

**AP - 078**

**2012 AGWMR**

**01/30/2013**

*Delivery Confirmation No.*  
420 87505 9101 9690 0094 0558 4796 79



January 30, 2013

Mr. Glenn von Gonten  
New Mexico Energy, Minerals, & Natural Resources  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**RE: 2012 Annual Groundwater Monitoring Report  
South Four Lakes #15 Site (AP-78)  
T12S-R34E-Section 2, Unit Letter G, Lea County, New Mexico**

Dear Mr. von Gonten:

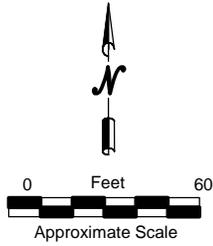
As agent for Pride Energy Company (Pride), Trident Environmental submits this *2012 Annual Groundwater Monitoring Report* for the above-referenced site.

#### *Groundwater Sampling Procedures*

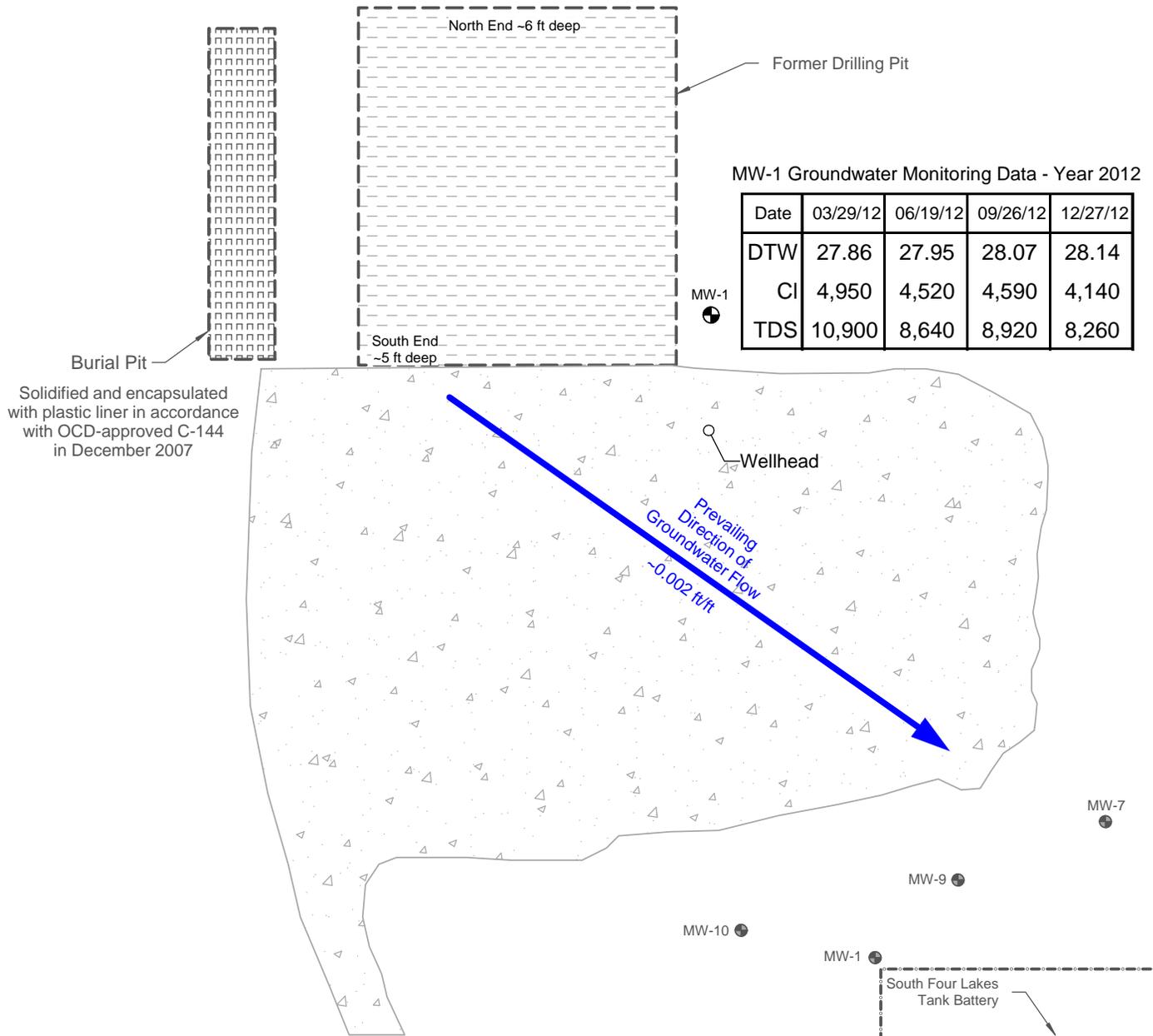
During each quarterly sampling event the on-site monitoring well (MW-1) was gauged for depth to groundwater using an electronic water level indicator immediately prior to purging operations. A minimum of three well volumes of groundwater was purged from the monitoring well using a 3-stage submersible pump which was decontaminated using an Alconox solution and a distilled water rinse between sampling points. Groundwater parameters (pH, temperature, and conductivity) were measured using a Hanna Model 98130 multimeter and recorded on a well sample data form. At the end of purging, water samples for the monitoring well were transferred into 500 milliliter (ml) plastic containers for laboratory analysis of chloride and sulfate using EPA Method E300 and TDS using EPA Method 160.1. For each set of samples, chain of custody forms documenting sample identification numbers, collection times, and delivery times to the laboratory were completed. All water samples were placed in an ice-filled cooler immediately after collection and transported to Permian Basin Environmental Lab (Midland, Texas) for analysis.

