

Appendix G-  
Sub-Area 3.1.11- 3.1.15- COA

# GEL LABORATORIES LLC

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

## Certificate of Analysis

Report Date: December 4, 2015

Company : MJW Corporation  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.11.E.1

Project: MJWC00115

Sample ID: 385070002

Client ID: MJWC001

Matrix: Soil

Collect Date: 21-OCT-15 13:35

Receive Date: 05-NOV-15

Collector: Client

Moisture: 22.8%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Gravimetric Solids												
ASTM D 2216 % Moisture "As Received"												
Moisture		22.8				percent		CXC1	11/10/15	1319	1521842	1
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid "Dry Weight Corrected"												
Actinium-227	U	0.167	+/-0.254	0.482		pCi/g		RXF2	12/03/15	0846	1522383	2
Antimony-125	U	0.0531	+/-0.104	0.197		pCi/g						
Cesium-137		0.984	+/-0.0988	0.0738	0.100	pCi/g						
Cobalt-60	U	-0.0236	+/-0.0349	0.060		pCi/g						
Europium-154	U	0.145	+/-0.131	0.255		pCi/g						
Protactinium-231	U	0.476	+/-0.572	0.840		pCi/g						
Radium-226		0.946	+/-0.149	0.123		pCi/g						
Radium-228		1.23	+/-0.325	0.266		pCi/g						
Tin-126	UI	0.00	+/-0.126	0.135		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		13.8	+/-3.32	3.46	4.00	pCi/g		KXB2	12/02/15	1112	1525757	3
Beta		21.0	+/-2.81	3.25	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	11/10/15	1319	1521842

The following Analytical Methods were performed:

Method	Description	Analyst Comments
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	

### Notes:

Counting Uncertainty is 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.11.E.1  
Sample ID: 385070002  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 22.8%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.8						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma. Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.167	+/-0.254	0.482	0.228	+/-0.266		pCi/g		RXF2	12/03/15	0846	1522383	2
Antimony-125	U	0.0531	+/-0.104	0.197	0.0925	+/-0.107		pCi/g						
Bismuth-212		1.53	+/-0.832	0.628	0.279	+/-0.847		pCi/g						
Bismuth-214		0.946	+/-0.149	0.123	0.057	+/-0.168		pCi/g						
Cesium-137		0.984	+/-0.0988	0.0738	0.0343	+/-0.127	0.100	pCi/g						
Cobalt-60	U	-0.0236	+/-0.0349	0.060	0.0261	+/-0.0365		pCi/g						
Europium-154	UI	0.00	+/-0.131	0.255	0.117	+/-0.147		pCi/g						
Lead-212		1.29	+/-0.129	0.112	0.0531	+/-0.166		pCi/g						
Lead-214		1.23	+/-0.191	0.139	0.0653	+/-0.216		pCi/g						
Potassium-40		16.5	+/-1.34	0.455	0.189	+/-1.96		pCi/g						
Protactinium-231	UI	0.00	+/-0.572	0.840	0.394	+/-0.582		pCi/g						
Radium-226		0.946	+/-0.149	0.123	0.057	+/-0.168		pCi/g						
Radium-228		1.23	+/-0.325	0.266	0.122	+/-0.381		pCi/g						
Thallium-208		0.364	+/-0.0786	0.0624	0.0288	+/-0.0843		pCi/g						
Tin-126	UI	0.00	+/-0.126	0.135	0.064	+/-0.128		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		13.8	+/-3.32	3.46	1.51	+/-4.33	4.00	pCi/g		KXB2	12/02/15	1112	1525757	3
Beta		21.0	+/-2.81	3.25	1.54	+/-4.09	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	11/10/15	1319	1521842

### 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.I.11.E.1  
Sample ID: 385070002

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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.11.E.1  
Sample ID: 385070002  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 22.8%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.8						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gamma spec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.167	+/-0.254	0.482	0.228	+/-0.266		pCi/g		RXF2	12/03/15	0846	1522383	2
Antimony-125	U	0.0531	+/-0.104	0.197	0.0925	+/-0.107		pCi/g						
Bismuth-212		1.53	+/-0.832	0.628	0.279	+/-0.847		pCi/g						
Bismuth-214		0.946	+/-0.149	0.123	0.057	+/-0.168		pCi/g						
Cesium-137		0.984	+/-0.0988	0.0738	0.0343	+/-0.127	0.100	pCi/g						
Cobalt-60	U	-0.0236	+/-0.0349	0.060	0.0261	+/-0.0365		pCi/g						
Europium-154	UI	0.00	+/-0.131	0.255	0.117	+/-0.147		pCi/g						
Lead-212		1.29	+/-0.129	0.112	0.0531	+/-0.166		pCi/g						
Lead-214		1.23	+/-0.191	0.139	0.0653	+/-0.216		pCi/g						
Potassium-40		16.5	+/-1.34	0.455	0.189	+/-1.96		pCi/g						
Protactinium-231	UI	0.00	+/-0.572	0.840	0.394	+/-0.582		pCi/g						
Radium-226		0.946	+/-0.149	0.123	0.057	+/-0.168		pCi/g						
Radium-228		1.23	+/-0.325	0.266	0.122	+/-0.381		pCi/g						
Thallium-208		0.364	+/-0.0786	0.0624	0.0288	+/-0.0843		pCi/g						
Tin-126	UI	0.00	+/-0.126	0.135	0.064	+/-0.128		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		13.8	+/-3.32	3.46	1.51	+/-4.33	4.00	pCi/g		KXB2	12/02/15	1112	1525757	3
Beta		21.0	+/-2.81	3.25	1.54	+/-4.09	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	11/10/15	1319	1521842

### 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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Project: MJWC00115  
Client ID: MJWC001

Client Sample ID: 3.1.11.E.1  
Sample ID: 385070002

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 : MFW Technical Services  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: February 10, 2016

