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

# **Certificate of Analysis**

Project:

Client ID:

PABR00311

PABR001

Report Date: December 7, 2011

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001

Sample ID:

289648001

Matrix:

Water

Collect Date:

02-NOV-11 13:00

Receive Date:

07-NOV-11

Collector:

Client :

Parameter	Qualifier	Result	DL	, RL	Units	DF At	nalyst Date	Time Batch	Method
Metals Analysis-IC	CP-MS		Charles Company		8	- C- (100 (100 (100 (100 (100 (100 (100 (10			
SW846 3005A/602	20A Liquid "As Re	eceived"						<b>X</b> 2	
Uranium	U	ND	0.670	2.00	ug/L	10 SE	CJ 12/07/11	0642 1159086	1.
The following Prep	p Methods were pe	erformed:	85		26				
Method	Description	i		Analyst	Date	Time	Prep Batcl	h şs	
SW846 3005A	ICP-MS 3005	A PREP	302	LYHI	12/06/11	1400	1159085		
The following An	alytical Methods v	vere performed:						60%	
Method	Description		8 86	18	Ana	lyst Com	nents	*	
1	SW846 3005A	/6020A		420					

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# **Certificate of Analysis**

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Company:

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Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001

Project:

Client ID:

PABR00311 PABR001

Sample ID:

289648001

Matrix:

Water

Collect Date:

02-NOV-11 13:00

Receive Date:

07-NOV-11

Collector:

Client

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Rad Gamma Spec	Analysis		24			-	¥2					
Gammaspec, Gam	ma, Liquid (Standa	ard List) ".	As Received"			40						
Radium-228	U	21.2	+/-15.2	31.2		pCi/L		KXG3	1/30/11	1236	1160380	1
Rad Gas Flow Pro	portional Counting	5										
GFPC, Gross Alph	na Liquid "As Rece	eived"										
Alpha	U	-185	+/-168	372	5.00	pCi/L		VXC2	1/16/11	1926	1158656	2
Rad Radium-226												
Lucas Cell, Ra226	, liquid "As Receiv	/ed"										
Radium-226		3.89	+/-0.587	0.311	1.00	pCi/L		KSD1	1/16/11	1100	1158701	3
The following An	alytical Methods w	vere perfor	rmed:									
Method	Description					Ana	lyst Co	mments	-			
1	EPA 901.1	-			160		-			_		
2	EPA 900.0/SV	V846 9310										
3	EPA 903.1 Mc	odified										



Name:

Pennsylvania Brine Treatment INC.

Attn: Mr. Steve Davis

5148 US 322

Franklin, Pa 16323

Sample Start Date:

11/2/2011 9:00 AM

Receipt Date: Report Date:

11/3/2011 9:10 AM

11/9/2011

Sample ID#:

11 44170

Sample Type:

Waste Water

Sample Source:

Grab

Sampler:

CLIENT (Client)

Client Sample ID: 201

Analyte	Analyst Analysis Analysis			Sample	Units	Data	Method	RPL
		Date	Time	Result		Qualifier		
Oil and Grease - HEM	LAW	11/08	n/a	10.5	mg/l	n/a	1664A	5.0

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

Approved By:

Laboratory Supervisor

Halal J 1gh



Name:

Pennsylvania Brine Treatment INC.

Attn: Mr. Steve Davis

5148 US 322

Franklin, Pa 16323

Sample Start Date: Sample End Date: 11/2/2011 7:00 AM 11/2/2011 1:00 PM

Receipt Date: Report Date: 11/3/2011 9:10 AM

11/16/2011

Sample ID#:

11 44171

Sample Type:

Waste Water Composite

Sample Source: Sampler:

CLIENT (Client)

Client Sample ID:

202

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Oualifier	Method	RPL
Barium - ICP	GJT	11/15	n/a	18.500	mg/l	D	200.7/6010	0.500
Iron - ICP	GJT	11/15	n/a	ND	mg/l	D	200.7/6010	1.000

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

D - Indicates an identified compound in an analysis that has been diluted

Approved By:

Gold John



Name:

Pennsylvania Brine Treatment INC.

