00	pCi/g						
<i>ASP Uranium Isotopic, Solid "Dry Weight Corrected"</i>														
Uranium-232	U	0.0121	+/-0.0784	0.160	0.0476	+/-0.0785	1.00	pci/g		JXR1	12/21/15	0932	1527510	3
Uranium-233/234		0.718	+/-0.220	0.122	0.0363	+/-0.255	1.00	pci/g						
Uranium-235/236		0.0999	+/-0.0933	0.109	0.0297	+/-0.095	1.00	pci/g						
Uranium-238		0.804	+/-0.229	0.0791	0.0148	+/-0.271	1.00	pci/g						
<i>Alphaspec Np237, Solid "Dry Weight Corrected"</i>														
Neptunium-237	U	-0.0506	+/-0.229	0.577	0.177	+/-0.229	1.00	pCi/g		JXR1	12/18/15	0923	1527516	4
<i>Alphaspec Th229 - 228,230,232 Solid "Dry Weight Corrected"</i>														
Thorium-228		0.881	+/-0.521	0.490	0.146	+/-0.541	1.00	pCi/g		JXR1	12/19/15	1025	1527505	5
Thorium-229	U	0.00258	+/-0.191	0.425	0.116	+/-0.192	1.00	pCi/g						
Thorium-230		0.806	+/-0.475	0.357	0.0817	+/-0.491	1.00	pCi/g						
Thorium-232		1.01	+/-0.521	0.308	0.0576	+/-0.543	1.00	pCi/g						
<i>Am241, Cm Solid "Dry Weight Corrected"</i>														
Americium-241	U	0.0133	+/-0.0737	0.141	0.0324	+/-0.0738	1.00	pCi/g		JXR1	12/21/15	1251	1527513	6
Curium-242		0.00	+/-0.0572	0.0851	0.00	+/-0.0574	1.00	pCi/g						
Curium-243/244	U	0.0454	+/-0.103	0.177	0.0506	+/-0.103	1.00	pCi/g						
Curium-245/246		0.00	+/-0.0588	0.0876	0.00	+/-0.059	1.00	pCi/g						
<i>Liquid Scint Pu241, Solid "Dry Weight Corrected"</i>														
Plutonium-241	U	4.97	+/-7.49	12.7	6.14	+/-7.57	15.0	pCi/g		JXR1	12/24/15	1725	1527521	7
Rad Gamma Spec Analysis														
<i>Gamma I129, Solid "Dry Weight Corrected"</i>														
Iodine-129	U	-0.0764	+/-0.395	0.740	0.312	+/-0.397	1.00	pCi/g		MJH1	12/22/15	0646	1528513	8
<i>Gammasespec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0919	+/-0.240	0.445	0.209	+/-0.244		pCi/g		RXF2	12/24/15	0716	1528027	9
Antimony-125	U	-0.0153	+/-0.0937	0.170	0.0791	+/-0.094		pCi/g						
Bismuth-212	UI	0.00	+/-0.569	1.21	0.568	+/-0.879		pCi/g						
Bismuth-214		0.918	+/-0.143	0.110	0.0499	+/-0.162		pCi/g						
Cesium-137		0.675	+/-0.115	0.0701	0.0322	+/-0.127	0.100	pCi/g						
Cobalt-60	U	0.0091	+/-0.0321	0.0659	0.0286	+/-0.0324		pCi/g						
Europium-154	U	0.0188	+/-0.107	0.210	0.0931	+/-0.107		pCi/g						
Lead-212		1.02	+/-0.119	0.101	0.0479	+/-0.152		pCi/g						
Lead-214		0.970	+/-0.170	0.138	0.0646	+/-0.189		pCi/g						

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228
 Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes
 Client Sample ID: 4.3B.R4.6
 Sample ID: 386515007