Client Sample ID: 3.1.11.E.2  
Sample ID: 389296007  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 14-JAN-16  
Collector: Client  
Moisture: 22.8%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.8						percent		CXC1	01/14/16	1208	1537312	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	-0.00461	+/-0.300	0.560	0.263	+/-0.300		pCi/g		RXF2	02/05/16	0744	1537546	2
Antimony-125	U	-0.0709	+/-0.134	0.232	0.107	+/-0.138		pCi/g						
Bismuth-212		1.07	+/-0.710	1.05	0.472	+/-0.718		pCi/g						
Bismuth-214		1.18	+/-0.200	0.157	0.0714	+/-0.223		pCi/g						
Cesium-137		1.35	+/-0.136	0.0821	0.0371	+/-0.174	0.100	pCi/g						
Cobalt-60	U	0.00937	+/-0.0501	0.0994	0.0434	+/-0.0503		pCi/g						
Europium-154	U	0.0862	+/-0.145	0.301	0.133	+/-0.150		pCi/g						
Lead-212		1.25	+/-0.134	0.113	0.053	+/-0.216		pCi/g						
Lead-214		1.17	+/-0.174	0.171	0.0798	+/-0.208		pCi/g						
Potassium-40		15.4	+/-1.72	0.931	0.404	+/-2.20		pCi/g						
Protactinium-231	UI	0.00	+/-0.763	0.960	0.446	+/-0.787		pCi/g						
Radium-226		1.18	+/-0.200	0.157	0.0714	+/-0.223		pCi/g						
Radium-228		1.23	+/-0.388	0.266	0.116	+/-0.433		pCi/g						
Thallium-208		0.424	+/-0.0832	0.0755	0.0342	+/-0.0906		pCi/g						
Tin-126	UI	0.00	+/-0.0899	0.112	0.0537	+/-0.0937		pCi/g						
<i>Gamma spec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.127	+/-0.443	0.805	0.375	+/-0.447		pCi/g		RXF2	01/18/16	1004	1537545	3
Antimony-125	U	-0.0984	+/-0.166	0.291	0.131	+/-0.172		pCi/g						
Bismuth-212	U	0.371	+/-0.956	1.93	0.866	+/-0.971		pCi/g						
Bismuth-214		0.918	+/-0.235	0.220	0.0972	+/-0.246		pCi/g						
Cesium-137		1.44	+/-0.183	0.115	0.0503	+/-0.216	0.100	pCi/g						
Cobalt-60	U	-0.0486	+/-0.0489	0.0725	0.0239	+/-0.0537		pCi/g						
Europium-154	U	-0.0346	+/-0.174	0.349	0.141	+/-0.175		pCi/g						
Lead-212		1.41	+/-0.181	0.163	0.0759	+/-0.216		pCi/g						
Lead-214		0.988	+/-0.250	0.221	0.100	+/-0.263		pCi/g						
Potassium-40		14.7	+/-2.43	1.42	0.585	+/-2.74		pCi/g						
Protactinium-231	UI	0.00	+/-1.16	1.20	0.543	+/-1.20		pCi/g						
Radium-226		0.918	+/-0.235	0.220	0.0972	+/-0.246		pCi/g						
Radium-228		1.78	+/-0.417	0.537	0.236	+/-0.469		pCi/g						
Thallium-208		0.316	+/-0.121	0.115	0.051	+/-0.123		pCi/g						
Tin-126	U	0.0695	+/-0.156	0.233	0.111	+/-0.157		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		12.4	+/-3.64	3.93	1.67	+/-4.37	4.00	pCi/g		KXB2	01/26/16	1150	1539462	4
Beta		23.1	+/-3.44	4.18	1.99	+/-4.78	10.0	pCi/g						

# 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.1.11.E.2  
Sample ID: 389296007

Report Date: February 10, 2016

Project: MJWC00115  
Client ID: MJWC001

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

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1208	1537312

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

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

Report Date: December 4, 2015

Company : MJW Corporation  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.L.12.E.1  
Sample ID: 385070003  
Matrix: Soil  
Collect Date: 21-OCT-15 10:25  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 22.6%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
-----------	-----------	--------	-------------	-----	----	-------	----	---------	------	------	-------	--------

### Gravimetric Solids

#### ASTM D 2216 % Moisture "As Received"

Moisture		22.6				percent	CXC1	11/10/15	1319	1521842		1
----------	--	------	--	--	--	---------	------	----------	------	---------	--	---

### Rad Gamma Spec Analysis

#### GammaSpec, Gamma, Solid "Dry Weight Corrected"

Actinium-227	U	0.0126	+/-0.297	0.538		pCi/g	RXF2	12/03/15	0846	1522383		2
Antimony-125	U	-0.107	+/-0.111	0.189		pCi/g						
Cesium-137		1.05	+/-0.120	0.0736	0.100	pCi/g						
Cobalt-60	U	-0.0284	+/-0.0415	0.072		pCi/g						
Europium-154	U	0.0371	+/-0.134	0.251		pCi/g						
Protactinium-231	U	0.666	+/-0.642	0.997		pCi/g						
Radium-226		1.06	+/-0.187	0.145		pCi/g						
Radium-228		1.41	+/-0.282	0.259		pCi/g						
Tin-126	UI	0.00	+/-0.133	0.157		pCi/g						

### Rad Gas Flow Proportional Counting

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

Alpha		16.3	+/-3.98	3.95	4.00	pCi/g	KXB2	12/02/15	1112	1525757		3
Beta		26.4	+/-3.40	4.01	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	11/10/15	1319	1521842

### The following Analytical Methods were performed:

Method	Description	Analyst	Comments
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		

### Notes:

Counting Uncertainty is 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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.12.E.1  
Sample ID: 385070003  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 22.6%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.6						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.0126	+/-0.297	0.538	0.256	+/-0.297		pCi/g		RXP2	12/03/15	0846	1522383	2
Antimony-125	U	-0.197	+/-0.111	0.189	0.0889	+/-0.121		pCi/g						
Bismuth-212	UI	0.00	+/-0.968	1.27	0.598	+/-1.17		pCi/g						
Bismuth-214		1.06	+/-0.187	0.145	0.0678	+/-0.208		pCi/g						
Cesium-137		1.05	+/-0.120	0.0736	0.0342	+/-0.151	0.100	pCi/g						
Cobalt-60	U	-0.0284	+/-0.0415	0.072	0.0321	+/-0.0435		pCi/g						
Europium-154	U	0.0371	+/-0.134	0.251	0.115	+/-0.135		pCi/g						
Lead-212		1.35	+/-0.140	0.117	0.0559	+/-0.175		pCi/g						
Lead-214		1.40	+/-0.182	0.329	0.161	+/-0.212		pCi/g						
Potassium-40		18.3	+/-1.45	0.680	0.302	+/-2.13		pCi/g						
Protactinium-231	UI	0.00	+/-0.642	0.997	0.474	+/-0.659		pCi/g						
Radium-226		1.06	+/-0.187	0.145	0.0678	+/-0.208		pCi/g						
Radium-228		1.41	+/-0.282	0.259	0.119	+/-0.319		pCi/g						
Thallium-208		0.407	+/-0.071	0.0677	0.0315	+/-0.0791		pCi/g						
Tin-126	UI	0.00	+/-0.133	0.157	0.0756	+/-0.135		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A B, solid "Dry Weight Corrected"</i>														
Alpha		16.3	+/-3.98	3.95	1.69	+/-5.11	4.00	pCi/g		KXB2	12/02/15	1112	1525757	3
Beta		26.4	+/-3.40	4.01	1.91	+/-5.01	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	11/10/15	1319	1521842