#### *Groundwater Monitoring Results*

Groundwater monitoring activities have been performed at the site on a quarterly basis since January 2008 as summarized in Table 1. A site plan showing the most recent groundwater elevation and the chloride/TDS concentrations in monitoring well MW-1 is shown in Figure 1. Figure 2 is a graph depicting chloride and TDS concentrations and groundwater elevation versus time at monitoring well MW-1.



Legend	
MW-1	Monitoring Well Location
DTW	Depth to Groundwater (ft btoc)
CI	Chloride/TDS concentration in groundwater (mg/L)
TDS	



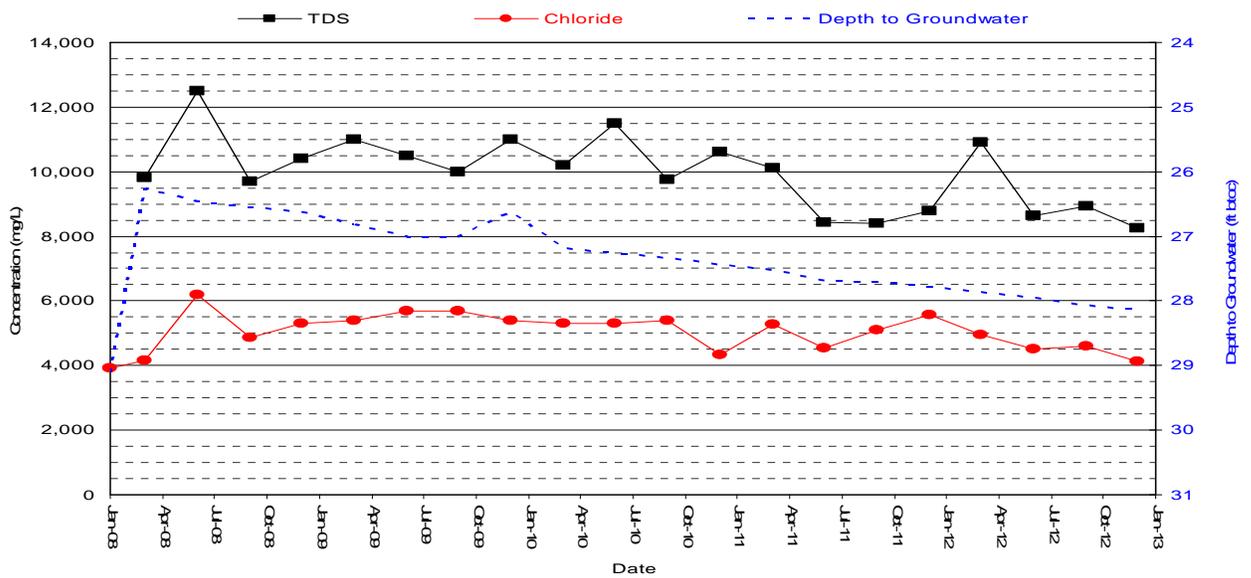
Pride Energy Company  
South Four Lakes #15 (AP-78)  
T12S - R34E - Section 2 - Unit G  
Lea County, New Mexico