Report Date: December 28, 2015

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>GammaSpec, Gamma, Solid "Dry Weight Corrected"</i>														
Potassium-40		14.0	+/-1.30	0.485	0.200	+/-1.78		pCi/g						
Protactinium-231	UI	0.00	+/-0.497	0.940	0.444	+/-0.615		pCi/g						
Radium-226		0.918	+/-0.143	0.110	0.0499	+/-0.162		pCi/g						
Radium-228		1.03	+/-0.226	0.191	0.0833	+/-0.270		pCi/g						
Thallium-208		0.258	+/-0.073	0.0635	0.0291	+/-0.076		pCi/g						
Tin-126	UI	0.00	+/-0.109	0.133	0.0639	+/-0.110		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		13.1	+/-4.02	3.96	1.61	+/-4.79	4.00	pCi/g		KXB2	12/17/15	0736	1531241	10
Beta		19.3	+/-2.84	2.40	1.08	+/-4.08	10.0	pCi/g						
<i>GFPC, Sr90, solid "Dry Weight Corrected"</i>														
Strontium-90	U	0.115	+/-0.914	1.72	0.752	+/-0.915	2.00	pCi/g		KSD1	12/18/15	1651	1531246	11
Rad Liquid Scintillation Analysis														
<i>LSC, Tritium Dist, Solid "Dry Weight Corrected"</i>														
Tritium		3.64	+/-2.45	4.02	1.94	+/-2.45	6.00	pCi/g		TXJ1	12/19/15	1806	1529500	12
<i>Liquid Scint C14, Solid "Dry Weight Corrected"</i>														
Carbon-14		0.898	+/-1.01	1.69	0.831	+/-1.01	2.00	pCi/g		TXJ1	12/19/15	1310	1529501	13
<i>Liquid Scint Tc99, Solid "Dry Weight Corrected"</i>														
Technetium-99	U	-0.537	+/-1.63	3.06	1.41	+/-1.63	5.00	pCi/g		MYM	12/24/15	1124	1529498	14

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE EML HASL-300, Pu-11-RC Modified
3	DOE EML HASL-300, U-02-RC Modified
4	ASTM C 1476-00 Modified
5	DOE EML HASL-300, Th-01-RC Modified
6	DOE EML HASL-300, Am-05-RC Modified
7	DOE EML HASL-300, Pu-11-RC Modified
8	DOE EML HASL-300, I-01 Modified
9	DOE HASL 300, 4 5.2.3/Ga-01-R
10	EPA 900.0/SW846 9310/SM 7110B Modified
11	EPA 905.0 Modified/DOE RP501 Rev 1 Modified
12	EPA 906.0 Modified
13	EPA EERF C-01 Modified

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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R4.6
Sample ID: 386515007

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
14	DOE EML HASL-300, Tc-02-RC Modified													

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
Plutonium-242 Tracer	ASP Plutonium Isotopic, Solid "Dry Weight Corrected"	1527520	70.6	(15%-125%)
Uranium-232 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1527510	65.1	(15%-125%)
Uranium-235/236 Tracer	ASP Uranium Isotopic, Solid "Dry Weight Corrected"	1527510	66	(15%-125%)
Americium-243 Tracer	Alphaspec Np237, Solid "Dry Weight Corrected"	1527516	94.1	(15%-125%)
Actinium-227 Tracer	Alphaspec Th229 + 228,230,232 Solid "Dry Weight Corrected"	1527505	83.6	(15%-125%)
Americium-243 Tracer	Am241, Cm Solid "Dry Weight Corrected"	1527513	57.5	(15%-125%)
Plutonium-242 Tracer	Liquid Scint Pu241, Solid "Dry Weight Corrected"	1527521	70.6	(15%-125%)
Strontium Carrier	GFPC, Sr90, solid "Dry Weight Corrected"	1531246	80.3	(25%-125%)
Technetium-99m Tracer	Liquid Scint Tc99, Solid "Dry Weight Corrected"	1529498	93.9	(15%-125%)

Notes:

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

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Project: MJWC00115
 Client ID: MJWC001

Client Sample ID: 4.3B.R5.1
 Sample ID: 386515008
 Matrix: Soil
 Collect Date: 18-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 26.9%

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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Gravimetric Solids

ASTM D 2216 % Moisture "As Received"

Moisture		26.9						percent		LYT1	12/02/15	1224	1527662	1
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Rad Gamma Spec Analysis

Gammascpec. Gamma, Solid "Dry Weight Corrected"