### 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.I.12.E.1  
Sample ID: 385070003

Report Date: December 17, 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

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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.12.E.1  
Sample ID: 385070003  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 22.6%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.6						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.0126	+/-0.297	0.538	0.256	+/-0.297		pCi/g		RXF2	12/03/15	0846	1522383	2
Antimony-125	U	-0.107	+/-0.111	0.189	0.0889	+/-0.121		pCi/g						
Bismuth-212	UI	0.00	+/-0.968	1.27	0.598	+/-1.17		pCi/g						
Bismuth-214		1.06	+/-0.187	0.145	0.0678	+/-0.208		pCi/g						
Cesium-137		1.05	+/-0.120	0.0736	0.0342	+/-0.151	0.100	pCi/g						
Cobalt-60	U	-0.0284	+/-0.0415	0.072	0.0321	+/-0.0435		pCi/g						
Europium-154	U	0.0371	+/-0.134	0.251	0.115	+/-0.135		pCi/g						
Lead-212		1.35	+/-0.140	0.117	0.0559	+/-0.175		pCi/g						
Lead-214		1.40	+/-0.182	0.329	0.161	+/-0.212		pCi/g						
Potassium-40		18.3	+/-1.45	0.680	0.302	+/-2.13		pCi/g						
Protactinium-231	UI	0.00	+/-0.642	0.997	0.474	+/-0.659		pCi/g						
Radium-226		1.06	+/-0.187	0.145	0.0678	+/-0.208		pCi/g						
Radium-228		1.41	+/-0.282	0.259	0.119	+/-0.319		pCi/g						
Thallium-208		0.407	+/-0.071	0.0677	0.0315	+/-0.0791		pCi/g						
Tin-126	UI	0.00	+/-0.133	0.157	0.0756	+/-0.135		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		16.3	+/-3.98	3.95	1.69	+/-5.11	4.00	pCi/g		KXB2	12/02/15	1112	1525757	3
Beta		26.4	+/-3.40	4.01	1.91	+/-5.01	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	11/10/15	1319	1521842

### 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.12.E.1  
Sample ID: 385070003

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

Report Date: February 10, 2016

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.12.E.2  
Sample ID: 389296008  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 14-JAN-16  
Collector: Client  
Moisture: 22.7%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.7						percent		CXC1	01/14/16	1208	1537312	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0241	+/-0.308	0.549	0.260	+/-0.308		pCi/g		RXF2	02/05/16	0745	1537546	2
Antimony-125	U	-0.0245	+/-0.114	0.203	0.095	+/-0.114		pCi/g						
Bismuth-212	UI	0.00	+/-0.809	1.35	0.637	+/-1.31		pCi/g						
Bismuth-214		1.17	+/-0.153	0.127	0.0584	+/-0.181		pCi/g						
Cesium-137		1.43	+/-0.117	0.0674	0.031	+/-0.164	0.100	pCi/g						
Cobalt-60	U	-0.0119	+/-0.039	0.0668	0.0293	+/-0.0394		pCi/g						
Europium-154	U	-0.0941	+/-0.130	0.222	0.0998	+/-0.137		pCi/g						
Lead-212		1.32	+/-0.132	0.110	0.0518	+/-0.169		pCi/g						
Lead-214		1.15	+/-0.210	0.324	0.158	+/-0.230		pCi/g						
Potassium-40		16.3	+/-1.34	0.641	0.280	+/-1.95		pCi/g						
Protactinium-231	U	0.214	+/-0.606	1.02	0.482	+/-0.615		pCi/g						
Radium-226		1.17	+/-0.153	0.127	0.0584	+/-0.181		pCi/g						
Radium-228		1.27	+/-0.300	0.261	0.119	+/-0.362		pCi/g						
Thallium-208		0.371	+/-0.0751	0.074	0.0345	+/-0.0812		pCi/g						
Tin-126	U	0.0343	+/-0.159	0.194	0.0936	+/-0.160		pCi/g						
<i>Gamma spec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.203	+/-0.260	0.461	0.214	+/-0.278		pCi/g		RXF2	01/18/16	1120	1537545	3
Antimony-125	U	0.0615	+/-0.116	0.223	0.103	+/-0.119		pCi/g						
Bismuth-212	UI	0.00	+/-0.843	1.46	0.676	+/-0.997		pCi/g						
Bismuth-214		1.00	+/-0.174	0.147	0.0668	+/-0.193		pCi/g						
Cesium-137		1.35	+/-0.141	0.0947	0.0435	+/-0.177	0.100	pCi/g						
Cobalt-60	U	-0.0423	+/-0.0438	0.070	0.0289	+/-0.0479		pCi/g						
Europium-154	U	0.101	+/-0.143	0.300	0.134	+/-0.150		pCi/g						
Lead-212		1.28	+/-0.131	0.108	0.0508	+/-0.217		pCi/g						
Lead-214		1.21	+/-0.182	0.355	0.172	+/-0.216		pCi/g						
Potassium-40		16.5	+/-1.65	0.750	0.315	+/-2.20		pCi/g						
Protactinium-231	UI	0.00	+/-0.805	0.936	0.435	+/-0.816		pCi/g						
Radium-226		1.00	+/-0.174	0.147	0.0668	+/-0.193		pCi/g						
Radium-228		1.42	+/-0.294	0.208	0.0874	+/-0.368		pCi/g						
Thallium-208		0.466	+/-0.0933	0.0706	0.0318	+/-0.101		pCi/g						
Tin-126	UI	0.00	+/-0.0929	0.106	0.0503	+/-0.0949		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A-B, solid "Dry Weight Corrected"</i>														
Alpha		13.2	+/-3.71	3.89	1.65	+/-4.51	4.00	pCi/g		KXB2	01/26/16	1156	1539462	4
Beta		26.2	+/-3.18	2.87	1.33	+/-5.03	10.0	pCi/g						

# 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.1.12.E.2  
Sample ID: 389296008

Report Date: February 10, 2016

Project: MJWC00115  
Client ID: MJWC001

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

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1208	1537312

### 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	DOE HASL 300, 4 5.2.3/Ga-01-R
4	EPA 900.0/SW846 9310/SM 7110B Modified

