MISC
AP-080 Stage 2 Plan Proposal

DATE:
2008

December 19, 2008

Stage 2 Abatement Plan

Pride Energy
State QE 13 #1
API # 30-025-29634

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

December 19, 2008

Stage 2 Abatement Plan

Pride Energy
State QE 13 #1
API # 30-025-29634

prepared for:

Pride Energy Company
2250 E. 73rd Street
Suite 550
Tulsa, OK 74136

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1 Summary

1. Tenneco Oil Company (Tenneco) drilled State QE 13 #1 at this location in 1986.
2. In 2005, Pride Energy constructed a drilling pit for State QE 13 #1 at the same location as the 1986 drilling pit.
3. Evidence collected to date permits a conclusion that the horizontal extent of ground water impairment (chloride concentrations greater than 250 mg/L) is restricted to the area of the production pad.
4. Evidence collected to date permit a conclusion that the vertical extent of ground water impairment (chloride concentrations greater than 250 mg/L) near MW-01 is restricted to the ground water zone above a depth of 51 feet below grade.
5. The magnitude and extent of brine impact is consistent with a release from the 1986 drilling pit of Tenneco and the 2004 drilling pit of Pride Energy.
6. After evaluation of the data from the proposed ground water monitoring program, we will recommend:
    - Allowing natural processes to restore ground water quality, or
    - Implementing a pump-and-use ground water restoration strategy.
7. The proposed drilling pit excavation closure is construction of an infiltration barrier to effectively abate the transport of salt from the vadose zone to ground water.
8. Regulated hydrocarbons are not present in ground water or the vadose zone.

2 Description of the Site

2.1 Location

The site is in T12S R34E Section 13 Unit Letter N (N 33° 16' 22.9", W 103° 27' 55.2", API # 30-025-29634). To access the site:

1. Drive west on Highway 380 about ten miles from the intersection of Highway 380 and Highway 206 in Tatum, New Mexico
2. Proceed south about 1.5 miles on the dirt access road and turn east at the road intersection
3. Drive west about 0.6 miles and turn north onto the access road to the well
4. The site is at the end of the access road.

Plates 1 and 2 of the Stage 1 Abatement Plan[1] show the general area and access to the site.

2.2 Site Map – Plate 1

As of May 13, 2008, current environs at the site include:

- an operational gas well
- an open drilling pit excavation
- five soil borings within the excavation
- five soil borings on the drilling pad
- two monitoring wells.

Plate 1 is a site map showing these features plotted on a 2005 aerial photograph that also shows the location of the Pride Energy drilling pit.

2.3 Field Program May-July, 2008

On May 6, 2008, R.T. Hicks Consultants (Hicks Consultants) performed a soil boring program at the State QE 13 #1 site. The purpose of the soil boring program was to delineate the vertical and horizontal extent of ground water impairment caused by the former drilling pit as discussed in our Stage 1 Abatement Plan.

We have performed two quarterly ground water monitoring and sampling activities at the site since the boring program.

Our findings during the soil boring program and ground water monitoring activities are discussed below; followed by proposed recommendations.

[1] Pride Energy Company – State QE 13 #1 Site Stage 1 Abatement Plan (AP-80), RT Hicks Consultants, April 14th, 2008.

2.4 Site History – Table 1 and Plate 2

Table 1 Site History

Date	Description
April, 1986	Well spudded by Tenneco
August 4, 1986	Tenneco submits well completion details to OCD
Unknown	No closure or plugging details on OCD web site
March 2004	Pride submits C-102
May 2004	Pride submits C-101 Application to Permit to Drill
June 23, 2005	Pride submits C-105 Well Completion Report
August 29, 2007	Submit C-144
December 12, 2007	Revised C-144 submitted by Elke Environmental to NMOCD
February 12, 2008	NMOCD requires submission of Abatement Plan
April 14, 2008	Stage 1 Abatement Plan submitted by R.T. Hicks Consultants to NMOCD
May 09, 2008	Soil boring program to define vertical and horizontal extent of any impairment to ground water
June 19, 2008	Sampling and monitoring event
August 9, 2008	Sampling and monitoring event
December, 2008	Stage 2 Abatement Plan submitted by R.T. Hicks Consultants to NMOCD

Our examination of historic aerial photographs show that the drilling pit used by Pride Energy was located at the same location as the drilling pit used for the drilling of the original well in 1986 by Tenneco Oil Company. Plate 2 is a 1986 aerial photo that shows the 1986 drilling pit with the configuration of the 2005 Pride Energy drilling activities superimposed.

3 May 2008 Deep Sampling Program – Field Protocols and Modification of the Stage 1 Abatement Plan

On May 6, 2008, Hicks Consultants mobilized to the site to perform soil boring activities. Hicks Consultants selected Atkins Engineering (Atkins), from Roswell, NM, as the drilling contractor. Using a Foremost Mobile 58 drilling rig and a 7 ¼- inch O.D. hollow stem auger, we installed 5 soil borings at the site.

After examination of historic air photos and a close examination of the site, we modified the location of one of the three soil borings shown in Plate 6 of the Stage 1 Abatement Plan; we drilled two additional borings not shown on Plate 6 of the Stage 1 Abatement Plan. We elected to drill the first boring adjacent to the existing MW-01. A second and third boring was drilled as proposed in the Stage 1 Abatement Plan, cross-gradient and down gradient

(southeast), respectively, of the existing MW-01. The depth discrete ground water specific conductivity readings from the third boring obviated the need to drill an additional down gradient boring. The relatively high field conductance of ground water samples at the third boring was surprising because the release from the drilling pit was relatively recent. The fourth boring is about 110 feet down gradient from the edge of the drilling pit. The fifth boring is adjacent to MW-01 and out of the deadman zone, allowing us to complete it as a deep monitoring well, relative to MW-01.

At each boring location, we:

1. Created a borehole log.
2. Measured specific conductance (SC) of ground water collected through the auger using a trip bailer. SC was measured using a Hanna Combo pH & EC meter (Model No. HI 98130). We used the SC measurements to determine the:
    a. vertical and horizontal extent of any ground water impairment, and
    b. location of additional boreholes.
3. When conditions allowed, we obtained ground water samples through the auger for laboratory analysis for SC, chloride, and total dissolved solids (TDS) to correlated field measurements with laboratory measurements. We submitted the ground water samples to Hall Environmental Laboratories in Albuquerque, NM. Laboratory Certificates of Analysis are in Appendix A.

We completed soil boring number 5 as a monitoring well outside of the deadman (well anchor) zone. The Association of Energy Service Companies (AESC) recommended safe procedures and guidelines for oil and gas well servicing[2] states "During operations, all wireline units, other vehicles, or portable houses and equipment should be placed outside the guylines of the well service unit and outside the fall zone (lane) of the derrick". The standpipe for a monitoring well would create a hazard during well servicing if placed within the deadman zone.

Because ground water analysis of samples from the existing MW-1 did not detect regulated hydrocarbons and deep soil samples from within the former pit did not detect TPH, we did not collect samples from the auger borings for analysis of regulated hydrocarbons.

4 Results of Deep Sampling Program

4.1 Soil Boring SB-01 – Plate 3

SB-01 is located approximately 31-feet southeast from the southeast corner of the former drilling pit. The borehole log is shown on Plate 3.

Total depth of this borehole is 55-feet. The upper 23-feet consist of caliche. Twenty-three to 55-feet below ground surface (bgs) is composed of fine sand.