Actinium-227	U	0.066	+/-0.390	0.749	0.347	+/-0.392		pCi/g		RXF2	12/24/15	0716	1528027	2
Antimony-125	U	0.00688	+/-0.171	0.279	0.126	+/-0.171		pCi/g						
Bismuth-212	UI	0.00	+/-1.09	2.05	0.936	+/-1.33		pCi/g						
Bismuth-214		1.22	+/-0.282	0.234	0.106	+/-0.300		pCi/g						
Cesium-137		0.190	+/-0.0951	0.127	0.0571	+/-0.0963	0.100	pCi/g						
Cobalt-60	U	-0.0303	+/-0.0858	0.130	0.0548	+/-0.0869		pCi/g						
Europium-154	U	0.081	+/-0.212	0.437	0.191	+/-0.216		pCi/g						
Lead-212		1.36	+/-0.184	0.166	0.0774	+/-0.227		pCi/g						
Lead-214		1.15	+/-0.263	0.477	0.229	+/-0.279		pCi/g						
Potassium-40		14.8	+/-2.12	1.14	0.471	+/-2.46		pCi/g						
Protactinium-231	UI	0.00	+/-1.60	1.10	0.497	+/-1.66		pCi/g						
Radium-226		1.22	+/-0.282	0.234	0.106	+/-0.300		pCi/g						
Radium-228		0.853	+/-0.449	0.402	0.173	+/-0.458		pCi/g						
Thallium-208		0.374	+/-0.133	0.102	0.0453	+/-0.136		pCi/g						
Tin-126	UI	0.00	+/-0.131	0.156	0.074	+/-0.133		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A-B, solid "Dry Weight Corrected"

Alpha		15.0	+/-4.20	3.88	1.57	+/-5.10	4.00	pCi/g		KXB2	12/17/15	0736	1531241	3
Beta		21.1	+/-3.23	3.09	1.41	+/-4.41	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2.3/Ga-01-R
3	EPA 900 0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery Test

Batch ID Recovery% Acceptable Limits

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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R5.1
Sample ID: 386515008

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.5.2
 Sample ID: 392031004
 Matrix: Soil
 Collect Date: 18-NOV-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 22.5%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	-0.221	+/-0.308	0.555	0.258	+/-0.326		pCi/g		MXR1	03/07/16	0635	1547790	1
Antimony-125	U	-0.021	+/-0.116	0.214	0.0975	+/-0.117		pCi/g						
Bismuth-212	UI	0.00	+/-0.918	1.41	0.648	+/-1.04		pCi/g						
Bismuth-214		0.829	+/-0.190	0.0148	0.00	+/-0.204		pCi/g						
Cesium-137		0.159	+/-0.0817	0.0995	0.0455	+/-0.083	0.100	pCi/g						
Cobalt-60	U	0.0224	+/-0.0474	0.102	0.044	+/-0.0484		pCi/g						
Europium-154	U	0.0213	+/-0.143	0.289	0.126	+/-0.144		pCi/g						
Lead-212		1.16	+/-0.151	0.132	0.0618	+/-0.183		pCi/g						
Lead-214		1.12	+/-0.242	0.390	0.189	+/-0.261		pCi/g						
Potassium-40		14.7	+/-1.87	1.08	0.471	+/-2.25		pCi/g						
Protactinium-231	UI	0.00	+/-0.839	1.10	0.509	+/-0.872		pCi/g						
Radium-226		0.829	+/-0.190	0.0148	0.00	+/-0.204		pCi/g						
Radium-228		1.34	+/-0.321	0.293	0.128	+/-0.373		pCi/g						
Thallium-208		0.290	+/-0.101	0.0889	0.0407	+/-0.104		pCi/g						
Tm-126	UI	0.00	+/-0.160	0.200	0.0951	+/-0.161		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, solid "Dry Weight Corrected"

Alpha		12.7	+/-3.98	3.84	1.54	+/-4.70	4.00	pCi/g		JXB7	03/03/16	1123	1547849	2
Beta		19.4	+/-3.37	3.79	1.76	+/-4.41	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GI-RAD-A-021	CXC1	02/25/16	1518	1547782

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5.2 3/Ga-01-R
2	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery Test