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

Report Date: December 4, 2015

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

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.13.R.1  
Sample ID: 385070004  
Matrix: Soil  
Collect Date: 21-OCT-15 10:55  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 20.5%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Gravimetric Solids												
ASTM D 2216 % Moisture "As Received"												
Moisture		20.5				percent		CXC1	11/10/15	1319	1521842	1
Rad Gamma Spec Analysis												
Gammascpec, Gamma, Solid "Dry Weight Corrected"												
Actinium-227	U	0.121	+/-0.266	0.537		pCi/g		RXF2	12/03/15	0847	1522383	2
Antimony-125	U	-0.0425	+/-0.111	0.201		pCi/g						
Cesium-137		0.966	+/-0.126	0.107	0.100	pCi/g						
Cobalt-60	U	0.0291	+/-0.0422	0.0935		pCi/g						
Europium-154	U	0.0314	+/-0.136	0.273		pCi/g						
Protactinium-231	U	0.908	+/-0.859	0.968		pCi/g						
Radium-226		0.964	+/-0.208	0.146		pCi/g						
Radium-228		0.679	+/-0.385	0.302		pCi/g						
Tin-126	U	0.112	+/-0.124	0.135		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		8.17	+/-2.26	2.68	4.00	pCi/g		KXB2	12/02/15	1114	1525757	3
Beta		16.3	+/-2.09	2.47	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	11/10/15	1319	1521842

### The following Analytical Methods were performed:

Method	Description	Analyst Comments
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	

### Notes:

Counting Uncertainty is 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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.13.R.1  
Sample ID: 385070004  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 20.5%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		20.5						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.121	+/-0.266	0.537	0.251	+/-0.272		pCi/g		RXF2	12/03/15	0847	1522383	2
Antimony-125	U	-0.0425	+/-0.111	0.201	0.0921	+/-0.113		pCi/g						
Bismuth-212		1.86	+/-0.689	1.07	0.479	+/-0.713		pCi/g						
Bismuth-214		0.964	+/-0.208	0.146	0.0658	+/-0.224		pCi/g						
Cesium-137		0.966	+/-0.126	0.107	0.0493	+/-0.149	0.100	pCi/g						
Cobalt-60	U	0.0291	+/-0.0422	0.0935	0.0404	+/-0.0442		pCi/g						
Europium-154	U	0.0314	+/-0.136	0.273	0.119	+/-0.137		pCi/g						
Lead-212		1.04	+/-0.161	0.137	0.0647	+/-0.182		pCi/g						
Lead-214		0.786	+/-0.218	0.159	0.0736	+/-0.228		pCi/g						
Potassium-40		10.9	+/-1.55	0.407	0.140	+/-1.81		pCi/g						
Protactinium-231	UI	0.00	+/-0.859	0.968	0.449	+/-0.883		pCi/g						
Radium-226		0.964	+/-0.208	0.146	0.0658	+/-0.224		pCi/g						
Radium-228		0.679	+/-0.385	0.302	0.134	+/-0.396		pCi/g						
Thallium-208		0.385	+/-0.077	0.0737	0.0332	+/-0.0841		pCi/g						
Tin-126	UI	0.00	+/-0.124	0.135	0.0638	+/-0.125		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		8.17	+/-2.26	2.68	1.19	+/-2.78	4.00	pCi/g		KXB2	12/02/15	1114	1525757	3
Beta		16.3	+/-2.09	2.47	1.18	+/-3.23	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	11/10/15	1319	1521842

### 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.13.R.1  
Sample ID: 385070004

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).

# 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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.13.R.1  
Sample ID: 385070004  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 20.5%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
ASTM D 2216 % Moisture "As Received"														
Moisture		20.5						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
GammaSpec, Gamma, Solid "Dry Weight Corrected"														
Actinium-227	U	0.121	+/-0.266	0.537	0.251	+/-0.272		pCi/g		RXF2	12/03/15	0847	1522383	2
Antimony-125	U	-0.0425	+/-0.111	0.201	0.0921	+/-0.113		pCi/g						
Bismuth-212		1.86	+/-0.689	1.07	0.479	+/-0.713		pCi/g						
Bismuth-214		0.964	+/-0.208	0.146	0.0658	+/-0.224		pCi/g						
Cesium-137		0.966	+/-0.126	0.107	0.0493	+/-0.149	0.100	pCi/g						
Cobalt-60	U	0.0291	+/-0.0422	0.0935	0.0404	+/-0.0442		pCi/g						
Europium-154	U	0.0314	+/-0.136	0.273	0.119	+/-0.137		pCi/g						
Lead-212		1.04	+/-0.161	0.137	0.0647	+/-0.182		pCi/g						
Lead-214		0.786	+/-0.218	0.159	0.0736	+/-0.228		pCi/g						
Potassium-40		10.9	+/-1.55	0.407	0.140	+/-1.81		pCi/g						
Protactinium-231	UI	0.00	+/-0.859	0.968	0.449	+/-0.883		pCi/g						
Radium-226		0.964	+/-0.208	0.146	0.0658	+/-0.224		pCi/g						
Radium-228		0.679	+/-0.385	0.302	0.134	+/-0.396		pCi/g						
Thallium-208		0.385	+/-0.077	0.0737	0.0332	+/-0.0841		pCi/g						
Tin-126	UI	0.00	+/-0.124	0.135	0.0638	+/-0.125		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
GFPC, Gross A.B. solid "Dry Weight Corrected"														
Alpha		8.17	+/-2.26	2.68	1.19	+/-2.78	4.00	pCi/g		KXB2	12/02/15	1114	1525757	3
Beta		16.3	+/-2.09	2.47	1.18	+/-3.23	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	11/10/15	1319	1521842

### 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 : MIW Corporation  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.13.R.1  
Sample ID: 385070004

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 Technical Services  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: February 10, 2016