FIGURE 1  
2012 Groundwater Monitoring Results

**Table 1**  
**Summary of Groundwater Monitoring Results (MW-1)**

Sample Date	Depth to Groundwater (feet BTOC)	Groundwater Elevation (feet AMSL)	Chloride (mg/L)	TDS (mg/L)	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylene (mg/L)
01/23/08	29.10	4122.05	3,930	---	---	---	---	---
03/13/08	26.25	4124.90	4,150	9,820	<0.001	<0.001	<0.001	<0.003
06/20/08	26.46	4124.69	6,180	12,500	---	---	---	---
09/09/08	26.55	4124.60	4,850	9,700	<0.001	<0.001	<0.001	<0.003
12/08/08	26.63	4124.52	5,300	10,400	<0.001	<0.001	<0.001	<0.003
03/18/09	26.81	4124.34	5,400	11,000	<0.001	<0.001	<0.001	<0.003
06/17/09	27.01	4124.14	5,700	10,500	<0.001	<0.001	<0.001	<0.003
09/21/09	27.00	4124.15	5,700	10,000	<0.001	<0.001	<0.001	<0.003
12/11/09	26.63	4124.52	5,400	11,000	<0.001	<0.001	<0.001	<0.003
03/24/10	27.18	4123.97	5,300	10,200	---	---	---	---
06/15/10	27.26	4123.89	5,300	11,500	---	---	---	---
09/13/10	27.33	4123.82	5,400	9,750	---	---	---	---
12/13/10	27.44	4123.71	4,340	10,600	---	---	---	---
03/17/11	27.52	4123.63	5,280	10,100	---	---	---	---
06/29/11	27.68	4123.47	4,540	8,430	---	---	---	---
09/27/11	27.70	4123.45	5,090	8,400	---	---	---	---
12/13/11	27.79	4123.36	5,570	8,780	---	---	---	---
03/29/12	27.86	4123.29	4,950	878	10,900	---	---	---
06/19/12	27.95	4123.20	4,520	996	8,640	---	---	---
09/26/12	28.07	4123.08	4,590	1,010	8,920	---	---	---
12/27/12	28.14	4123.01	4,140	851	8,260	---	---	---
<i>WQCC Standards:</i>			250	1000	0.10	0.75	0.75	0.62

**FIGURE 2**  
**Chloride/TDS Concentrations and Groundwater Elevation Versus Time Graph (MW-1)**



Groundwater Depth, Elevations, Hydraulic Gradient and Flow Direction

Depth to groundwater at the site is approximately 26 feet (ft) below ground surface. The water table elevation has been steadily declining about 0.4 ft/year as displayed in Figure 2, which graphs the change in groundwater elevation since 2008 at monitoring well MW-1. Based on data from nearby sites, the prevailing groundwater gradient direction trends towards the southeast with a relatively flat hydraulic gradient of approximately 0.002 ft/ft (Figure 1). Groundwater depths and gradient patterns are consistent with the prevailing water table conditions in the area.

Groundwater Quality Conditions

The constituents of concern in groundwater are chloride and TDS as they remain above the New Mexico's Water Quality Control Commission (WQCC) standards, of 250 mg/L and 1,000 mg/L, respectively. Benzene, toluene, ethylbenzene, and xylenes (BTEX) are not a constituent of concern as concentrations remained below laboratory detection limits and WQCC standards for two years; therefore, analysis for these constituents was discontinued.

Pride Energy Company plans to continue quarterly ground water monitoring activities and submit an annual groundwater monitoring report next year.

We look forward to working with you on this project. If you have any questions or comments please contact me at 432.638.8740 (gil@trident-environmental.com) or Matt Pride at 918.524.9200 (mattp@pride-energy.com).

Respectfully,

Gilbert Van Deventer, REM, PG  
Trident Environmental

cc: Matt Pride (Pride Energy Co., Tulsa, OK)  
Geoffry Leking (NMOCD -District 1, Hobbs, NM)

Attachments: *Well sampling data form and laboratory analytical reports*

WELL SAMPLING DATA FORM

AND

LABORATORY ANALYTICAL REPORTS

**WELL SAMPLING DATA FORM (MW-1)**



CLIENT: Pride Energy Company  
 SITE NAME: South Four Lakes #15 (AP-78)  
 SITE LOCATION: T12S-R34E-Sec 2 Unit Letter G ~ Lea County, NM  
 SAMPLER: Gil Van Deventer

PURGING METHOD:     Hand Bailed       Pump, Type: Whaler Model WP-9012 Mega Purger (12-volt submersible pump)  
 SAMPLING METHOD:     Disposable Bailer     Direct from Discharge Hose     Other: \_\_\_\_\_  
 DISPOSAL METHOD OF PURGE WATER:     On-site Drum     Drums       WWD Disposal Facility

Quarter	Date	Time	Depth to Water (ft btoc)	Total Depth (ft)	Water Column Height (ft)	Well Factor 2"=.16 4"=.65	Calc. Well Vol. (gal)	Volume Purged (gal)	No. of Well Volumes Purged	Temp. °F	Cond. mS/cm	pH	PHYSICAL APPEARANCE AND REMARKS
First	03/29/12	15:00	27.86	49.80	21.94	0.16	3.5	20	5.7	68.6	15.24	7.00	Pinkish/tan; cleared during purging
Second	06/19/12	16:00	27.95	49.80	21.85	0.16	3.5	20	5.7	71.1	14.22	6.97	Pinkish/tan; cleared during purging
Third	09/26/12	12:00	28.07	49.80	21.73	0.16	3.5	20	5.8	67.5	13.50	7.11	Whitish/tan; cleared during purging
Fourth	12/27/12	15:00	28.14	49.80	21.66	0.16	3.5	20	5.8	65.6	12.32	7.22	Whitish/tan; cleared during purging

COMMENTS:      Equipment decontamination consists of gloves, Alconox, and Distilled Water Rinse.  
Hanna Model 98130 instrument used to obtain pH, conductivity, and temperature measurements.  
Delivered samples to the analytical laboratory for chloride, sulfate, and TDS analysis.