Batch ID Recovery% Acceptable Limits

GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.5.2
Sample ID: 392031004

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

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

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

Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R6.1
 Sample ID: 386515009
 Matrix: Soil
 Collect Date: 20-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 26.4%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		26.4						percent		LYT1	12/02/15	1224	1527662	1
Rad Gamma Spec Analysis														
<i>Gammaspec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.20	+/-0.293	0.528	0.246	+/-0.308		pCi/g		RXF2	12/24/15	0717	1528027	2
Antimony-125	U	-0.00552	+/-0.131	0.239	0.111	+/-0.131		pCi/g						
Bismuth-212	UI	0.00	+/-0.714	1.31	0.597	+/-0.863		pCi/g						
Bismuth-214		0.885	+/-0.169	0.149	0.0672	+/-0.186		pCi/g						
Cesium-137		0.715	+/-0.140	0.0784	0.0351	+/-0.154	0.100	pCi/g						
Cobalt-60	UI	0.00	+/-0.0456	0.105	0.0459	+/-0.0509		pCi/g						
Europium-154	U	-0.0135	+/-0.148	0.280	0.123	+/-0.148		pCi/g						
Lead-212		1.18	+/-0.143	0.117	0.0548	+/-0.176		pCi/g						
Lead-214		1.09	+/-0.218	0.365	0.176	+/-0.238		pCi/g						
Potassium-40		14.4	+/-1.59	0.444	0.158	+/-2.01		pCi/g						
Protactinium-231	UI	0.00	+/-0.814	1.04	0.485	+/-0.836		pCi/g						
Radium-226		0.885	+/-0.169	0.149	0.0672	+/-0.186		pCi/g						
Radium-228		1.05	+/-0.277	0.0347	0.00	+/-0.319		pCi/g						
Thallium-208		0.333	+/-0.088	0.083	0.0379	+/-0.0929		pCi/g						
Tin-126	U	0.0559	+/-0.149	0.190	0.0908	+/-0.149		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		17.2	+/-4.26	3.90	1.64	+/-5.46	4.00	pCi/g		KXB2	12/17/15	0733	1531241	3
Beta		22.5	+/-3.10	2.84	1.30	+/-4.45	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2.3/Ga-01-R
3	EPA 900.0/SW846 9310:SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R6.1
Sample ID: 386515009

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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

GEL LABORATORIES LLC

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.6.2
 Sample ID: 392031005
 Matrix: Soil
 Collect Date: 20-NOV-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 20%

Project: MJWC00115
 Client ID: MJWC001

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

Gamma with Ingrowth "Dry Weight Corrected"

Actinium-227	U	-0.0781	+/-0.306	0.563	0.265	+/-0.309		pCi/g		MXR1	03/07/16	0636	1547790	1
Antimony-125	U	-0.0503	+/-0.124	0.219	0.102	+/-0.126		pCi/g						
Bismuth-212	UI	0.00	+/-0.642	1.26	0.584	+/-0.901		pCi/g						
Bismuth-214		0.886	+/-0.195	0.143	0.0654	+/-0.211		pCi/g						
Cesium-137		2.11	+/-0.168	0.0643	0.0286	+/-0.256	0.100	pCi/g						
Cobalt-60	U	-0.00349	+/-0.0364	0.0723	0.0305	+/-0.0364		pCi/g						
Europium-154	U	0.0433	+/-0.109	0.217	0.0931	+/-0.111		pCi/g						
Lead-212		1.10	+/-0.144	0.124	0.0587	+/-0.177		pCi/g						
Lead-214		0.848	+/-0.213	0.176	0.0824	+/-0.227		pCi/g						
Potassium-40		12.1	+/-1.43	0.708	0.299	+/-1.76		pCi/g						
Protactinium-231	UI	0.00	+/-0.707	1.26	0.599	+/-0.812		pCi/g						
Radium-226		0.886	+/-0.195	0.143	0.0654	+/-0.211		pCi/g						
Radium-228		0.921	+/-0.284	0.278	0.124	+/-0.319		pCi/g						
Thallium-208		0.286	+/-0.0902	0.0648	0.0292	+/-0.0937		pCi/g						
Tin-126	U	0.00492	+/-0.108	0.196	0.0943	+/-0.108		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, solid "Dry Weight Corrected"

Alpha		11.4	+/-3.06	3.05	1.28	+/-3.75	4.00	pCi/g		JXB7	03/03/16	1123	1547849	2
Beta		22.6	+/-2.56	2.29	1.06	+/-4.12	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	02/25/16	1518	1547782

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5 2.3/Ga-01-R
2	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.6.2
Sample ID: 392031005

