

# GEL LABORATORIES LLC

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

## Certificate of Analysis

Report Date: August 12, 2011

Company : Pennsylvania Brine Treatment  
Address : 5148 US 322  
  
Franklin, Pennsylvania 16323  
Contact: Mr. Sparky DeLong  
Project: PA Brine Treatment - Franklin Facility

Client Sample ID: Outfall 001  
Sample ID: 282401001  
Matrix: Water  
Collect Date: 18-JUL-11 15:00  
Receive Date: 20-JUL-11  
Collector: Client  
  
Project: PABR00211  
Client ID: PABR001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	0.670	2.00	ug/L	10	SKJ	08/03/11	2206	1124207	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	AXG2	08/03/11	0720	1124206

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

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Report Date: August 12, 2011

Company : Pennsylvania Brine Treatment  
 Address : 5148 US 322  
  
 Franklin, Pennsylvania 16323  
 Contact: Mr. Sparky DeLong  
 Project: PA Brine Treatment - Franklin Facility

Client Sample ID: Outfall 001	Project: PABR06211
Sample ID: 282401001	Client ID: PABR001
Matrix: Water	
Collect Date: 18-JUL-11 15:00	
Receive Date: 20-JUL-11	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammascpec, Gamma, Liquid (Standard List) "As Received"												
Radium-228	U	0.222	+/-12.4	20.5		pCi/L		KXG3	07/31/11	1211	1126675	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	74.2	+/-71.3	112	5.00	pCi/L		DXF3	07/31/11	1944	1124296	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		2.76	+/-0.532	0.306	1.00	pCi/L		KSD1	08/08/11	1205	1124172	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	

### CERTIFICATE OF ANALYSIS

Work Order Number:

11G3003

Pennsylvania Brine Treatment  
 Attn: Elton Delong, Jr. (Sparky)  
 5148 Us 322  
 Franklin, PA 16323

Date Reported 08/09/2011  
 Date Received 07/19/2011  
 Order Number 11G3003  
 Account Number 000000016369



Purchase Order:

Subject: Weekly Wastewater Sample

ANALYSIS

SMP	TEST	METHOD	RESULT	UNITS	DATE	TIME	TECH	NOTES
<b>01 Composite Sample</b>								
Sample Date: 07/18/2011			Sample Time: 14:30					
Acidity		SM 2310 B	< 7	mg/L	07/20/11	13:10	CMF	
Alkalinity As CaCO3		SM 2320B	110	mg CaCO3/L	07/20/11	9:00	CMF	
Chloride		ASTM D512-89A	44000	mg/L	07/20/11	15:40	CMF	
Solids, Dissolved		SM 2540C	100000	mg/L	07/20/11	14:00	CMF	
Solids, Suspended		SM 2540 D	10	mg/L	07/19/11	16:10	MAD	
Sulfate		SM 4500-SO4 D	1500	mg/L	07/20/11	10:00	CMF	
<b>02 Grab Sample</b>								
Sample Date: 07/18/2011			Sample Time: 12:00					
Oil & Grease		EPA 1664A	< 5	mg/L	07/29/11	8:30	CAP	
<b>03 Composite Sample</b>								
Sample Date: 07/18/2011			Sample Time: 14:30					
Barium		EPA 200.7	2.69	mg/L	07/26/11	11:37	MWR	
Copper		EPA 200.7	< 0.100	mg/L	07/26/11	11:40	MWR	
Iron, Total		EPA 200.7	< 0.500	mg/L	07/26/11	11:37	MWR	
Silver		EPA 200.7	< 0.100	mg/L	07/26/11	11:40	MWR	
Strontium		EPA 200.7	540	mg/L	08/02/11	16:35	MWR	
<b>04 Composite Sample</b>								
Sample Date: 07/18/2011			Sample Time: 14:30					
Bromide		EPA 300.0	460	mg/L	07/26/11	19:19	OST	

**Order Notes**

The technician initials "OST" (Outside Testing) indicate that the Bromide analysis was sub-contracted to Microbac Laboratories, Inc./New York Division. PA DEP ID#68-01385. (W.O. 1107457).

All samples received in proper condition and results conform to ISO 17025 unless otherwise noted

The data and information on this, and other accompanying documents, represent only the sample(s) analyzed and is rendered upon condition that it is not to be reproduced wholly or in part for advertising or other purposes without approval from the laboratory.