Client Sample ID: 3.1.13.R.2  
Sample ID: 389296009  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 14-JAN-16  
Collector: Client  
Moisture: 22.4%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.4						percent		CXC1	01/14/16	1208	1537312	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	0.172	+/-0.331	0.631	0.297	+/-0.342		pCi/g		RXF2	02/05/16	0747	1537546	2
Antimony-125	U	-0.000515	+/-0.119	0.216	0.0987	+/-0.119		pCi/g						
Bismuth-212		1.52	+/-0.645	0.792	0.339	+/-0.666		pCi/g						
Bismuth-214		0.785	+/-0.179	0.171	0.0785	+/-0.193		pCi/g						
Cesium-137		0.991	+/-0.123	0.0733	0.0325	+/-0.153	0.100	pCi/g						
Cobalt-60	U	-0.022	+/-0.0518	0.0944	0.0404	+/-0.0527		pCi/g						
Europium-154	U	0.0246	+/-0.128	0.236	0.0998	+/-0.129		pCi/g						
Lead-212		1.10	+/-0.140	0.137	0.0642	+/-0.173		pCi/g						
Lead-214		0.998	+/-0.204	0.173	0.0804	+/-0.223		pCi/g						
Potassium-40		12.0	+/-1.63	0.917	0.392	+/-1.93		pCi/g						
Protactinium-231	UI	0.00	+/-0.903	1.05	0.485	+/-0.922		pCi/g						
Radium-226		0.785	+/-0.179	0.171	0.0785	+/-0.193		pCi/g						
Radium-228	UI	0.00	+/-0.328	0.650	0.307	+/-0.589		pCi/g						
Thallium-208		0.296	+/-0.074	0.0756	0.034	+/-0.0786		pCi/g						
Tin-126	U	0.0406	+/-0.114	0.213	0.102	+/-0.116		pCi/g						
<i>Gammasec. Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.113	+/-0.345	0.658	0.310	+/-0.349		pCi/g		RXF2	01/18/16	1121	1537545	3
Antimony-125	U	-0.000289	+/-0.143	0.264	0.123	+/-0.143		pCi/g						
Bismuth-212	UI	0.00	+/-1.21	1.65	0.763	+/-1.42		pCi/g						
Bismuth-214		0.618	+/-0.184	0.170	0.077	+/-0.191		pCi/g						
Cesium-137		1.10	+/-0.142	0.0823	0.0367	+/-0.168	0.100	pCi/g						
Cobalt-60	UI	0.00	+/-0.0285	0.0845	0.0354	+/-0.0348		pCi/g						
Europium-154	U	-0.0409	+/-0.139	0.258	0.111	+/-0.140		pCi/g						
Lead-212		0.986	+/-0.148	0.138	0.0648	+/-0.167		pCi/g						
Lead-214		0.994	+/-0.280	0.376	0.182	+/-0.290		pCi/g						
Potassium-40		11.8	+/-1.65	0.818	0.342	+/-1.95		pCi/g						
Protactinium-231	UI	0.00	+/-0.622	1.10	0.510	+/-0.638		pCi/g						
Radium-226		0.618	+/-0.184	0.170	0.077	+/-0.191		pCi/g						
Radium-228		1.11	+/-0.281	0.271	0.117	+/-0.315		pCi/g						
Thallium-208		0.326	+/-0.104	0.084	0.038	+/-0.107		pCi/g						
Tin-126	UI	0.00	+/-0.192	0.263	0.126	+/-0.193		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		11.9	+/-3.81	3.99	1.65	+/-4.44	4.00	pCi/g		KXB2	01/26/16	1152	1539462	4
Beta		21.9	+/-2.90	2.54	1.16	+/-4.31	10.0	pCi/g						

# 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: February 10, 2016

Client Sample ID: 3.1.13.R.2  
Sample ID: 389296009

Project: MJWC00115  
Client ID: MJWC001

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

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1208	1537312

### 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	DOE HASL 300.4.5 2.3/Ga-01-R
4	EPA 900 0/SW846 9310/SM 7110B Modified

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

Report Date: December 4, 2015

Company : MJW Corporation  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.14.R.1

Project: MJWC00115

Sample ID: 385070005

Client ID: MJWC001

Matrix: Soil

Collect Date: 21-OCT-15 10:20

Receive Date: 05-NOV-15

Collector: Client

Moisture: 18.3%

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Gravimetric Solids												
ASTM D 2216 % Moisture "As Received"												
Moisture		18.3				percent		CXC1	11/10/15	1319	1521842	1
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid "Dry Weight Corrected"												
Actinium-227	U	-0.143	+/-0.268	0.482		pCi/g		RXF2	12/03/15	0847	1522383	2
Antimony-125	U	-0.126	+/-0.101	0.173		pCi/g						
Cesium-137		1.36	+/-0.128	0.085	0.100	pCi/g						
Cobalt-60	U	-0.00901	+/-0.0442	0.0833		pCi/g						
Europium-154	U	0.00656	+/-0.118	0.232		pCi/g						
Protactinium-231	UI	0.00	+/-0.718	0.811		pCi/g						
Radium-226		0.770	+/-0.161	0.124		pCi/g						
Radium-228		0.988	+/-0.281	0.244		pCi/g						
Tin-126	UI	0.00	+/-0.0927	0.0936		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		9.96	+/-3.08	3.99	4.00	pCi/g		KXB2	12/02/15	1114	1525757	3
Beta		20.0	+/-2.46	3.06	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	11/10/15	1319	1521842

The following Analytical Methods were performed:

Method	Description	Analyst Comments
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	

### Notes:

Counting Uncertainty is 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.14.R.1  
Sample ID: 385070005  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 18.3%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		18.3						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>GammaSpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.143	+/-0.268	0.482	0.228	+/-0.277		pCi/g		RXF2	12/03/15	0847	1522383	2
Antimony-125	U	-0.126	+/-0.101	0.173	0.0796	+/-0.117		pCi/g						
Bismuth-212	UI	0.00	+/-0.555	1.14	0.523	+/-0.613		pCi/g						
Bismuth-214		0.770	+/-0.161	0.124	0.056	+/-0.173		pCi/g						
Cesium-137		1.36	+/-0.128	0.085	0.0392	+/-0.172	0.100	pCi/g						
Cobalt-60	U	-0.00901	+/-0.0442	0.0833	0.0364	+/-0.0444		pCi/g						
Europium-154	U	0.00656	+/-0.118	0.232	0.102	+/-0.118		pCi/g						
Lead-212		1.07	+/-0.112	0.101	0.0478	+/-0.173		pCi/g						
Lead-214		0.817	+/-0.194	0.137	0.0639	+/-0.207		pCi/g						
Potassium-40		11.5	+/-1.34	0.743	0.319	+/-1.74		pCi/g						
Protactinium-231	UI	0.00	+/-0.718	0.811	0.378	+/-0.749		pCi/g						
Radium-226		0.770	+/-0.161	0.124	0.056	+/-0.173		pCi/g						
Radium-228		0.988	+/-0.281	0.244	0.108	+/-0.310		pCi/g						
Thallium-208		0.277	+/-0.0893	0.0735	0.0338	+/-0.0924		pCi/g						
Tin-126	UI	0.00	+/-0.0927	0.0936	0.0449	+/-0.0948		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		9.96	+/-3.08	3.99	1.80	+/-3.70	4.00	pCi/g		KXB2	12/02/15	1114	1525757	3
Beta		20.0	+/-2.46	3.06	1.47	+/-3.86	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	11/10/15	1319	1521842

### 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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.14.R.1  
Sample ID: 385070005

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 17, 2015

Contact: Ms. Laurie Losey

Project: Soil Radioisotopes

Client Sample ID: 3.1.14.R.1

Sample ID: 385070005

Matrix: Soil

Collect Date: 21-OCT-15

Receive Date: 05-NOV-15

Collector: Client

Moisture: 18.3%

Project: MJWC00115

Client ID: MJWC001

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

### Gravimetric Solids

ASTM D 2216 % Moisture "As Received"