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
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Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R7.1
 Sample ID: 386515010
 Matrix: Soil
 Collect Date: 20-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 27.1%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		27.1						percent		LYT1	12/02/15	1224	1527662	1
Rad Gamma Spec Analysis														
<i>Gammascpec. Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0526	+/-0.363	0.650	0.302	+/-0.364		pCi/g		RXF2	12/24/15	0717	1528027	2
Antimony-125	U	-0.0496	+/-0.142	0.261	0.118	+/-0.144		pCi/g						
Bismuth-212	UI	0.00	+/-0.881	1.91	0.869	+/-1.22		pCi/g						
Bismuth-214		0.819	+/-0.227	0.215	0.0968	+/-0.237		pCi/g						
Cesium-137		0.840	+/-0.143	0.115	0.0512	+/-0.158	0.100	pCi/g						
Cobalt-60	U	-0.000731	+/-0.0515	0.108	0.0441	+/-0.0515		pCi/g						
Europium-154	U	0.016	+/-0.193	0.394	0.169	+/-0.193		pCi/g						
Lead-212		1.16	+/-0.163	0.146	0.068	+/-0.189		pCi/g						
Lead-214		0.971	+/-0.229	0.202	0.0925	+/-0.243		pCi/g						
Potassium-40		11.8	+/-2.11	0.983	0.390	+/-2.34		pCi/g						
Protactinium-231	UI	0.00	+/-0.855	1.04	0.470	+/-0.873		pCi/g						
Radium-226		0.819	+/-0.227	0.215	0.0968	+/-0.237		pCi/g						
Radium-228		1.20	+/-0.631	0.426	0.186	+/-0.647		pCi/g						
Thallium-208		0.227	+/-0.090	0.114	0.0513	+/-0.092		pCi/g						
Tin-126	UI	0.00	+/-0.220	0.180	0.0854	+/-0.221		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC. Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		18.9	+/-4.75	3.94	1.58	+/-6.04	4.00	pCi/g		KXB2	12/17/15	0736	1531241	3
Beta		24.8	+/-3.69	3.74	1.73	+/-5.26	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2.3/Ga-01-R
3	EPA 900.0/SW846.9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R7.1
Sample ID: 386515010

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

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

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
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 Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.7.2
 Sample ID: 392031006
 Matrix: Soil
 Collect Date: 20-NOV-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 20.8%

Project: MJWC00115
 Client ID: MJWC001

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

Gamma with Ingrowth "Dry Weight Corrected"

Actinium-227	U	-0.157	+/-0.271	0.479	0.225	+/-0.281		pCi/g		MXR1	03/07/16	0636	1547790	1
Antimony-125	U	-0.0572	+/-0.112	0.203	0.0942	+/-0.115		pCi/g						
Bismuth-212		1.25	+/-0.739	0.899	0.401	+/-0.750		pCi/g						
Bismuth-214		0.886	+/-0.178	0.141	0.0645	+/-0.193		pCi/g						
Cesium-137		0.235	+/-0.0794	0.0786	0.0358	+/-0.0818	0.100	pCi/g						
Cobalt-60	U	-0.000478	+/-0.0434	0.0851	0.0368	+/-0.0434		pCi/g						
Europium-154	U	-0.0807	+/-0.153	0.272	0.121	+/-0.157		pCi/g						
Lead-212		1.07	+/-0.119	0.104	0.0492	+/-0.177		pCi/g						
Lead-214		1.15	+/-0.181	0.140	0.0649	+/-0.206		pCi/g						
Potassium-40		14.0	+/-1.58	0.765	0.326	+/-2.08		pCi/g						
Protactinium-231	UI	0.00	+/-0.839	0.835	0.388	+/-0.881		pCi/g						
Radium-226		0.886	+/-0.178	0.141	0.0645	+/-0.193		pCi/g						
Radium-228	UI	0.00	+/-0.305	0.554	0.262	+/-0.499		pCi/g						
Thallium-208		0.233	+/-0.103	0.0738	0.0337	+/-0.104		pCi/g						
Tin-126	UI	0.00	+/-0.0894	0.0982	0.047	+/-0.0933		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, solid "Dry Weight Corrected"

Alpha		14.8	+/-4.35	3.65	1.40	+/-5.14	4.00	pCi/g		JXB7	03/03/16	1123	1547849	2
Beta		19.9	+/-3.29	3.23	1.47	+/-4.25	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	02/25/16	1518	1547782

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4 5 2 3/Ga-01-R
2	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.7.2
Sample ID: 392031006

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer Recovery	Test												Batch ID	Recovery%	Acceptable Limits

Notes:

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

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R.7.5
 Sample ID: 386429002
 Matrix: Water
 Collect Date: 20-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client

Project: MJWC00115
 Client ID: MJWC001

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

Gammaspac, Gamma, Liquid (Standard List) "As Received"