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## Certificate of Analysis

Report Date: \*\*\*\*\*

Company : Pennsylvania Brine Treatment  
Address : 5148 US 322

Franklin, Pennsylvania 16323  
Contact: Mr. Sparky DeLong  
Project: PA Brine Treatment - Franklin Facility

Client Sample ID: Outfall 001  
Sample ID: 283352001  
Matrix: Water  
Collect Date: 02-AUG-11 15:30  
Receive Date: 04-AUG-11  
Collector: Client

Project: PABR00211  
Client ID: PABR001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	1.34	4.00	ug/L	20	PRB	08/17/11	1559	1129214	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYHI	08/10/11	1338	1129213

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

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## Certificate of Analysis

Report Date: \*\*\*\*\*

Company : Pennsylvania Brine Treatment  
 Address : 5148 US 322  
  
 Contact: Franklin, Pennsylvania 16323  
 Mr. Sparky DeLong  
 Project: PA Brine Treatment - Franklin Facility

Client Sample ID: Outfall 001	Project: PABR00211
Sample ID: 283352001	Client ID: PABR001
Matrix: Water	
Collect Date: 02-AUG-11 15:30	
Receive Date: 04-AUG-11	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammascpec, Gamma, Liquid (Standard List) "As Received"												
Radium-228	U	0.213	+/-16.3	21.0		pCi/L		KXG3	08/25/11	2029	1132154	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	-56	+/-76.7	158	5.00	pCi/L		DXF3	08/30/11	1928	1137568	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		4.30	+/-0.621	0.317	1.00	pCi/L		KSD1	08/22/11	1430	1129803	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	

**CERTIFICATE OF ANALYSIS**

Work Order Number:

11H1804

Pennsylvania Brine Treatment  
 Attn: Elton Delong, Jr. (Sparky)  
 5148 Us 322  
 Franklin, PA 16323

Date Reported 09/09/2011  
 Date Received 08/09/2011  
 Order Number 11H1804  
 Account Number 000000016369



Purchase Order:

Subject: Monthly Wastewater Samples

SMP	TEST	METHOD	RESULT	UNITS	ANALYSIS		
					DATE	TIME	TECH
<b>01 Composite Sample</b>							
Sample Date: 08/02/2011			Sample Time: 15:30				
	Chlorides by Titration, Water	ASTM D512-89A		37000 mg/L	08/11/11	13:45	CMF
	Solids, Suspended, Water	SM 2540 D	<i>ours 10</i>	39.0 mg/L	08/10/11	15:00	CMF O-04
	Sulfate, Water	SM 4500-SO4 D		1410 mg/L	08/10/11	9:45	CMF
<b>02 Grab Sample</b>							
Sample Date: 08/02/2011			Sample Time: 11:00				
	Oil & Grease, Water	EPA 1664A		<5.00 mg/L	08/11/11	7:00	CAP
<b>03 Composite Sample</b>							
Sample Date: 08/02/2011			Sample Time: 15:30				
	Copper in mg/L by EPA 200.7	EPA 200.7		<0.100 mg/L	08/11/11	20:08	ICP
	Iron in mg/L by EPA 200.7	EPA 200.7		<0.500 mg/L	08/11/11	20:08	ICP
	Silver in mg/L by EPA 200.7	EPA 200.7		<0.100 mg/L	08/11/11	9:11	MWR
<b>04 Composite Sample</b>							
Sample Date: 08/02/2011			Sample Time: 15:30				
	Bromide, Water	EPA 300.0		364 mg/L	08/11/11	19:07	OST

**Order Notes**

Sample was received in laboratory past hold time for total suspended solids. CMF

The technician initials "OST" (Outside Testing) indicate that the Bromide analysis was sub-contracted to Microbac Laboratories, Inc./New York Division. PA DEP ID#68-01385. (W.O. 1108296)

All samples received in proper condition and results conform to ISO 17025 unless otherwise noted

**Notes and Definitions**

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ATHA accredited for Environmental Lead. Visit our website to view our current ATHA LAP, LLC accreditation.