Moisture		18.3						percent		CXC1	11/10/15	1319	1521842	1
----------	--	------	--	--	--	--	--	---------	--	------	----------	------	---------	---

### Rad Gamma Spec Analysis

GammaSpec, Gamma, Solid "Dry Weight Corrected"

Actinium-227	U	-0.143	+/-0.268	0.482	0.228	+/-0.277		pCi/g		RXF2	12/03/15	0847	1522383	2
Antimony-125	U	-0.126	+/-0.101	0.173	0.0796	+/-0.117		pCi/g						
Bismuth-212	UI	0.00	+/-0.555	1.14	0.523	+/-0.613		pCi/g						
Bismuth-214		0.770	+/-0.161	0.124	0.056	+/-0.173		pCi/g						
Cesium-137		1.36	+/-0.128	0.085	0.0392	+/-0.172	0.100	pCi/g						
Cobalt-60	U	-0.00901	+/-0.0442	0.0833	0.0364	+/-0.0444		pCi/g						
Europium-154	U	0.00656	+/-0.118	0.232	0.102	+/-0.118		pCi/g						
Lead-212		1.07	+/-0.112	0.101	0.0478	+/-0.173		pCi/g						
Lead-214		0.817	+/-0.194	0.137	0.0639	+/-0.207		pCi/g						
Potassium-40		11.5	+/-1.34	0.743	0.319	+/-1.74		pCi/g						
Protactinium-231	UI	0.00	+/-0.718	0.811	0.378	+/-0.749		pCi/g						
Radium-226		0.770	+/-0.161	0.124	0.056	+/-0.173		pCi/g						
Radium-228		0.988	+/-0.281	0.244	0.108	+/-0.310		pCi/g						
Thallium-208		0.277	+/-0.0893	0.0735	0.0338	+/-0.0924		pCi/g						
Tin-126	UI	0.00	+/-0.0927	0.0936	0.0449	+/-0.0948		pCi/g						

### Rad Gas Flow Proportional Counting

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

Alpha		9.96	+/-3.08	3.99	1.80	+/-3.70	4.00	pCi/g		KXB2	12/02/15	1114	1525757	3
Beta		20.0	+/-2.46	3.06	1.47	+/-3.86	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	11/10/15	1319	1521842

### 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.1.14.R.1  
Sample ID: 385070005

Report Date: December 17, 2015

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lo	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 Technical Services  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228

Report Date: February 10, 2016

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.14.R.2  
Sample ID: 389296010  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 14-JAN-16  
Collector: Client  
Moisture: 19.4%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		19.4						percent		CXC1	01/14/16	1208	1537312	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	-0.172	+/-0.211	0.365	0.174	+/-0.226		pCi/g		RXF2	02/05/16	0842	1537546	2
Antimony-125	U	0.0178	+/-0.0897	0.160	0.0759	+/-0.0901		pCi/g						
Bismuth-212	UI	0.00	+/-0.621	0.663	0.305	+/-0.643		pCi/g						
Bismuth-214		0.869	+/-0.144	0.104	0.0486	+/-0.161		pCi/g						
Cesium-137		1.27	+/-0.0964	0.0564	0.0263	+/-0.140	0.100	pCi/g						
Cobalt-60	U	0.00241	+/-0.030	0.0568	0.0254	+/-0.030		pCi/g						
Europium-154	U	-0.0386	+/-0.0904	0.160	0.0719	+/-0.0921		pCi/g						
Lead-212		0.794	+/-0.104	0.0986	0.0475	+/-0.121		pCi/g						
Lead-214		0.915	+/-0.142	0.234	0.114	+/-0.159		pCi/g						
Potassium-40		11.9	+/-1.17	0.428	0.185	+/-1.60		pCi/g						
Protactinium-231	U	0.342	+/-0.443	0.775	0.370	+/-0.475		pCi/g						
Radium-226		0.869	+/-0.144	0.104	0.0486	+/-0.161		pCi/g						
Radium-228		1.02	+/-0.180	0.172	0.0779	+/-0.228		pCi/g						
Thallium-208		0.203	+/-0.0651	0.0563	0.0264	+/-0.0672		pCi/g						
Tin-126	UI	0.00	+/-0.084	0.126	0.061	+/-0.0858		pCi/g						
<i>Gammasec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0627	+/-0.280	0.518	0.242	+/-0.282		pCi/g		RXF2	01/18/16	1121	1537545	3
Antimony-125	U	-0.0142	+/-0.117	0.213	0.0982	+/-0.117		pCi/g						
Bismuth-212		1.77	+/-0.760	0.864	0.379	+/-0.781		pCi/g						
Bismuth-214		0.744	+/-0.173	0.129	0.0576	+/-0.184		pCi/g						
Cesium-137		1.37	+/-0.141	0.0746	0.0335	+/-0.180	0.100	pCi/g						
Cobalt-60	U	0.0227	+/-0.0403	0.0886	0.0381	+/-0.0417		pCi/g						
Europium-154	U	-0.0087	+/-0.139	0.269	0.118	+/-0.140		pCi/g						
Lead-212		0.942	+/-0.158	0.122	0.0574	+/-0.179		pCi/g						
Lead-214		0.764	+/-0.187	0.148	0.0681	+/-0.198		pCi/g						
Potassium-40		11.4	+/-1.46	0.591	0.234	+/-1.77		pCi/g						
Protactinium-231	UI	0.00	+/-0.706	0.953	0.443	+/-0.720		pCi/g						
Radium-226		0.744	+/-0.173	0.129	0.0576	+/-0.184		pCi/g						
Radium-228		0.952	+/-0.265	0.258	0.112	+/-0.302		pCi/g						
Thallium-208		0.200	+/-0.079	0.0639	0.0285	+/-0.0807		pCi/g						
Tin-126	UI	0.00	+/-0.0993	0.175	0.0841	+/-0.112		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		9.16	+/-3.18	3.99	1.75	+/-3.62	4.00	pCi/g		KXB2	01/26/16	1155	1539462	4
Beta		19.6	+/-2.47	2.29	1.06	+/-3.70	10.0	pCi/g						

# 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes  
Client Sample ID: 3.1.14.R.2  
Sample ID: 389296010

Report Date: February 10, 2016

Project: MJWC00115  
Client ID: MJWC001

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

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GL-RAD-A-021	CXC1	01/14/16	1208	1537312

### 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	DOE HASL 300, 4.5 2.3/Ga-01-R
4	EPA 900 0/SW846 9310/SM 7110B Modified