# Analytical Report 439823

for

## Trident Environmental

**Project Manager: Gil Van Deventer**

**Pride Energy Company**

**South Four Lakes # 15 (AP-78)**

**06-APR-12**

Collected By: Client



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**12600 West I-20 East Odessa, Texas 79765**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



06-APR-12

Project Manager: **Gil Van Deventer**  
**Trident Environmental**  
P.O. Box 12177  
Odessa, TX 79768

Reference: XENCO Report No: **439823**  
**Pride Energy Company**  
Project Address: T12S-R34E-Sec 2 Unit Letter G ~ Lea County, NM

**Gil Van Deventer:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number 439823. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. Estimation of data uncertainty for this report is found in the quality control section of this report unless otherwise noted. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 439823 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron II**

Odessa Laboratory Manager

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# Sample Cross Reference 439823



**Trident Environmental, Odessa, TX**

Pride Energy Company

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
MW-1	W	03-29-12 15:00		439823-001



## CASE NARRATIVE

*Client Name: Trident Environmental*

*Project Name: Pride Energy Company*



*Project ID: South Four Lakes # 15 (A1)*  
*Work Order Number: 439823*

*Report Date: 06-APR-12*  
*Date Received: 03/30/2012*

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***Sample receipt non conformances and comments:***

*None*

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***Sample receipt non conformances and comments per sample:***

*None*

***Analytical non nonformances and comments:***

*Batch: LBA-885227 Inorganic Anions by EPA 300  
E300*

*Batch 885227, Chloride recovered below QC limits in the Matrix Spike.*

*Samples affected are: 439823-001.*

*The Laboratory Control Sample for Chloride is within laboratory Control Limits*



# Certificate of Analysis Summary 439823

Trident Environmental, Odessa, TX

Project Name: Pride Energy Company



Project Id: South Four Lakes # 15 (AP-78)

Contact: Gil Van Deventer

Project Location: T12S-R34E-Sec 2 Unit Letter G ~ Lea Cot

Date Received in Lab: Fri Mar-30-12 10:20 am

Report Date: 06-APR-12

Project Manager: Brent Barron II

<b>Analysis Requested</b>	<b>Lab Id:</b>	439823-001					
	<b>Field Id:</b>	MW-1					
	<b>Depth:</b>						
	<b>Matrix:</b>	WATER					
	<b>Sampled:</b>	Mar-29-12 15:00					
<b>Anions Cl,SO4 by EPA 300/300.1 SUB: TX104704215</b>	<b>Extracted:</b>	Apr-05-12 13:58					
	<b>Analyzed:</b>	Apr-05-12 13:58					
	<b>Units/RL:</b>	mg/L      RL					
Chloride		4950      25.0					
Sulfate		878      25.0					
<b>TDS by SM2540C SUB: TX104704215</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Apr-04-12 17:00					
	<b>Units/RL:</b>	mg/L      RL					
Total dissolved solids		10900      5.00					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron II  
Odessa Laboratory Manager

# Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **MQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



# BS / BSD Recoveries



**Project Name: Pride Energy Company**

**Work Order #: 439823**

**Analyst: TTE**

**Date Prepared: 04/05/2012**

**Project ID: South Four Lakes # 15 (AP-78)**

**Date Analyzed: 04/05/2012**

**Lab Batch ID: 885227**

**Sample: 620198-1-BKS**

**Batch #: 1**

**Matrix: Water**

**Units: mg/L**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Anions Cl,SO4 by EPA 300/300.1</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	<0.500	50.0	50.3	101	50.0	49.7	99	1	90-110	20	
Sulfate	<0.500	50.0	51.1	102	50.0	50.2	100	2	90-110	20	

**Analyst: LBA**

**Date Prepared: 04/04/2012**

**Date Analyzed: 04/04/2012**

**Lab Batch ID: 885128**

**Sample: 885128-1-BKS**

**Batch #: 1**

**Matrix: Water**

**Units: mg/L**

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>TDS by SM2540C</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Total dissolved solids	<5.00	2000	2060	103	2000	2040	102	1	80-120	30	

Relative Percent Difference RPD = 200\*(C-F)/(C+F)

Blank Spike Recovery [D] = 100\*(C)/[B]

Blank Spike Duplicate Recovery [G] = 100\*(F)/[E]