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[2] Association of Energy Service Companies (AESC) Recommended Safe Procedures and Guidelines for Oil and Gas Well Servicing. Available: http://www.aesc.net/Safety/index.cfm?action=view&pdfid=27 and http://www.aesc.net/Safety/index.cfm. Accessed July 3, 2008.

Ground water was encountered at 38.5-feet bgs. Field measurements indicate SC in ground water at the ground water table is 6.99 mS/cm.

We plugged the soil boring with cuttings and grout. Please see the borehole log for completion details.

Originally, SB-01 was to be completed as a deep monitoring well. However, the borehole was within the deadman zone. Therefore, we drilled SB-05 and completed the well as MW-01 Deep. SB-05 is discussed below.

4.2 Soil Boring SB-02 – Plate 4

SB-02 is located cross gradient approximately 65-feet east from the southeast corner of the former drilling pit. The borehole log is shown on Plate 4.

Total depth of this borehole is 47.5-feet. The upper 11-feet consist of caliche. Eleven to total depth is composed of fine sand with interbedded quartzite.

Ground water was encountered at 38.4-feet bgs. Ground water was encountered at 38.5-feet bgs. Field measurements indicate SC in ground water at the ground water table is 2.98 mS/cm.

We plugged the boring with cuttings and grout. Please see the borehole log for completion details.

4.3 Soil Boring SB-03 – Plate 5

SB-03 is located down gradient approximately 70-feet south southeast from the southeast corner of the former drilling pit. The borehole log is shown on Plate 5.

Total depth of this borehole is 63-feet. The upper 32-feet consist of caliche. Thirty-two to 62-feet is composed of find sands and interbedded quartzite. From 62-feet to total depth is composed of hard quartzite.

Ground water was encountered at 43-feet bgs. We obtained field measurements at 43.6, 58, and 63-feet bgs. Field measurements indicate SC decreases with depth, from 4.0 mS/cm at 43.6-feet bgs to 2.4 mS/cm at 63-feet bgs. We obtained sufficient sample volume for laboratory analysis of ground water at 58-feet bgs. Field and laboratory analysis of ground water samples is shown in Table 2, below.

We plugged the boring with cuttings and grout. Please see the borehole log for completion details.

4.4 Soil Boring SB-04 – Plate 6

SB-04 is located down gradient approximately 116-feet southeast from the southeast corner of the former drilling pit. The borehole log is shown on Plate 6.

Total depth of this borehole is 55-feet. The upper 23-feet consist of caliche. Twenty-three to 55-feet is composed of fine sand.

Ground water was encountered at 38-feet bgs. We obtained field measurements at 53-feet bgs. Field measurements indicate SC 0.88 mS/cm at 53-feet bgs. We obtained sufficient

sample volume for laboratory analysis of ground water at 55-feet bgs. Field and laboratory analysis of ground water samples is shown in Table 2, below.

We plugged the boring with cuttings and grout. Please see the borehole log for completion details.

4.5 Soil Boring SB-05 – Plate 7

SB-05 is located down gradient approximately 35-feet east southeast from the southeast corner of the former drilling pit; adjacent to MW-01. The borehole log is shown on Plate 7.

Total depth of this borehole is 63-feet. The upper 17-feet consist of caliche. Seventeen to 63-feet is composed of find sands and interbedded quartzite.

Ground water was encountered at 38-feet bgs. We obtained field measurements at 63-feet bgs. Combining field measurements at SB-01 and SB-05, measurements indicate SC decreases with depth, from 6.99 mS/cm at 38.55-feet bgs to 2.20 mS/cm at 63-feet bgs.

We completed SB-05 as monitoring well MW-01 Deep. Total depth of MW-01 Deep is 63-feet with 10-feet of screen from 53 to 63-feet bgs.

4.6 Analyses of Ground Water from Borings– Table 2 and Plate 8

Table 2 presents all of the data obtained during the boring program and Plate 8 shows the data in relation to the site.

Table 2: Analysis of ground water samples from soil boring program

Boring ID	Depth (ft bgs)	Field Measured Values	Lab Analyzed Values		
		SC (mS/cm)	SC (mS/cm)	Chloride (mg/L)	TDS (mg/L)
SB-01	38.55	6.99	--	--	--
SB-02	38.4	2.98	--	--	--
SB-03	43.6	4	--	--	--
	58	3	1.9	430	1,500
	63	2.4	--	--	--
SB-04	55	0.88	0.89	67	720
SB-05	63	2.2	--	--	--

--- indicates insufficient sample volume for lab analysis

4.7 Ground Water Monitoring Well Sampling – Table 3, Plate 9 and Appendix A

On June 16 and 19 and September 9, 2008, Rozanne Johnson of Arc Environmental, the selected contractor for Hicks Consultants, mobilized to the site to perform well development of one newly-drilled well and sampling and monitoring of the newly installed well and the existing monitoring well.

Table 3, below, summarizes recent and historic ground water chemistry and ground water elevation measurements at MW-01 and MW-01 Deep. The Certificate of Analysis for the June 19th and September 9th sampling events are in Appendix A. The results of the sampling are also presented in Plate 9.

Table 3 - Monitoring Well Sampling Results

Well Name	Date	GW Elev	DTW	Cl	TDS	Specific Conductance (field measured)
		(ft msl)	(ft)	(mg/L)	(mg/L)	(mS/cm)
MW-01	1/24/2008	4,097.45	38.5	1,490		
MW-01	3/13/2008	4,097.47	38.48	4,340	6,040	6.78
MW-01	6/19/2008	4,097.36	35.59	1,760	3,310	5.62
MW-01	9/9/2008	4,097.36	38.59	1,000	2,590	3.9
MW-01 Deep	6/19/2008	4,098.37	38.03	66.7	464	0.82
MW-01 Deep	9/9/2008	4,098.33	38.07	64	542	0.7

5 Discussion and Conclusions

5.1 Ground Water Flow is Southeast – Plate 10

Regional ground water data suggest a southeast ground water flow direction in much of the South Four Lakes area. Data from the gauging of the newly-installed monitor wells at the various sites in the area suggest a southeast direction of ground water flow at the State QE 13 #1 (Plate 10).

5.2 The Magnitude and Extent of Brine Impact is Consistent with a 2005 and 1986 Release

The lithologic data presented in Plates 3 through 7 shows that the upper portion of the aquifer is composed of fine sand.

A pump test conducted by Trident Environmental and R.T. Hicks Consultants in September 2008 at the South Four Lakes Tank Battery shows a hydraulic conductivity of 6 ft/day for the upper portion of the Ogallala aquifer. The wells at the tank battery represent the upper portion of the aquifer. A pump test was also conducted on a water well located approximately 1-mile north of the tank battery that is representative of the entire saturated thickness of the Ogallala aquifer. Pump test results show that the hydraulic conductivity across the entire aquifer is approximately 65-feet/day with a chloride concentration of 39 mg/L. According to Musharrafieh and Chudnoff[3], the hydraulic conductivity of the Ogallala Aquifer in this area is 40-60 ft/day. Because the Ogallala Aquifer is coarser grained at the base of the unit, the much lower hydraulic conductivity in the upper portion of the aquifer relative to published data for the aquifer and the test of the fully-penetrating well is not surprising.

Plate 10 shows that the hydraulic gradient in the area of the site is approximately 0.002. Assuming a hydraulic conductivity of 6 ft/day, an assumed porosity of 0.3 and use of Darcy's equation, the average linear velocity of ground water at the site is approximately 15 feet/year.