Actinium-227	U	-8.43	+/-30.6	53.7	25.3	+/-30.8		pCi/L		MJH1	12/18/15	0709	1529228	1
Antimony-125	U	-9.64	+/-10.5	18.0	8.25	+/-11.4		pCi/L						
Bismuth-212	U	0.386	+/-65.2	103	46.5	+/-65.2		pCi/L						
Bismuth-214	U	6.52	+/-10.9	19.2	8.97	+/-11.3		pCi/L						
Cesium-137	U	-2.93	+/-4.45	6.23	2.76	+/-4.64	10.0	pCi/L						
Cobalt-60	U	1.54	+/-4.35	8.97	3.93	+/-4.40		pCi/L						
Europium-154	U	1.09	+/-12.9	24.7	10.8	+/-12.9		pCi/L						
Lead-212	U	-4.89	+/-8.53	13.7	6.53	+/-8.82		pCi/L						
Lead-214	U	7.40	+/-13.2	18.2	8.58	+/-13.6		pCi/L						
Potassium-40	U	46.2	+/-49.8	107	47.8	+/-54.1		pCi/L						
Protactinium-231	U	-5.4	+/-56.8	101	47.1	+/-56.9		pCi/L						
Radium-228	U	11.6	+/-16.4	33.3	15.1	+/-17.2		pCi/L						
Thallium-208	U	-3.33	+/-5.30	7.72	3.52	+/-5.52		pCi/L						
Tin-126	U	-7.14	+/-10.4	15.4	7.33	+/-10.9		pCi/L						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, liquid "As Received"

Alpha	U	0.0588	+/-1.60	3.27	1.33	+/-1.60	5.00	pCi/L		KXB2	12/09/15	1115	1526940	2
Beta	U	1.75	+/-2.91	4.97	2.31	+/-2.92	5.00	pCi/L						

The following Analytical Methods were performed

Method	Description
1	EPA 901.1
2	EPA 900.0/SW846 9310

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Notes:

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

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Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R8.1
 Sample ID: 386515011
 Matrix: Soil
 Collect Date: 20-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 27.6%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Le	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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Gravimetric Solids

ASTM D 2216 % Moisture "As Received"

Moisture		27.6						percent		LYT1	12/02/15	1224	1527662	1
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Rad Gamma Spec Analysis

Gammascpec, Gamma, Solid "Dry Weight Corrected"

Actinium-227	U	-0.314	+/-0.306	0.539	0.250	+/-0.341		pCi/g		RXF2	12/24/15	0719	1528027	2
Antimony-125	U	-0.0583	+/-0.116	0.206	0.0937	+/-0.119		pCi/g						
Bismuth-212	UI	0.00	+/-0.664	1.28	0.581	+/-0.800		pCi/g						
Bismuth-214		0.777	+/-0.193	0.146	0.0653	+/-0.203		pCi/g						
Cesium-137		0.798	+/-0.115	0.0843	0.0377	+/-0.132	0.100	pCi/g						
Cobalt-60	U	0.00473	+/-0.044	0.0908	0.0385	+/-0.0441		pCi/g						
Europium-154	U	0.0273	+/-0.147	0.299	0.130	+/-0.148		pCi/g						
Lead-212		0.979	+/-0.141	0.126	0.0589	+/-0.164		pCi/g						
Lead-214		1.30	+/-0.220	0.395	0.191	+/-0.246		pCi/g						
Potassium-40		13.1	+/-1.62	0.674	0.268	+/-1.96		pCi/g						
Protactinium-231	UI	0.00	+/-0.632	0.984	0.453	+/-0.664		pCi/g						
Radium-226		0.777	+/-0.193	0.146	0.0653	+/-0.203		pCi/g						
Radium-228		1.03	+/-0.308	0.292	0.127	+/-0.336		pCi/g						
Thallium-208		0.267	+/-0.0854	0.0792	0.0356	+/-0.0882		pCi/g						
Tin-126	U	0.0648	+/-0.166	0.214	0.102	+/-0.167		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, solid "Dry Weight Corrected"

Alpha		12.3	+/-3.45	3.93	1.72	+/-4.18	4.00	pCi/g		KXB2	12/17/15	0737	1531241	3
Beta		20.8	+/-2.58	2.32	1.07	+/-3.96	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300, 4.5.2 3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits
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Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R&.1
Sample ID: 386515011