All results are based on MDL and Validated for QC Purposes



# Form 3 - MS Recoveries



Project Name: Pride Energy Company

Work Order #: 439823

Lab Batch #: 885227

Date Analyzed: 04/05/2012

QC- Sample ID: 439871-001 S

Reporting Units: mg/L

Date Prepared: 04/05/2012

Batch #: 1

Project ID: South Four Lakes # 15 (AP-78)

Analyst: TTE

Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	239	50.0	242	6	80-120	X
Sulfate	11.1	50.0	59.2	96	80-120	

Lab Batch #: 885227

Date Analyzed: 04/05/2012

QC- Sample ID: 439974-001 S

Reporting Units: mg/L

Date Prepared: 04/05/2012

Batch #: 1

Analyst: TTE

Matrix: Water

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	15.9	50.0	63.4	95	80-120	
Sulfate	4.59	50.0	54.3	99	80-120	

Matrix Spike Percent Recovery [D] = 100\*(C-A)/B  
 Relative Percent Difference [E] = 200\*(C-A)/(C+B)  
 All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Sample Duplicate Recovery



**Project Name: Pride Energy Company**

**Work Order #: 439823**

**Lab Batch #: 885128**

**Project ID: South Four Lakes # 15 (AP-78)**

**Date Analyzed: 04/04/2012 17:00**

**Date Prepared: 04/04/2012**

**Analyst: LBA**

**QC- Sample ID: 439757-001 D**

**Batch #: 1**

**Matrix: Water**

**Reporting Units: mg/L**

## SAMPLE / SAMPLE DUPLICATE RECOVERY

TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	456	464	2	30	

**Lab Batch #: 885128**

**Date Analyzed: 04/04/2012 17:00**

**Date Prepared: 04/04/2012**

**Analyst: LBA**

**QC- Sample ID: 439899-001 D**

**Batch #: 1**

**Matrix: Water**

**Reporting Units: mg/L**

## SAMPLE / SAMPLE DUPLICATE RECOVERY

TDS by SM2540C	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Total dissolved solids	734	726	1	30	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
 All Results are based on MDL and validated for QC purposes.  
 BRL - Below Reporting Limit





**XENCO Laboratories**  
 Atlanta, Boca Raton, Corpus Christi, Dallas  
 Houston, Miami, Odessa, Philadelphia  
 Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist  
 Document No.: SYS-SRC  
 Revision/Date: No. 01, 5/27/2010  
 Effective Date: 6/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**

Client: Trident / Pride  
 Date/Time: 3:30:12 10:20  
 Lab ID #: 439823  
 Initials: AE

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<del>Water</del>	No	
2. Shipping container in good condition?	<input checked="" type="radio"/> Yes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	<input checked="" type="radio"/> N/A	
4. Chain of Custody present?	<input checked="" type="radio"/> Yes	No		
5. Sample instructions complete on chain of custody?	<input checked="" type="radio"/> Yes	No		
6. Any missing / extra samples?	Yes	<input checked="" type="radio"/> No		
7. Chain of custody signed when relinquished / received?	<input checked="" type="radio"/> Yes	No		
8. Chain of custody agrees with sample label(s)?	<input checked="" type="radio"/> Yes	No		
9. Container labels legible and intact?	<input checked="" type="radio"/> Yes	No		
10. Sample matrix / properties agree with chain of custody?	<input checked="" type="radio"/> Yes	No		
11. Samples in proper container / bottle?	<input checked="" type="radio"/> Yes	No		
12. Samples properly preserved?	<input checked="" type="radio"/> Yes	No	N/A	
13. Sample container intact?	<input checked="" type="radio"/> Yes	No		
14. Sufficient sample amount for indicated test(s)?	<input checked="" type="radio"/> Yes	No		
15. All samples received within sufficient hold time?	<input checked="" type="radio"/> Yes	No		
16. Subcontract of sample(s)?	<input checked="" type="radio"/> Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	<input checked="" type="radio"/> N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:  Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
 Initial and Backup Temperature confirm out of temperature conditions  
 Client understands and would like to proceed with analysis

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
10014 SCR 1213  
Midland, TX 79706**



# Analytical Report

**Prepared for:**

Gilbert Vandeventer

Trident Environmental

P.O. Box 12177

Odessa, TX 79768

Project: Pride Energy Company

Project Number: South Four Lakes #15 (AP-78)

Location: T12S-R34E-Sec 2 Unit Letter G ~ Lea County, NM

Lab Order Number: 2F21002

Report Date: 06/28/12

Trident Environmental  
P.O. Box 12177  
Odessa TX, 79768

Project: Pride Energy Company  
Project Number: South Four Lakes #15 (AP-78)  
Project Manager: Gilbert Vandeventer

Fax: (432) 413-9968

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
MW-1	2F21002-01	Water	06/19/12 16:00	06-21-2012 09:50