[3] Numerical Simulation of Groundwater Flow for Water Rights Administration in the Lea County Underground Water Basin New Mexico, New Mexico Office of the State Engineer, Technical Report 99-1, 1999

If we assume that the average linear velocity of ground water is 15 feet/year, a brine release in 1986 would migrate about 330 feet from the source. A brine release in 2005 would migrate only 45 feet. As shown in Table 4 (below), SB-01, SB-03 and possibly SB-04 will show impacts from a 1986 drilling pit release. SB-01 and possibly SB-03 will show impacts from a 2005 drilling pit release. SB-04 will show no signs of impact from the 2005 release but would show chloride concentrations higher than background due to brine transport after a 1986 release.

Table 4: Distance from drilling pits to soil borings			
	Distance from Drilling Pit (feet)		
	SB-01	SB-03	SB-04
1986 Drilling Pit	65	103	151
2005 Drilling Pit	34	72	117

Plate 11 shows our interpretation of the magnitude and extent of chloride from the Tenneco and Pride Energy drilling pits. Chloride isoconcentrations agree with specific conductance in ground water obtained during the May 2008 drilling activities (see Plate 8).

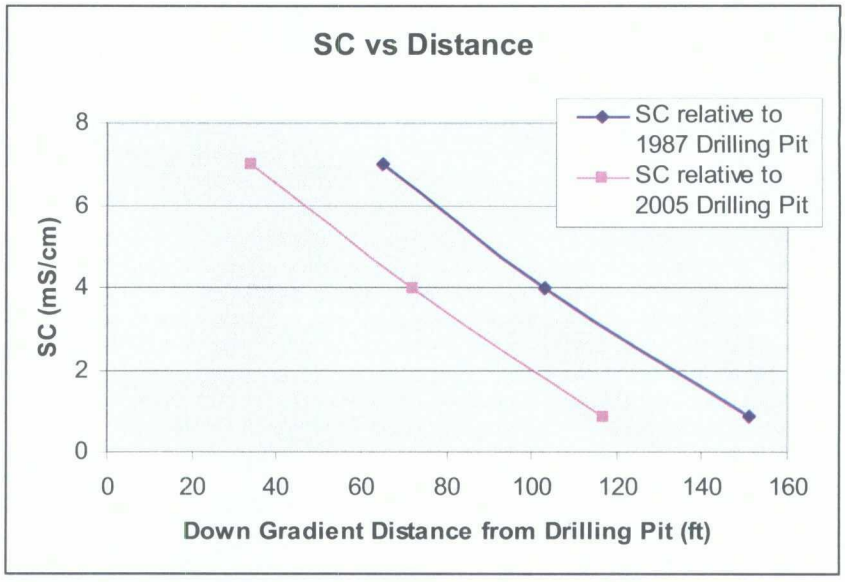

Figure 1: SC decreases with distance from drilling pits

Furthermore, as shown in Figure2, specific conductance in ground water during drilling activities decreases from 6.99 mS/cm to 0.88 mS/cm as the downgradient distance increases from the drilling pits.

We conclude that brine released from the 1986 and possibly the 2005 drilling pit have impaired ground water at MW-01. MW-01 Deep shows no impairment. Impairment of ground water quality at SB-03 is most likely from the 1987 drilling pit. SB-04 shows no signs of impairment but chloride may be background concentrations. Background chloride concentrations in nearby water wells range from 39 (OSE water well L3005) to 116 mg/L (MW-02 at the South Four Lakes Tank Battery).

5.3 Natural Dilution and Dispersion Will Effectively Abate the Ground Water Impairment

At this site, we believe the ground water flux is relatively low due to the small hydraulic gradient and fine-grained sediments that comprise the uppermost ground water zone. While this condition will minimize migration of the documented ground water impairment, natural restoration of ground water due to dilution and dispersion will require decades. Due to the location of the site, we believe it highly unlikely that the area of the production pad will be a site of ground water use in the foreseeable future. Therefore, rapid restoration of ground water quality is not warranted.

6 Stage II Abatement Plan

Data collected to date indicates impaired ground water exists beneath the site and chloride above 1,000 mg/kg exists in the vadose zone below the former drilling pit. The source of the chloride in the vadose zone is the Pride drilling pit and residual chloride from an earlier release from the Tenneco drilling pit (1986). The origin of the chloride detected in monitoring well MW-1, is probably leakage from the Tenneco and Pride drilling pits.

6.1 Ground Water Remedy

Although the impairment of ground water was probably caused by Tenneco, Pride Energy proposes to:

1. Conduct two additional quarterly ground water sampling events and evaluate the recovery of each well after sampling. These data should assist in creating a better estimate of the hydraulic conductivity of the uppermost saturated zone, the rate of natural ground water restoration and the rate of contaminant migration.
2. Evaluate the ground water monitoring and sampling data and in April 2009 provide an annual report to NMOCD that evaluates the data and recommends:
    i. Allowing natural processes to abate the ground water impairment, or
    ii. Implementing a pump-and-use ground water restoration strategy.

6.2 Vadose Zone Remedy

1. Expand the existing drilling pit excavation as necessary to create a 3-foot wide area where subsurface impact of pit leakage does not exist (Plate 12, step 1).
2. Use the material from the pit expansion or deepen the excavation as necessary to create a mounded surface that slopes away from the center on the bottom of the excavation as suggested in Plate 12, step 2.
3. Over the mounded sloping surface, place "shingles" of recycled or new 20-mil, reinforced liner material that meet NMOCD specifications. The shingles are laid to shed any infiltrated water from the pit area to native soil and to prevent any upward migration of chloride into the root zone.
4. Backfill the excavation with clean material, beginning with caliche and/or sand and finishing the top of the backfill with about 6-inches of soil that is capable of supporting native vegetation.

5. The new grade is a 3-5% slope that drains to a "ponding area". The final grade of the surface over the former pit should blend with the surroundings as much as possible. Plate 12, step 3, which shows a 5% slope that resembles a large "pitchers mound", is one example of a final surface that allows for drainage of stormwater away from the former drilling pit.
6. Seed the reclaimed pit with a mixture approved by the State Land Office.

6.3 Schedule of Activities

We will perform two additional ground water monitoring and sampling events at MW-1 and MW-01 Deep to complete a full year of quarterly monitoring at the site. We will analyze the ground water for the following:

- Major Anions/Cations
- TDS
- BTEX

Upon OCD approval of the Abatement Plan, Pride will commence the vadose zone remedy. Upon completion of the approved vadose zone remedy and proposed ground water sampling, Pride Energy will submit an annual report that evaluates data and proposes a path forward for addressing ground water at the site as discussed in Section 6.1.