# GEL LABORATORIES LLC

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## Certificate of Analysis

Report Date: September 20, 2011

Company : Pennsylvania Brine Treatment  
Address : 5148 US 322

Franklin, Pennsylvania 16323  
Contact: Mr. Sparky DeLong  
Project: PA Brine Treatment - Franklin Facility

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Client Sample ID:	Outfall 001	Project:	PABR00211
Sample ID:	284404001	Client ID:	PABR001
Matrix:	Water		
Collect Date:	15-AUG-11 18:00		
Receive Date:	19-AUG-11		
Collector:	Client		

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Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Metals Analysis-ICP-MS											
SW846 3005A/6020A Liquid "As Received"											
Uranium	U	ND	0.670	2.00	ug/L	10	SKJ	09/01/11	2025	1134411	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3005A	ICP-MS 3005A PREP	LYHI	08/23/11	0930	1134410

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3005A/6020A	

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## Certificate of Analysis

Report Date: September 20, 2011

Company : Pennsylvania Brine Treatment  
 Address : 5148 US 322  
  
 Franklin, Pennsylvania 16323  
 Contact: Mr. Sparky DeLong  
 Project: PA Brine Treatment - Franklin Facility

Client Sample ID: Outfall 001	Project: PABR00211
Sample ID: 284404001	Client ID: PABR001
Matrix: Water	
Collect Date: 15-AUG-11 18:00	
Receive Date: 19-AUG-11	
Collector: Client	

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec Analysis												
Gammascpec, Gamma, Liquid (Standard List) "As Received"												
Radium-228		28.8	+/-22.4	20.2		pCi/L		KXG3	09/12/11	0942	1136819	1
Rad Gas Flow Proportional Counting												
GFPC, Gross Alpha Liquid "As Received"												
Alpha	U	95.3	+/-86.7	139	5.00	pCi/L		CAS2	09/07/11	1820	1139206	2
Rad Radium-226												
Lucas Cell, Ra226, liquid "As Received"												
Radium-226		9.02	+/-1.22	0.326	1.00	pCi/L		KSD1	09/19/11	1400	1135129	3

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	EPA 901.1	
2	EPA 900.0/SW846 9310	
3	EPA 903.1 Modified	



### CERTIFICATE OF ANALYSIS

Work Order Number:

11H2181

Pennsylvania Brine Treatment  
 Attn: Elton Delong, Jr. (Sparky)  
 5148 Us 322  
 Franklin, PA 16323

Date Reported 08/31/2011  
 Date Received 08/16/2011  
 Order Number 11H2181  
 Account Number 000000016369



Purchase Order:

Subject: Weekly Wastewater Sample

SMP	TEST	METHOD	RESULT	UNITS	ANALYSIS			NOTES
					DATE	TIME	TECH	
<b>01 Composite Sample</b>								
Sample Date: 08/15/2011			Sample Time: 22:00					
	Acidity, Water	SM 2310 B	< 7	mg/L	08/19/11	11:30	CMF	
	Alkalinity As CaCO3 to pH 4.5, Water	SM 2320B	97.0	mg CaCO3/L	08/19/11	9:15	CMF	
	Chlorides by Titration, Water	ASTM D512-89A	43600	mg/L	08/25/11	9:15	CMF	
	Solids, Dissolved, Water	SM 2540C	87000	mg/L	08/22/11	11:15	CMF	
	Solids, Suspended, Water	SM 2540 D	39.0	mg/L	08/17/11	9:15	CMF	
	Sulfate, Water	SM 4500-SO4 D	853	mg/L	08/17/11	13:30	CMF	
<b>02 Grab Sample</b>								
Sample Date: 08/15/2011			Sample Time: 16:00					
	Oil & Grease, Water	EPA 1664A	< 6	mg/L	08/25/11	8:30	CAP	
<b>03 Composite Sample</b>								
Sample Date: 08/15/2011			Sample Time: 22:00					
	Barium in mg/L by EPA 200.7	EPA 200.7	6.53	mg/L	08/23/11	10:26	MWR	
	Copper in mg/L by EPA 200.7	EPA 200.7	< 0.100	mg/L	08/23/11	10:26	MWR	
	Iron, Total, Water	EPA 200.7	< 0.500	mg/L	08/23/11	10:26	MWR	
	Silver in mg/L by EPA 200.7	EPA 200.7	< 0.100	mg/L	08/23/11	10:26	MWR	
	Strontium in mg/L by EPA 200.7	EPA 200.7	310	mg/L	08/25/11	9:18	MWR	
<b>04 Composite Sample</b>								
Sample Date: 08/15/2011			Sample Time: 22:00					
	Bromide, Water	EPA 300.0	563	mg/L	08/18/11	15:45	OST	

**Order Notes**

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AIHA accredited for Environmental Lead. Visit our website to view our current AIHA LAP, LLC accreditation.