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

Report Date: December 4, 2015

Company : MJW Corporation  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.I.15.R.1  
Sample ID: 385070006  
Matrix: Soil  
Collect Date: 21-OCT-15 14:40  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 21.9%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Gravimetric Solids												
ASTM D 2216 % Moisture "As Received"												
Moisture		21.9				percent		CXC1	11/10/15	1319	1521842	1
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid "Dry Weight Corrected"												
Actinium-227	U	-0.178	+/-0.348	0.605		pCi/g		RXF2	12/03/15	1303	1522383	2
Antimony-125	U	0.121	+/-0.202	0.246		pCi/g						
Cesium-137		1.28	+/-0.158	0.0961	0.100	pCi/g						
Cobalt-60	U	0.0155	+/-0.0487	0.0998		pCi/g						
Europium-154	U	0.00314	+/-0.151	0.291		pCi/g						
Protactinium-231	UI	0.00	+/-0.914	1.23		pCi/g						
Radium-226		0.932	+/-0.230	0.190		pCi/g						
Radium-228		0.906	+/-0.363	0.340		pCi/g						
Tin-126	U	0.0586	+/-0.189	0.238		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		13.1	+/-3.19	3.76	4.00	pCi/g		KXB2	12/02/15	1116	1525757	3
Beta		21.7	+/-2.71	3.36	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	11/10/15	1319	1521842

### The following Analytical Methods were performed:

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

### Notes:

Counting Uncertainty is 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.15.R.1  
Sample ID: 385070006  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 21.9%

Project: MJWC00115  
Client ID: MJWC001

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

### Gravimetric Solids

ASTM D 2216 % Moisture "As Received"

Moisture		21.9						percent		CXC1	11/10/15	1319	1521842	1
----------	--	------	--	--	--	--	--	---------	--	------	----------	------	---------	---

### Rad Gamma Spec Analysis

Gammascpec, Gamma, Solid "Dry Weight Corrected"

Actinium-227	U	0.178	+/-0.348	0.605	0.283	+/-0.358		pCi/g		RXF2	12/03/15	1303	1522383	2
Antimony-125	UI	0.00	+/-0.202	0.246	0.114	+/-0.210		pCi/g						
Bismuth-212	UI	0.00	+/-1.11	1.55	0.718	+/-1.25		pCi/g						
Bismuth-214		0.932	+/-0.230	0.190	0.0877	+/-0.243		pCi/g						
Cesium-137		1.28	+/-0.158	0.0961	0.0438	+/-0.192	0.100	pCi/g						
Cobalt-60	U	0.0155	+/-0.0487	0.0998	0.0431	+/-0.0492		pCi/g						
Europium-154	U	0.00314	+/-0.151	0.291	0.127	+/-0.151		pCi/g						
Lead-212		1.10	+/-0.154	0.144	0.0681	+/-0.181		pCi/g						
Lead-214		1.16	+/-0.224	0.173	0.0798	+/-0.245		pCi/g						
Potassium-40		15.0	+/-1.69	0.731	0.297	+/-2.12		pCi/g						
Protactinium-231	UI	0.00	+/-0.914	1.23	0.574	+/-0.972		pCi/g						
Radium-226		0.932	+/-0.230	0.190	0.0877	+/-0.243		pCi/g						
Radium-228		0.906	+/-0.363	0.340	0.152	+/-0.387		pCi/g						
Thallium-208		0.295	+/-0.0794	0.0849	0.0385	+/-0.0834		pCi/g						
Tin-126	U	0.0586	+/-0.189	0.238	0.114	+/-0.190		pCi/g						

### Rad Gas Flow Proportional Counting

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

Alpha		13.1	+/-3.19	3.76	1.70	+/-4.06	4.00	pCi/g		KXB2	12/02/15	1116	1525757	3
Beta		21.7	+/-2.71	3.36	1.62	+/-4.04	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	11/10/15	1319	1521842

### The following Analytical Methods were performed

Method	Description
1	ASTM D 2216 (Modified)
2	DQE 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  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: December 17, 2015

Client Sample ID: 3.1.15.R.1  
Sample ID: 385070006

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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.15.R.1  
Sample ID: 385070006  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 21.9%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPC	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		21.9						percent		CXC1	11/10/15	1319	1521842	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gammascpec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	0.178	+/-0.348	0.605	0.283	+/-0.358		pCi/g		RXF2	12/03/15	1303	1522383	2
Antimony-125	UI	0.00	+/-0.202	0.246	0.114	+/-0.210		pCi/g						
Bismuth-212	UI	0.00	+/-1.11	1.55	0.718	+/-1.25		pCi/g						
Bismuth-214		0.932	+/-0.230	0.190	0.0877	+/-0.243		pCi/g						
Cesium-137		1.28	+/-0.158	0.0961	0.0438	+/-0.192	0.100	pCi/g						
Cobalt-60	U	0.0155	+/-0.0487	0.0998	0.0431	+/-0.0492		pCi/g						
Europium-154	U	0.00314	+/-0.151	0.291	0.127	+/-0.151		pCi/g						
Lead-212		1.10	+/-0.154	0.144	0.0681	+/-0.181		pCi/g						
Lead-214		1.16	+/-0.224	0.173	0.0798	+/-0.245		pCi/g						
Potassium-40		15.0	+/-1.69	0.731	0.297	+/-2.12		pCi/g						
Protactinium-231	UI	0.00	+/-0.914	1.23	0.574	+/-0.972		pCi/g						
Radium-226		0.932	+/-0.230	0.190	0.0877	+/-0.243		pCi/g						
Radium-228		0.906	+/-0.363	0.340	0.152	+/-0.387		pCi/g						
Thallium-208		0.295	+/-0.0794	0.0849	0.0385	+/-0.0834		pCi/g						
Tin-126	U	0.0586	+/-0.189	0.238	0.114	+/-0.190		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		13.1	+/-3.19	3.76	1.70	+/-4.06	4.00	pCi/g		KXB2	12/02/15	1116	1525757	3
Beta		21.7	+/-2.71	3.36	1.62	+/-4.04	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	11/10/15	1319	1521842

### 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 17, 2015

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.15.R.1  
Sample ID: 385070006

Project: MJWC00115  
Client ID: MJWC001

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

### 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 Technical Services  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Report Date: February 10, 2016