Plates

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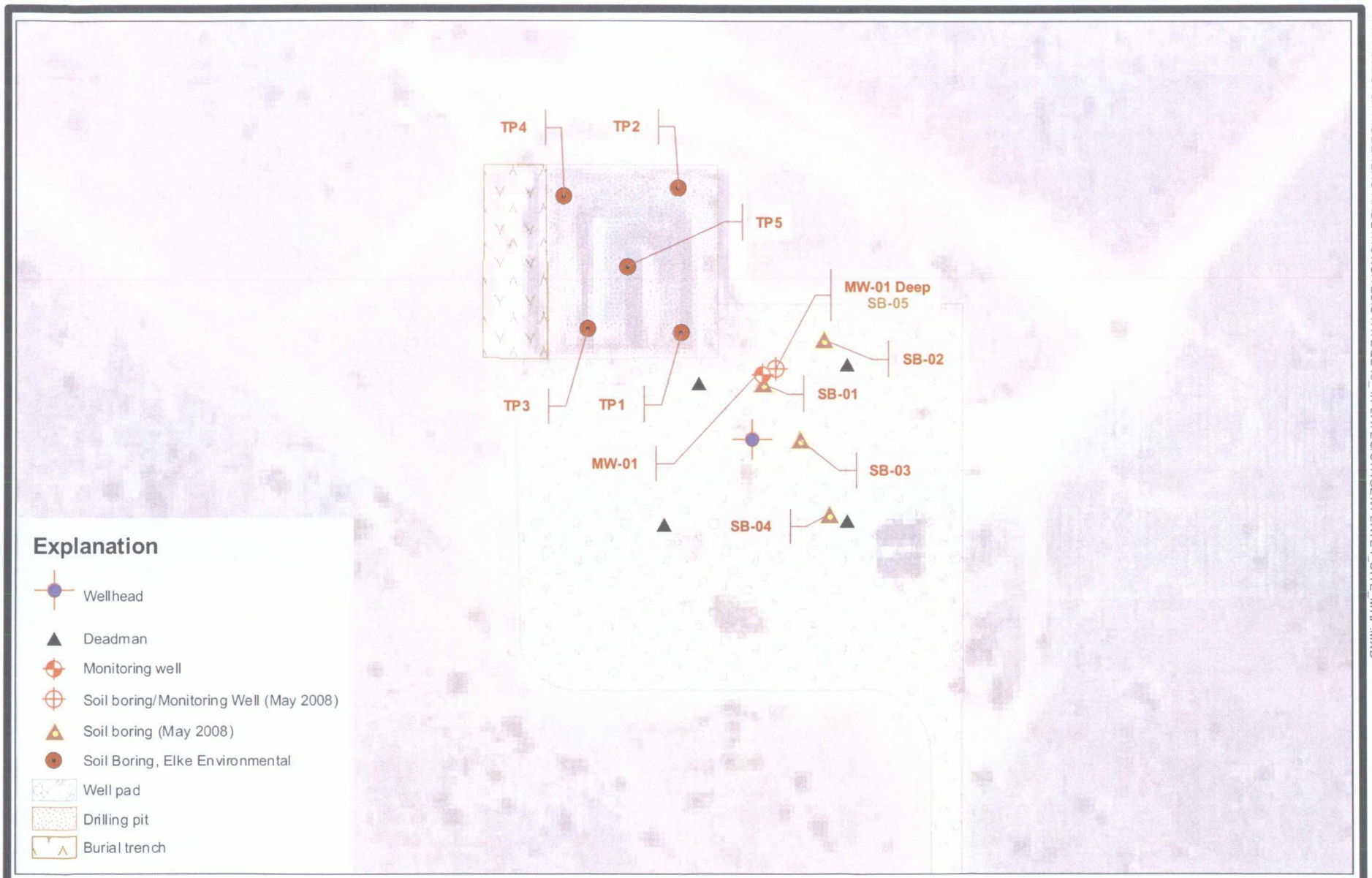

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	Site Map	Plate 1
	Pride Energy: State QE 13 #1	October 2008

10/16/2008

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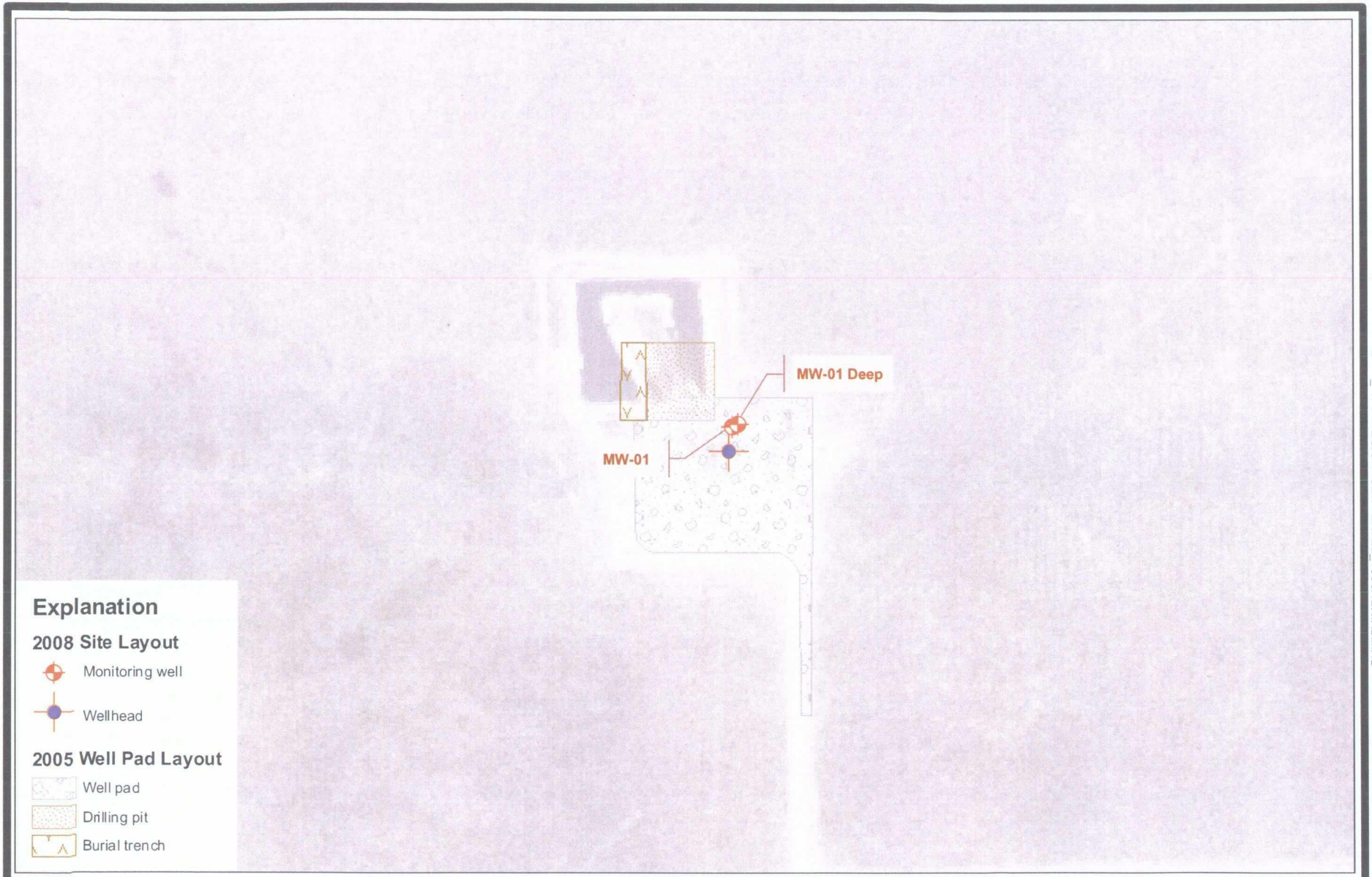

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104 Ph: 505.266.5004	2005 Well Pad Layout Overlayed on a 1986 Aerial Photograph (USGS)	Plate 2
	Pride Energy: State QE 13 #1	October 2008