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Odessa TX, 79768

Project: Pride Energy Company  
Project Number: South Four Lakes #15 (AP-78)  
Project Manager: Gilbert Vandeventer

Fax: (432) 413-9968

**General Chemistry Parameters by EPA / Standard Methods**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (2F21002-01) Water</b>									
<b>Chloride</b>	<b>4520</b>	100	mg/L	200	EF22503	06/22/12	06/25/12	EPA 300.0	
<b>Total Dissolved Solids</b>	<b>8640</b>	10.0	"	1	EF22601	06/22/12	06/25/12	EPA 160.1	
<b>Sulfate</b>	<b>996</b>	200	"	200	EF22503	06/22/12	06/25/12	EPA 300.0	

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch EF22503 - General Preparation (WetChem)</b>										
<b>Blank (EF22503-BLK1)</b> Prepared: 06/22/12 Analyzed: 06/25/12										
Sulfate	ND	1.00	mg/L							
Chloride	ND	0.500	"							
<b>LCS (EF22503-BS1)</b> Prepared: 06/22/12 Analyzed: 06/25/12										
Sulfate	9.23		mg/L	10.0		92.3	80-120			
Chloride	8.82		"	10.0		88.2	80-120			
<b>LCS Dup (EF22503-BSD1)</b> Prepared: 06/22/12 Analyzed: 06/25/12										
Sulfate	9.20		mg/L	10.0		92.0	80-120	0.326	20	
Chloride	9.04		"	10.0		90.4	80-120	2.46	20	
<b>Duplicate (EF22503-DUP1)</b> Source: 2F21003-01 Prepared: 06/22/12 Analyzed: 06/25/12										
Sulfate	290	50.0	mg/L		295			1.71	20	
Chloride	1260	25.0	"		1280			1.57	20	
<b>Matrix Spike (EF22503-MS1)</b> Source: 2F21003-01 Prepared: 06/22/12 Analyzed: 06/25/12										
Sulfate	575	50.0	mg/L	250	295	112	80-120			
Chloride	1610	25.0	"	250	1280	132	80-120			M1
<b>Batch EF22601 - General Preparation (WetChem)</b>										
<b>Blank (EF22601-BLK1)</b> Prepared: 06/22/12 Analyzed: 06/25/12										
Total Dissolved Solids	ND	10.0	mg/L							
<b>Duplicate (EF22601-DUP1)</b> Source: 2F21001-01 Prepared: 06/22/12 Analyzed: 06/25/12										
Total Dissolved Solids	510	10.0	mg/L		570			11.1	20	

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EF22601 - General Preparation (WetChem)**

**Duplicate (EF22601-DUP2)**

Source: 2F21001-11

Prepared: 06/22/12 Analyzed: 06/25/12

Total Dissolved Solids	850	10.0	mg/L		710			17.9	20	
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### Notes and Definitions

M1	The MS and/or MSD were above the acceptance limits due to sample matrix interference. See Blank Spike (LCS).
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:



Date:

6/28/2012

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

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Permian Basin Environmental Lab, LP  
 10014 S. County Road 1213  
 Midland, Texas 79706  
 Phone: 432-661-4184

Page 1 of 1  
 COC No.: AP78-0612  
 CHAIN-OF-CUSTODY AND ANALYSIS REQUEST  
 LAB Order ID # 2F21002

Company Name: Trident Environmental  
 Project Manager: Gil Van Deventer / Trident Environmental  
 Address: (Street, City, Zip) PO Box 710950, Tulsa, OK 74170-1950  
 Phone #: (918) 524-9200  
 Fax #: (918) 524-9292

BILL TO Company: Pride Energy Company / Attention: Matt Pride  
 Address: (Street, City, Zip) PO Box 710950, Tulsa, OK 74170-1950  
 Phone #: (918) 524-9200  
 Fax #: (918) 524-9292

Project #: (432) 638-8740  
 Project Name: South Four Lakes #15 (AP-78)  
 Project Location: T12S-R34E-Sec 2 Unit Letter G ~ Lea County, NM

Project Name: Pride Energy Company  
 Sampler Signature: *[Signature]*

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX				PRESERVATIVE METHOD				DATE	TIME	
				WATER	SOIL	AIR	SLUDGE	HCL (BTEX only)	HNO <sub>3</sub>	NaHSO <sub>4</sub>	H <sub>2</sub> SO <sub>4</sub>			ICE
-01			1	X									6/19/12	1600