Client Sample ID: 3.1.15.R.2  
Sample ID: 389296011  
Matrix: Soil  
Collect Date: 21-OCT-15  
Receive Date: 14-JAN-16  
Collector: Client  
Moisture: 22.1%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	Lc	TPU	RL	Units	DF	Analyst	Date	Time	Batch	Mtd.
<b>Gravimetric Solids</b>														
<i>ASTM D 2216 % Moisture "As Received"</i>														
Moisture		22.1						percent		CXC1	01/14/16	1208	1537312	1
<b>Rad Gamma Spec Analysis</b>														
<i>Gamma with Ingrowth "Dry Weight Corrected"</i>														
Actinium-227	U	-0.053	+/-0.283	0.489	0.231	+/-0.284		pCi/g		RXF2	02/05/16	0842	1537546	2
Antimony-125	U	0.0738	+/-0.121	0.231	0.109	+/-0.126		pCi/g						
Bismuth-212		2.07	+/-0.966	0.966	0.435	+/-0.985		pCi/g						
Bismuth-214		0.833	+/-0.176	0.143	0.0655	+/-0.189		pCi/g						
Cesium-137		1.72	+/-0.140	0.090	0.0416	+/-0.196	0.100	pCi/g						
Cobalt-60	U	0.0252	+/-0.0471	0.0908	0.0396	+/-0.0485		pCi/g						
Europium-154	U	-0.024	+/-0.150	0.244	0.106	+/-0.150		pCi/g						
Lead-212		1.18	+/-0.129	0.118	0.0563	+/-0.162		pCi/g						
Lead-214		1.26	+/-0.185	0.338	0.164	+/-0.212		pCi/g						
Potassium-40		15.3	+/-1.71	0.730	0.308	+/-2.16		pCi/g						
Protactinium-231	UI	0.00	+/-0.996	0.907	0.427	+/-1.09		pCi/g						
Radium-226		0.833	+/-0.176	0.143	0.0655	+/-0.189		pCi/g						
Radium-228		1.14	+/-0.287	0.282	0.126	+/-0.318		pCi/g						
Thallium-208		0.387	+/-0.080	0.0742	0.034	+/-0.0862		pCi/g						
Tin-126	UI	0.00	+/-0.112	0.124	0.0595	+/-0.114		pCi/g						
<i>Gamma spec, Gamma, Solid "Dry Weight Corrected"</i>														
Actinium-227	U	-0.0408	+/-0.357	0.663	0.310	+/-0.358		pCi/g		RXF2	01/18/16	1122	1537545	3
Antimony-125	U	0.0275	+/-0.152	0.281	0.130	+/-0.152		pCi/g						
Bismuth-212	UI	0.00	+/-0.857	1.67	0.773	+/-1.16		pCi/g						
Bismuth-214		0.828	+/-0.196	0.160	0.0717	+/-0.210		pCi/g						
Cesium-137		1.68	+/-0.183	0.108	0.0493	+/-0.238	0.100	pCi/g						
Cobalt-60	U	0.00658	+/-0.0551	0.111	0.0479	+/-0.0552		pCi/g						
Europium-154	U	0.0103	+/-0.135	0.275	0.117	+/-0.135		pCi/g						
Lead-212		1.20	+/-0.151	0.147	0.0691	+/-0.185		pCi/g						
Lead-214		0.944	+/-0.267	0.204	0.0948	+/-0.279		pCi/g						
Potassium-40		13.3	+/-1.65	0.617	0.234	+/-2.00		pCi/g						
Protactinium-231	UI	0.00	+/-0.888	1.54	0.727	+/-1.06		pCi/g						
Radium-226		0.828	+/-0.196	0.160	0.0717	+/-0.210		pCi/g						
Radium-228		1.07	+/-0.376	0.377	0.168	+/-0.405		pCi/g						
Thallium-208		0.301	+/-0.0966	0.0881	0.0398	+/-0.100		pCi/g						
Tin-126	UI	0.00	+/-0.188	0.202	0.096	+/-0.189		pCi/g						
<b>Rad Gas Flow Proportional Counting</b>														
<i>GFPC, Gross A/B, solid "Dry Weight Corrected"</i>														
Alpha		18.5	+/-4.07	3.95	1.72	+/-5.49	4.00	pCi/g		KXB2	01/26/16	1152	1539462	4
Beta		23.7	+/-2.89	2.82	1.31	+/-4.56	10.0	pCi/g						

# 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: February 10, 2016

Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.15.R.2  
Sample ID: 389296011

Project: MJWC00115  
Client ID: MJWC001

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

### The following Prep Methods were performed

Method	Description	Analyst	Date	Time	Prep Batch
Dry Soil Prep	Dry Soil Prep GI-RAD-A-021	CXC1	01/14/16	1208	1537312

### 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	DOE HASL 300, 4.5 2.3/Ga-01-R
4	EPA 900.0/SW846 9310/SM 7110B Modified

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

Report Date: December 4, 2015

Company : MJW Corporation  
Address : 15 Hazelwood Drive  
Suite 112  
Buffalo, New York 14228  
Contact: Ms. Laurie Losey  
Project: Soil Radioisotopes

Client Sample ID: 3.1.16.R.1  
Sample ID: 385070007  
Matrix: Soil  
Collect Date: 21-OCT-15 14:10  
Receive Date: 05-NOV-15  
Collector: Client  
Moisture: 18.1%

Project: MJWC00115  
Client ID: MJWC001

Parameter	Qualifier	Result	Uncertainty	MDC	RL	Units	DF	Analyst	Date	Time	Batch	Method
Gravimetric Solids												
ASTM D 2216 % Moisture "As Received"												
Moisture		18.1				percent		CXC1	11/10/15	1319	1521842	1
Rad Gamma Spec Analysis												
Gammaspec, Gamma, Solid "Dry Weight Corrected"												
Aetinium-227	U	-0.0964	+/-0.260	0.494		pCi/g		RXF2	12/03/15	1303	1522383	2
Antimony-125	U	-0.0282	+/-0.112	0.206		pCi/g						
Cesium-137		1.75	+/-0.161	0.0756	0.100	pCi/g						
Cobalt-60	U	0.0436	+/-0.0414	0.0968		pCi/g						
Europtium-154	U	-0.0232	+/-0.114	0.191		pCi/g						
Protactinium-231	U	0.306	+/-0.558	1.12		pCi/g						
Radium-226		0.682	+/-0.167	0.139		pCi/g						
Radium-228		0.716	+/-0.295	0.279		pCi/g						
Tin-126	U	0.0837	+/-0.143	0.193		pCi/g						
Rad Gas Flow Proportional Counting												
GFPC, Gross A/B, solid "Dry Weight Corrected"												
Alpha		14.7	+/-3.55	3.98	4.00	pCi/g		KXB2	12/02/15	1116	1525757	3
Beta		21.7	+/-2.59	2.91	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	CXC1	11/10/15	1319	1521842

The following Analytical Methods were performed:

Method	Description	Analyst Comments
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	

### Notes:

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