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10/16/2008

Borehole/Well Log

Site Name:	State QE 13 #1	Coordinate System:	UTM Zone 13 (meters)
Address:	8.6 miles west on Hwy 380	X:	642841.56
City, State:	Tatum, NM	Y:	3682644.45
County:	Lea	Z:	
Driller:	Atkins Engineering	Datum:	NAD 83
Auger Type:	Hollow Stem	Borehole ID:	SB-01
Auger Dia.:	7.25	Well ID:	
Drill Date:	05/06/2008	Total Depth:	55

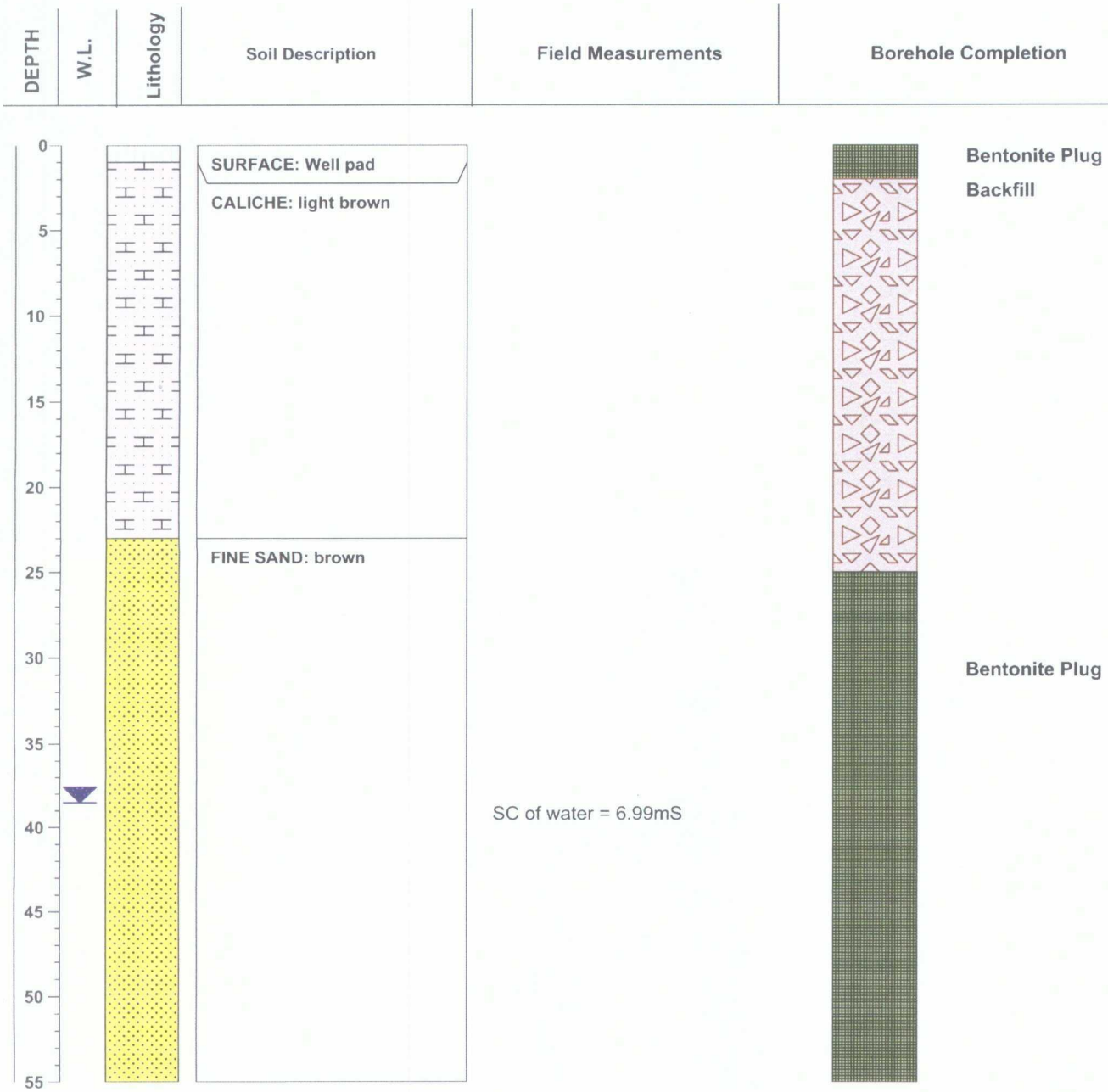

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Plate 3

Borehole/Well Log

Site Name:	State QE 13 #1	Coordinate System:	UTM Zone 13 (meters)
Address:	8.6 miles west on Hwy 380	X:	642850.295
City, State:	Tatum, NM	Y:	3682652.784
County:	Lea	Z:	
Driller:	Atkins Engineering	Datum:	NAD 83
Auger Type:	Hollow Stem	Borehole ID:	SB-02
Auger Dia.:	7.25	Well ID:	
Drill Date:	05/06/2008	Total Depth:	47.5