MTBE 8021B/602	
BTEX 8021 B	
TPH 418.1/TX1005 / TX1005 Extended (C35)	
PAH 8270C	
Total Metals Ag As Ba Cd Cr Pb Se Hg 6010B/200.7	
TCLP Metals Ag As Ba Cd Cr Pb Se Hg	
TCLP Volatiles	
TCLP Semi Volatiles	
TCLP Pesticides	
RCI	
GC/MS Vol. 8260B/624	
GC/MS Semi. Vol. 8270C/625	
Moisture Content	
Cations (Ca, Mg, Na, K)	
Anions (Cl, SO <sub>4</sub> , CO <sub>3</sub> , HCO <sub>3</sub> )	
Total Dissolved Solids (160.1 or SM2540C)	X
Chloride / Cl <sup>-</sup> (SM4500 B or 300.1)	X
Sulfate / SO <sub>4</sub> (375.4)	X
Turn Around Time ~ 24 Hours	

Relinquished by: *[Signature]* Date: 6/21/12 Time: 09:50  
 Received by: *[Signature]* Date: 6/19/12 Time: 08:50  
 Relinquished by: *[Signature]* Date: 6/21/12 Time: 09:50  
 Received by: *[Signature]* Date: 6/19/12 Time: 08:50

REMARKS: Samples not field filtered  
 Phone Results: Yes [ ] No [X]  
 Fax Results: Yes [ ] No [X]  
 Additional Fax Number: \_\_\_\_\_

Delivered By: (Circle One) UPS - Bus - Other: \_\_\_\_\_  
 Sample Condition: 0, 5, 90  
 Cool / Contact: Yes [ ] No [X]  
 CHECKED BY: *[Signature]* (Initials) *SS*  
 Email Results to: [gil@trident-environmental.com](mailto:gil@trident-environmental.com)  
[mattp@pride-energy.com](mailto:mattp@pride-energy.com)

**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
10014 SCR 1213  
Midland, TX 79706**



# Analytical Report

**Prepared for:**

Gilbert Vandeventer  
Trident Environmental  
P.O. Box 12177  
Odessa, TX 79768

Project: South Four Lakes #15 (AP-78)

Project Number: (AP-78)

Location: None Given

Lab Order Number: 2127004



**NELAP/TCEQ # T104704156-12-1**

Report Date: 10/04/12

Trident Environmental  
P.O. Box 12177  
Odessa TX, 79768

Project: South Four Lakes #15 (AP-78)  
Project Number: (AP-78)  
Project Manager: Gilbert Vandeventer

Fax: (432) 413-9968

**ANALYTICAL REPORT FOR SAMPLES**

<b>Sample ID</b>	<b>Laboratory ID</b>	<b>Matrix</b>	<b>Date Sampled</b>	<b>Date Received</b>
MW-1	2127004-01	Water	09/26/12 12:00	09-27-2012 13:00

Trident Environmental  
P.O. Box 12177  
Odessa TX, 79768

Project: South Four Lakes #15 (AP-78)  
Project Number: (AP-78)  
Project Manager: Gilbert Vandeventer

Fax: (432) 413-9968

**General Chemistry Parameters by EPA / Standard Methods**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-1 (2127004-01) Water</b>									
<b>Chloride</b>	<b>4590</b>	100	mg/L	200	EJ20202	10/02/12	10/02/12	EPA 300.0	
<b>Total Dissolved Solids</b>	<b>8920</b>	10.0	"	1	EJ20305	10/02/12	10/03/12	EPA 160.1	
<b>Sulfate</b>	<b>1010</b>	200	"	200	EJ20202	10/02/12	10/02/12	EPA 300.0	

Trident Environmental  
P.O. Box 12177  
Odessa TX, 79768

Project: South Four Lakes #15 (AP-78)  
Project Number: (AP-78)  
Project Manager: Gilbert Vandeventer

Fax: (432) 413-9968

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EJ20202 - \*\*\* DEFAULT PREP \*\*\***

**Blank (EJ20202-BLK1)**

Prepared & Analyzed: 10/02/12

Sulfate	ND	1.00	mg/L							
Chloride	ND	0.500	"							

**LCS (EJ20202-BS1)**

Prepared & Analyzed: 10/02/12

Sulfate	9.80		mg/L	10.0		98.0	80-120			
Chloride	9.45		"	10.0		94.5	80-120			

**LCS Dup (EJ20202-BSD1)**

Prepared & Analyzed: 10/02/12

Sulfate	9.79		mg/L	10.0		97.9	80-120	0.163	20	
Chloride	9.32		"	10.0		93.2	80-120	1.37	20	

**Duplicate (EJ20202-DUP1)**

Source: 2127004-01

Prepared & Analyzed: 10/02/12

Sulfate	987	200	mg/L		1010			2.80	20	
Chloride	4390	100	"		4590			4.44	20	

**Matrix Spike (EJ20202-MS1)**

Source: 2127004-01

Prepared & Analyzed: 10/02/12

Sulfate	3030	200	mg/L	1750	1010	115	80-120			
Chloride	6530	100	"	1750	4590	111	80-120			

**Batch EJ20305 - \*\*\* DEFAULT PREP \*\*\***

**Blank (EJ20305-BLK1)**

Prepared: 10/02/12 Analyzed: 10/03/12

Total Dissolved Solids	ND	10.0	mg/L							
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**Duplicate (EJ20305-DUP1)**