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.	
Surrogate/Tracer	Recovery	Test											Batch ID	Recovery%	Acceptable Limits

Notes:

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

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Project: MJWC00115
 Client ID: MJWC001

Client Sample ID: 4.3.B.R.8.2
 Sample ID: 392031007
 Matrix: Soil
 Collect Date: 20-NOV-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 21.9%

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Rad Gamma Spec Analysis														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	-0.28	+/-0.332	0.529	0.247	+/-0.358		pCi/g		MXR1	03/07/16	0700	1547790	1
Antimony-125	U	0.0211	+/-0.122	0.237	0.110	+/-0.122		pCi/g						
Bismuth-212	UI	0.00	+/-0.899	1.44	0.664	+/-1.04		pCi/g						
Bismuth-214		0.883	+/-0.215	0.140	0.063	+/-0.228		pCi/g						
Cesium-137		0.343	+/-0.0638	0.0935	0.0428	+/-0.0704	0.100	pCi/g						
Cobalt-60	U	0.0134	+/-0.0416	0.0886	0.0378	+/-0.042		pCi/g						
Europium-154	U	0.0794	+/-0.178	0.318	0.142	+/-0.182		pCi/g						
Lead-212		1.03	+/-0.148	0.129	0.0606	+/-0.178		pCi/g						
Lead-214		1.03	+/-0.211	0.354	0.171	+/-0.231		pCi/g						
Potassium-40		13.6	+/-1.72	1.01	0.444	+/-2.07		pCi/g						
Protactinium-231	U	-0.365	+/-0.688	1.22	0.572	+/-0.712		pCi/g						
Radium-226		0.883	+/-0.215	0.140	0.063	+/-0.228		pCi/g						
Radium-228		0.733	+/-0.356	0.349	0.157	+/-0.371		pCi/g						
Thallium-208		0.303	+/-0.0774	0.0779	0.0354	+/-0.0817		pCi/g						
Tin-126	UI	0.00	+/-0.114	0.154	0.073	+/-0.115		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A/B, solid "Dry Weight Corrected"

Alpha		12.0	+/-3.44	3.37	1.39	+/-4.14	4.00	pCi/g		JXB7	03/03/16	1124	1547849	2
Beta		15.3	+/-3.03	3.81	1.79	+/-3.76	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	02/25/16	1518	1547782

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5.2.3/Ga-01-R
2	EPA 900.0/SW846.9310/SM 7110B Modified

Surrogate/Tracer Recovery

Test

Batch ID Recovery% Acceptable Limits

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.8.2
Sample ID: 392031007

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer Recovery	Test							Batch ID	Recovery%	Acceptable Limits				

Notes:

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

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : MJW Corporation
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Client Sample ID: 4.3B.R9.1
 Sample ID: 386515012
 Matrix: Soil
 Collect Date: 20-NOV-15
 Receive Date: 30-NOV-15
 Collector: Client
 Moisture: 34.8%

Project: MJWC00115
 Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Gravimetric Solids														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		34.8						percent		LYT1	12/02/15	1224	1527662	1
Rad Gamma Spec Analysis														
<i>Gammasc. Gamma. Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.213	+/-0.356	0.640	0.299	+/-0.370		pCi/g		RXF2	12/24/15	0719	1528027	2
Antimony-125	U	-0.0462	+/-0.135	0.241	0.111	+/-0.137		pCi/g						
Bismuth-212	UI	0.00	+/-1.25	1.63	0.752	+/-1.49		pCi/g						
Bismuth-214		0.876	+/-0.243	0.189	0.0863	+/-0.256		pCi/g						
Cesium-137		0.745	+/-0.121	0.0819	0.0364	+/-0.139	0.100	pCi/g						
Cobalt-60	U	-0.00468	+/-0.0544	0.106	0.0456	+/-0.0545		pCi/g						
Europium-154	U	0.00991	+/-0.146	0.292	0.126	+/-0.146		pCi/g						
Lead-212		1.14	+/-0.178	0.203	0.0973	+/-0.205		pCi/g						
Lead-214		1.10	+/-0.199	0.388	0.187	+/-0.221		pCi/g						
Potassium-40		15.6	+/-1.92	0.887	0.371	+/-2.34		pCi/g						
Protactinium-231	UI	0.00	+/-0.806	0.928	0.422	+/-0.851		pCi/g						
Radium-226		0.876	+/-0.243	0.189	0.0863	+/-0.256		pCi/g						
Radium-228		1.09	+/-0.319	0.285	0.123	+/-0.354		pCi/g						
Thallium-208		0.322	+/-0.0876	0.0813	0.0365	+/-0.0922		pCi/g						
Tin-126	UI	0.00	+/-0.150	0.124	0.0569	+/-0.151		pCi/g						
Rad Gas Flow Proportional Counting														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		11.6	+/-3.65	3.90	1.63	+/-4.28	4.00	pCi/g		KXB2	12/17/15	0737	1531241	3
Beta		22.1	+/-3.21	3.16	1.46	+/-4.53	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	LYT1	12/02/15	1224	1527662