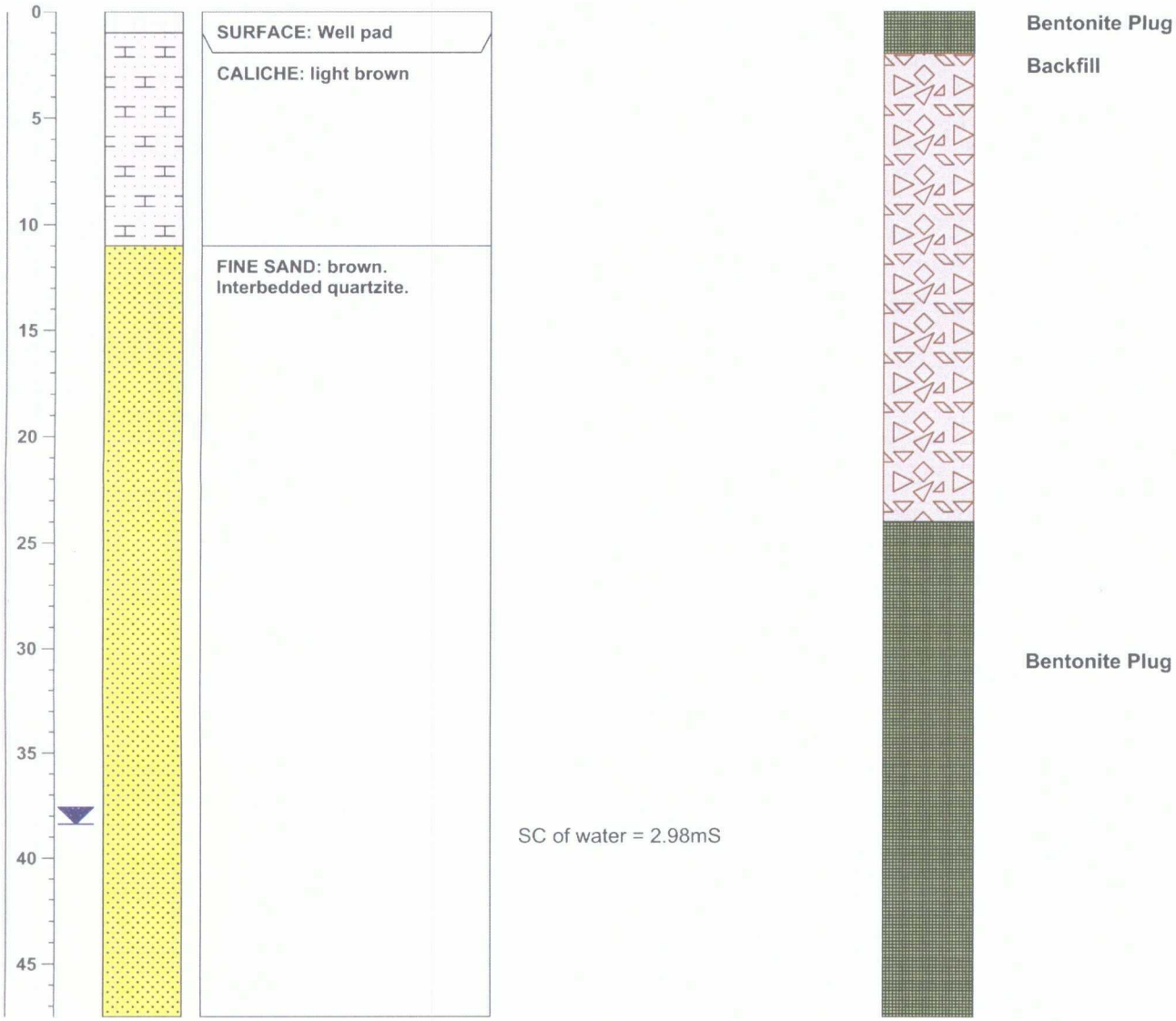

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Plate 4

Borehole/Well Log

Site Name:	State QE 13 #1	Coordinate System:	UTM Zone 13 (meters)
Address:	8.6 miles west on Hwy 380	X:	642844.739
City, State:	Tatum, NM	Y:	3682636.512
County:	Lea	Z:	
Driller:	Atkins Engineering	Datum:	NAD 83
Auger Type:	Hollow Stem	Borehole ID:	SB-03
Auger Dia.:	7.25	Well ID:	
Drill Date:	05/06/2008	Total Depth:	63

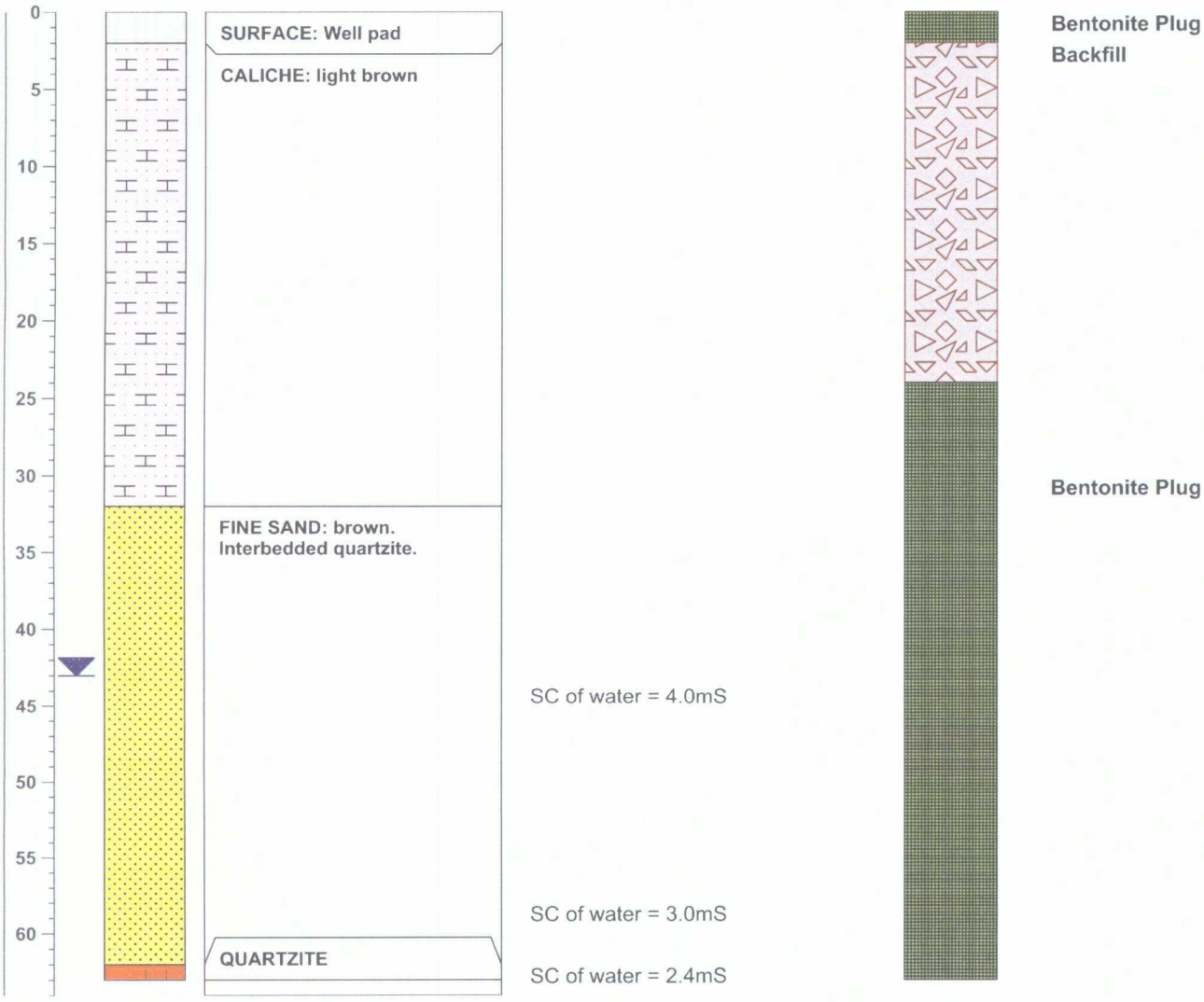

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Plate 5

Borehole/Well Log

Site Name:	State QE 13 #1	Coordinate System:	UTM Zone 13 (meters)
Address:	8.6 miles west on Hwy 380	X:	642851.09
City, State:	Tatum, NM	Y:	3682622.25
County:	Lea	Z:	
Driller:	Atkins Engineering	Datum:	NAD 83
Auger Type:	Hollow Stem	Borehole ID:	SB-04
Auger Dia.:	7.25	Well ID:	
Drill Date:	05/06/2008	Total Depth:	55