Attn: Mr. Steve Davis

5148 US 322

Franklin, Pa 16323 11/2/2011 7:00 AM

Sample Start Date: Sample End Date:

11/2/2011 1:00 PM 11/3/2011 9:10 AM

Receipt Date: Report Date:

11/21/2011

Sample ID#:

11 44172

Sample Type: Sample Source: Waste Water Composite

Sampler:

CLIENT (Client)

Client Sample ID:

203

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Acidity to pH=8.3	BH	11/08	n/a	ND	mg/l as CaCO3	n/a	SM2310B	2
Alkalinity to pH=4.5	ВН	11/13	n/a	274	mg/l as CaCO3	n/a	SM2320B	20
Bromide	AJD	11/15	n/a	4620.00	mg/l	D	D1246-99	100.00
Chloride	SR	11/12	n/a	87812.00	mg/l	n/a	SM4500CID	5.00
Sulfate ASTM	ZTR	11/17	n/a	625	mg/l	D	D516-02	125
Osmotic Pressure	AJD	11/16	n/a	4040	mOs/kg	D	OSP	1000
Total Dissolved Solids (TDS)	LMB	11/09	n/a	198400	mg/l	n/a	SM2540C	25

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

D - Indicates an identified compound in an analysis that has been diluted

Approved By:

Laboratory Supervisor

Gold I John



Name:

Pennsylvania Brine Treatment INC.

Attn: Mr. Steve Davis

5148 US 322

Franklin, Pa 16323

Sample Start Date:

11/2/2011 7:00 AM

Sample End Date:

11/2/2011 1:00 PM 11/3/2011 9:10 AM

Receipt Date: Report Date:

11/8/2011

Sample ID#:

11 44173

Sample Type:

Waste Water

Sample Source:

Composite

Sampler:

CLIENT (Client)

Client Sample ID: 204

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Total Suspended Solids	LMB	11/03	n/a	15	mg/l	n/a	SM2540D	5

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

Approved By:

Gold Jagh

Laboratory Supervisor

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

**Certificate of Analysis** 

Report Date: December 15, 2011

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001 Sample ID:

290550001

Matrix:

Water

Collect Date:

15-NOV-11 15:00

Receive Date:

18-NOV-11

Collector:

Client

Parameter	Qualifier	Result	DL	RL	Units	DF Analyst Date	Time Batch Method
14 Table 1 1 Table 1 Table 1 Table 1 Table 1 1 Table 1 1 Table 1 Table 1 Table 1 1 Table 1 Table 1 1 Table	~~ · · ·		\$150 (f)   \$160 (i)				\$30 B

Metals Analysis-ICP-MS

SW846 3005A/6020A Liquid "As Received"

Uranium

0.670

2.00

ug/L

Project: Client ID:

12/13/11 0236 1163834

PABR00311

PABR001

The following Prep Methods were performed:

Prep Batch Method Description Analyst Date Time SW846 3005A ICP-MS 3005A PREP BXA1 12/10/11 1163833

The following Analytical Methods were performed:

Method Description

SW846 3005A/6020A

**Analyst Comments** 

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

### **Certificate of Analysis**

Project:

Client ID:

PABR00311

PABR001

Report Date: December 15, 2011

Company:

Pennsylvania Brine Treatment

Address:

5148 US 322

Franklin, Pennsylvania 16323

Contact:

Mr. Sparky DeLong

Project:

PA Brine Treatment - Josephine Facility

Client Sample ID: Outfall 001

Sample ID:

290550001

Matrix:

Water

Collect Date:

15-NOV-11 15:00

Receive Date:

18-NOV-11

Collector:

Client

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analys	Date	Time	Batch	Method
Rad Gamma Spec A	nalysis	1/8	<del></del> -			· · · · · · · · · · · · · · · · · · ·				3.3		<del>,</del>
Gammaspec, Gamma	a, Liquid (Standa	ard List) "	As Received"									
Radium-228	U	10.8	+/-12.0	12.5		pCi/L		KXG3	11/30/11	1632	1164868	1
Rad Gas Flow Propo	rtional Counting	;										
GFPC, Gross Alpha	Liquid "As Rece	eived"										
Alpha	U	-48.7	+/-248	463	5.00	pCi/L		CAS2	12/14/11	1817	1166974	2
Rad Radium-226												
Lucas Cell, Ra226, li	iquid "As Receiv	/ed"										
Radium-226	U	0.246	+/-0.376	0.661	1.00	pCi/L		KSDI	12/05/11	1320	1164633	3
The following Analy	ytical Methods w	vere perfo	rmed:									
Method	Description				÷	Ana	lyst Co	mments				
i -	EPA 901.1	440	-0.		65		10000	\$1.0 <del>7.</del>	<del></del>			
2	EPA 900.0/SW	/846 9310										
3	EPA 903.1 Mc	dified										