The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DOE HASL 300.4.5.2 3/Ga-01-R
3	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery	Test	Batch ID	Recovery%	Acceptable Limits

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : MJW Corporation
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: December 28, 2015

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3B.R9.1
Sample ID: 386515012

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

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

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Certificate of Analysis

Company : MJW Technical Services
 Address : 15 Hazelwood Drive
 Suite 112
 Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
 Project: Soil Radioisotopes

Project: MJWC00115
 Client ID: MJWC001

Client Sample ID: 4.3.B.R.9.2
 Sample ID: 392031008
 Matrix: Soil
 Collect Date: 20-NOV-15
 Receive Date: 25-FEB-16
 Collector: Client
 Moisture: 22.4%

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPC	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
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Rad Gamma Spec Analysis

Gamma with Ingrowth "Dry Weight Corrected"

Actinium-227	U	-0.0448	+/-0.261	0.491	0.231	+/-0.261		pCi/g		MXR1	03/07/16	0700	1547790	1
Antimony-125	U	-0.051	+/-0.113	0.202	0.0935	+/-0.116		pCi/g						
Bismuth-212	UI	0.00	+/-0.889	1.16	0.533	+/-1.02		pCi/g						
Bismuth-214		0.726	+/-0.160	0.121	0.0545	+/-0.171		pCi/g						
Cesium-137		2.02	+/-0.158	0.071	0.0322	+/-0.228	0.100	pCi/g						
Cobalt-60	U	-0.00539	+/-0.0374	0.0729	0.0311	+/-0.0375		pCi/g						
Europium-154	U	-0.0806	+/-0.121	0.213	0.092	+/-0.126		pCi/g						
Lead-212		1.04	+/-0.125	0.113	0.0536	+/-0.156		pCi/g						
Lead-214		0.944	+/-0.205	0.142	0.066	+/-0.220		pCi/g						
Potassium-40		16.7	+/-1.55	0.578	0.237	+/-2.13		pCi/g						
Protactinium-231	UI	0.00	+/-0.772	0.951	0.446	+/-0.792		pCi/g						
Radium-226		0.726	+/-0.160	0.121	0.0545	+/-0.171		pCi/g						
Radium-228		1.26	+/-0.247	0.229	0.100	+/-0.313		pCi/g						
Thallium-208		0.360	+/-0.082	0.0732	0.0336	+/-0.0873		pCi/g						
Tin-126	UI	0.00	+/-0.120	0.165	0.0793	+/-0.121		pCi/g						

Rad Gas Flow Proportional Counting

GFPC, Gross A B, solid "Dry Weight Corrected"

Alpha		13.3	+/-3.78	3.91	1.65	+/-4.57	4.00	pCi/g		JXB7	03/03/16	1124	1547849	2
Beta		23.4	+/-3.21	3.09	1.43	+/-4.61	10.0	pCi/g						

The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	02/25/16	1518	1547782

The following Analytical Methods were performed

Method	Description
1	DOE HASL 300, 4.5.2.3/Ga-01-R
2	EPA 900.0/SW846 9310/SM 7110B Modified

Surrogate/Tracer Recovery

Test

Batch ID Recovery% Acceptable Limits

GEL LABORATORIES LLC

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

Certificate of Analysis

Company : MJW Technical Services
Address : 15 Hazelwood Drive
Suite 112
Buffalo, New York 14228

Report Date: March 8, 2016

Contact: Ms. Laurie Losey
Project: Soil Radioisotopes

Client Sample ID: 4.3.B.R.9.2
Sample ID: 392031008

Project: MJWC00115
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
Surrogate/Tracer	Recovery	Test						Batch ID	Recovery%	Acceptable Limits				

Notes:

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