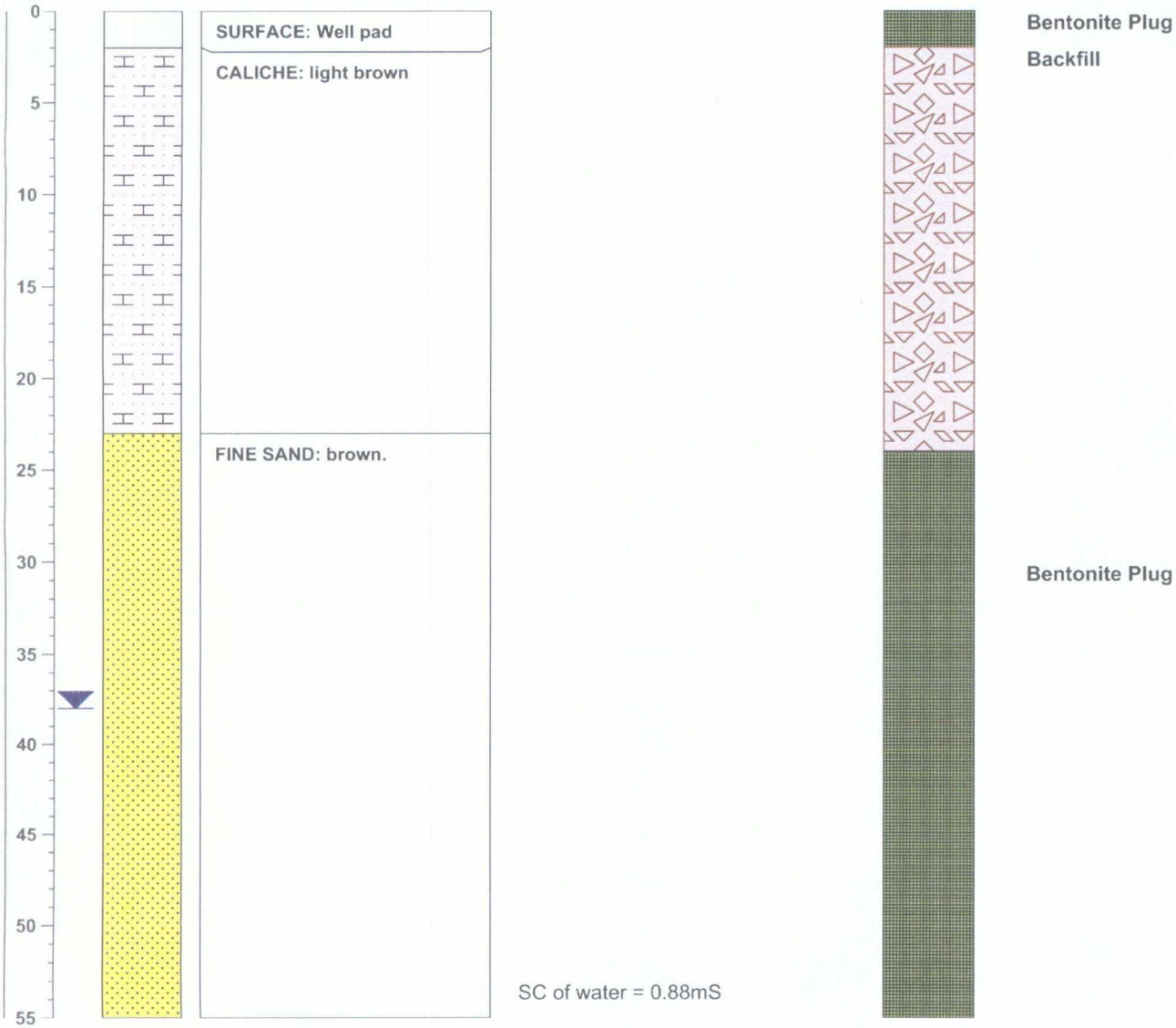

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Plate 6

Borehole/Well Log

Site Name:	State QE 13 #1	Coordinate System:	UTM Zone 13 (meters)
Address:	8.6 miles west on Hwy 380	X:	642847.12
City, State:	Tatum, NM	Y:	3682646.04
County:	Lea	Z:	
Driller:	Atkins Engineering	Datum:	NAD 83
Auger Type:	Hollow Stem	Borehole ID:	SB-05
Auger Dia.:	7.25	Well ID:	MW-01 Deep
Drill Date:	05/07/08	Total Depth:	63