Source: 2128001-01

Prepared: 10/02/12 Analyzed: 10/03/12

Total Dissolved Solids	79400	10.0	mg/L		78900			0.632	20	
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Odessa TX, 79768

Project: South Four Lakes #15 (AP-78)  
Project Number: (AP-78)  
Project Manager: Gilbert Vandeventer

Fax: (432) 413-9968

### Notes and Definitions

DET Analyte DETECTED  
ND Analyte NOT DETECTED at or above the reporting limit  
NR Not Reported  
dry Sample results reported on a dry weight basis  
RPD Relative Percent Difference  
LCS Laboratory Control Spike  
MS Matrix Spike  
Dup Duplicate

Report Approved By:



Date:

10/4/2012

Brent Barron, Laboratory Director/Technical Director

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**PERMIAN BASIN  
ENVIRONMENTAL LAB, LP  
10014 SCR 1213  
Midland, TX 79706**



# Analytical Report

**Prepared for:**

Gilbert Vandeventer  
Trident Environmental  
P.O. Box 12177  
Odessa, TX 79768

Project: Pride Energy Company  
Project Number: South Four Lakes #15 (AP-78)  
Location: T12S-R34E-Sec 2 Unit Letter G~Lea County, NM  
Lab Order Number: 3A02002



**NELAP/TCEQ # T104704156-12-1**

Report Date: 01/10/13

Trident Environmental  
P.O. Box 12177  
Odessa TX, 79768

Project: Pride Energy Company  
Project Number: South Four Lakes #15 (AP-78)  
Project Manager: Gilbert Vandeventer

Fax: (432) 413-9968

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1	3A02002-01	Water	12/27/12 12:00	12-28-2012 15:15

**General Chemistry Parameters by EPA / Standard Methods  
Permian Basin Environmental Lab**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>MW-1 (3A02002-01) Water</b>									
<b>Chloride</b>	<b>4140</b>	100	mg/L	200	EA30302	01/03/13	01/03/13	EPA 300.0	
<b>Total Dissolved Solids</b>	<b>8260</b>	50.0	"	1	EA30804	01/02/13	01/08/13	EPA 160.1	
<b>Sulfate</b>	<b>851</b>	200	"	200	EA30302	01/03/13	01/03/13	EPA 300.0	

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EA30302 - \*\*\* DEFAULT PREP \*\*\***

**Blank (EA30302-BLK1)**

Prepared & Analyzed: 01/03/13

Sulfate	ND	1.00	mg/L							
Chloride	ND	0.500	"							

**LCS (EA30302-BS1)**

Prepared & Analyzed: 01/03/13

Sulfate	10.9		mg/L	10.0		109	80-120			
Chloride	9.99		"	10.0		99.9	80-120			

**LCS Dup (EA30302-BSD1)**

Prepared & Analyzed: 01/03/13

Sulfate	10.9		mg/L	10.0		109	80-120	0.0828	20	
Chloride	9.99		"	10.0		99.9	80-120	0.0100	20	

**Duplicate (EA30302-DUP1)**

Source: 3A02002-01

Prepared & Analyzed: 01/03/13

Sulfate	1040	200	mg/L		851			19.9	20	
Chloride	4140	100	"		4140			0.00	20	

**Matrix Spike (EA30302-MS1)**

Source: 3A02002-01

Prepared & Analyzed: 01/03/13

Sulfate	2850	200	mg/L	1750	851	114	80-120			
Chloride	5960	100	"	1750	4140	104	80-120			

**Matrix Spike (EA30302-MS2)**

Source: 2L28001-04

Prepared & Analyzed: 01/03/13

Sulfate	3660	100	mg/L	1250	2650	81.1	80-120			
Chloride	45600	500	"	1250	35800	781	80-120			QM-05

**Batch EA30804 - \*\*\* DEFAULT PREP \*\*\***

**Blank (EA30804-BLK1)**

Prepared & Analyzed: 01/08/13

Total Dissolved Solids	40.0	10.0	mg/L							
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Project: Pride Energy Company  
Project Number: South Four Lakes #15 (AP-78)  
Project Manager: Gilbert Vandeventer

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**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Permian Basin Environmental Lab**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EA30804 - \*\*\* DEFAULT PREP \*\*\***

**Duplicate (EA30804-DUP1)**

**Source: 3A02003-04**

Prepared & Analyzed: 01/08/13

Total Dissolved Solids	1690	10.0	mg/L		1690			0.00	20	
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### Notes and Definitions

QM-05	The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference
LCS	Laboratory Control Spike
MS	Matrix Spike
Dup	Duplicate

Report Approved By:



Date: 1/10/2013

Brent Barron, Laboratory Director/Technical Director

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