Name:

Pennsylvania Brine - Franklin

5148 US 322

Franklin, PA 16323

Sample Start Date: Receipt Date:

11/15/2011 9:00 AM 11/16/2011 9:10 AM

Report Date:

12/1/2011

Sample ID#:

11 46132

Sample Type: Sample Source: Waste Water Grab

Sampler:

CLIENT (Client)

Client Sample ID:

201

Analyte	Analyst	Analysis	Analysis	Sample	Units	Data	Method	RPL
		Date	Time	Result		Qualifier		
Oil and Grease - HEM	LAW	11/30	n/a	ND	mg/l	n/a	1664A	5.0

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

Approved By:

Laboratory Supervisor

hab I John



Name:

Pennsylvania Brine - Franklin

5148 US 322

Franklin, PA 16323

Sample Start Date: Sample End Date:

11/15/2011 9:00 AM 11/15/2011 3:00 PM 11/16/2011 9:10 AM

Receipt Date: Report Date:

12/13/2011

Sample ID#:

11 46136

Sample Type: Sample Source:

Waste Water Composite

Sampler:

CLIENT (Client)

Client Sample ID:

202

Analyte	Analyst	Analysis	Analysis	Sample	Units	Data	Method	RPL
	20 10 10	Date	Time	Result		Qualifier		- 00
Barium - ICP	GJT	12/12	n/a	8.600	mg/l	D	200.7/6010	0.500
Iron - ICP	GJT	12/12	n/a	ND	mg/l	D	200.7/6010	1.000

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

D - Indicates an identified compound in an analysis that has been diluted

Approved By:

Laboratory Supervisor

July 1/gh-



Name:

Pennsylvania Brine - Franklin

5148 US 322

Franklin, PA 16323 11/15/2011 9:00 AM

Sample Start Date: Sample End Date:

11/15/2011 3:00 PM

Receipt Date: Report Date:

11/16/2011 9:10 AM 12/7/2011

Sample ID#:

11 46138

Sample Type: Sample Source: Waste Water Composite

Sampler:

CLIENT (Client)

Client Sample ID: 203

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Acidity to pH=8.3	BF	11/23	n/a	ND	mg/l as CaCO3	n/a	SM2310B	2
Alkalinity to pH=4.5	BH	11/22	n/a	198	mg/l as CaCO3	n/a	SM2320B	20
Bromide	SR	11/30	n/a	1470.00	mg/l	n/a	D1246-99	100.00
Chloride	BH	11/29	n/a	96909.00	mg/l	D	SM4500ClD	5.00
Sulfate ASTM	ZTR	12/06	n/a	22	mg/l	n/a	D516-02	5
Osmotic Pressure	LL	11/22	n/a	5180	mOs/kg	D	OSP	1000
Total Dissolved Solids (TDS)	LMB	11/18	n/a	190500	mg/l	n/a	SM2540C	25

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

D - Indicates an identified compound in an analysis that has been diluted

Approved By:

Laboratory Supervisor



Name:

Pennsylvania Brine - Franklin

5148 US 322

Franklin, PA 16323

Sample Start Date: Sample End Date:

11/15/2011 9:00 AM 11/15/2011 3:00 PM-

Receipt Date:

11/16/2011 9:10 AM

Report Date:

11/22/2011

Sample ID#:

11 46133

Sample Type:

Waste Water

Sample Source: Sampler:

Composite

CLIENT (Client)

Client Sample ID: 204

Analyte	Analyst	Analysis Date	Analysis Time	Sample Result	Units	Data Qualifier	Method	RPL
Total Suspended Solids	LMB	11/16	n/a	26	mg/l	n/a	SM2540D	5

Comments:

ND=Not Detected

Note:

DEP Certification #s 32-00382

Approved By:

Laboratory Supervisor