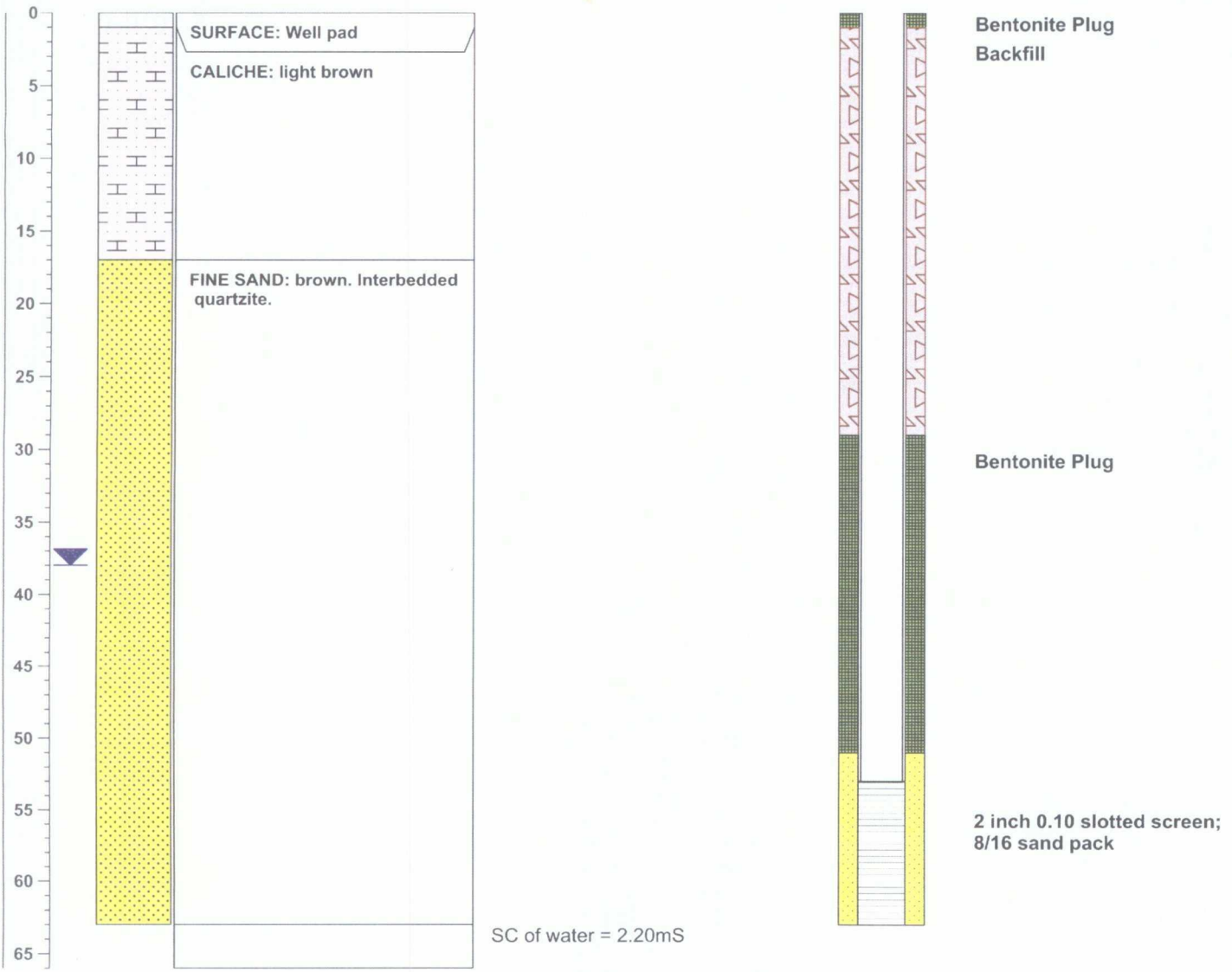

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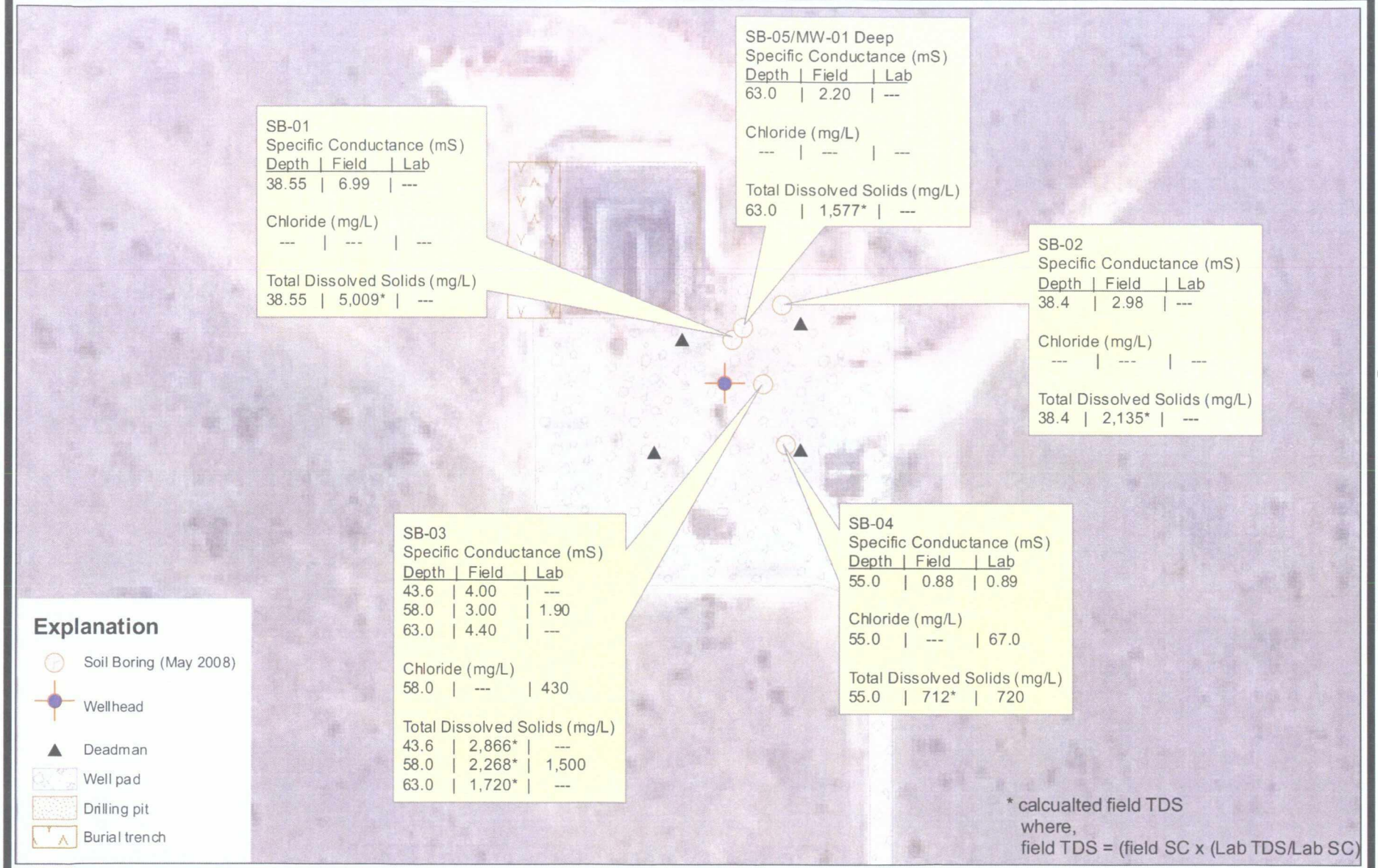
Plate 7



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Chemistry of Ground Water During Soil Boring Activities

Plate 8

Pride Energy: State QE 13 #1

October 2008

10/22/2008

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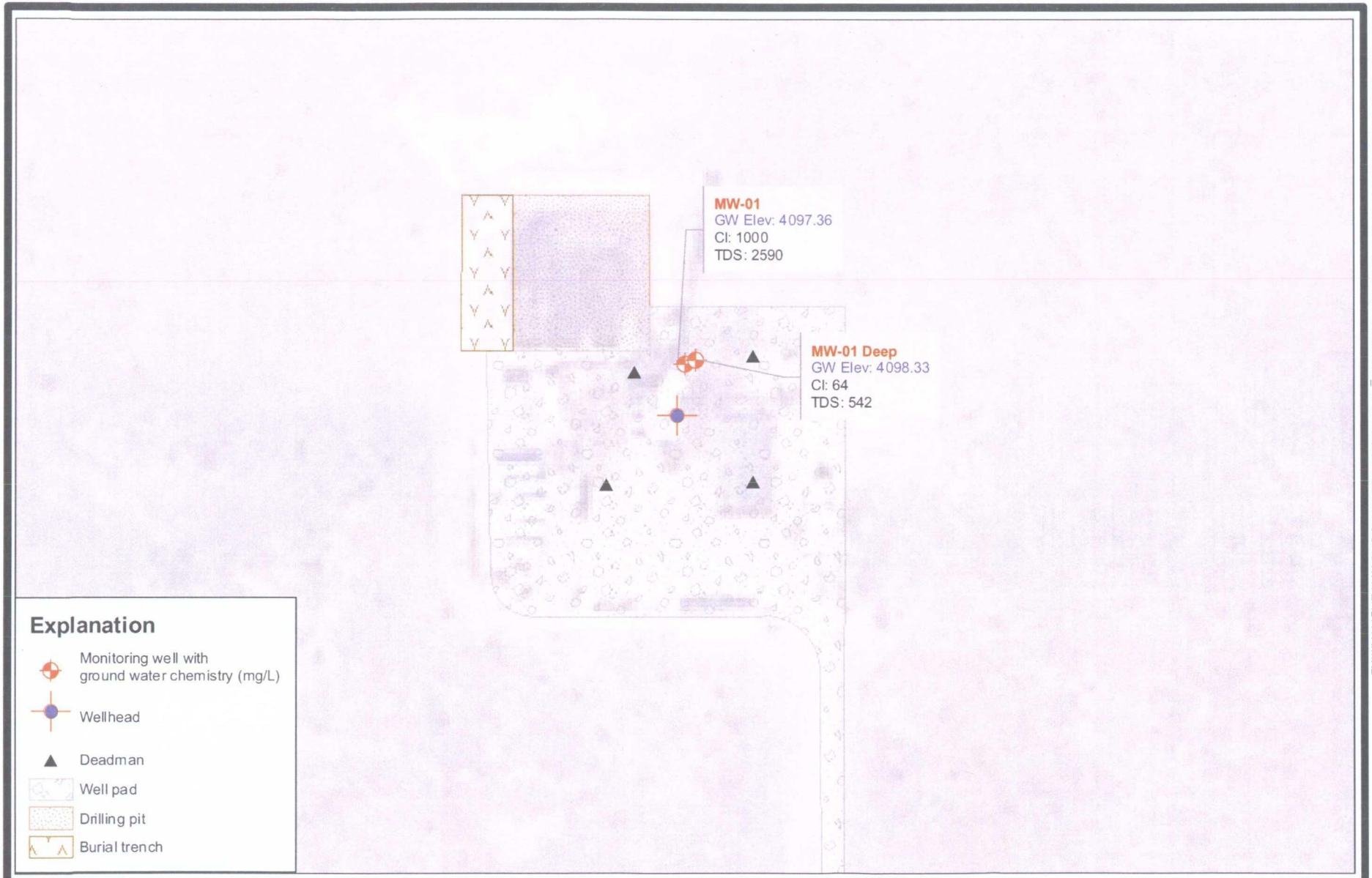

Note: Ground water elevations approximate; casing elevations not surveyed.

0 50 100 Feet

N W E S

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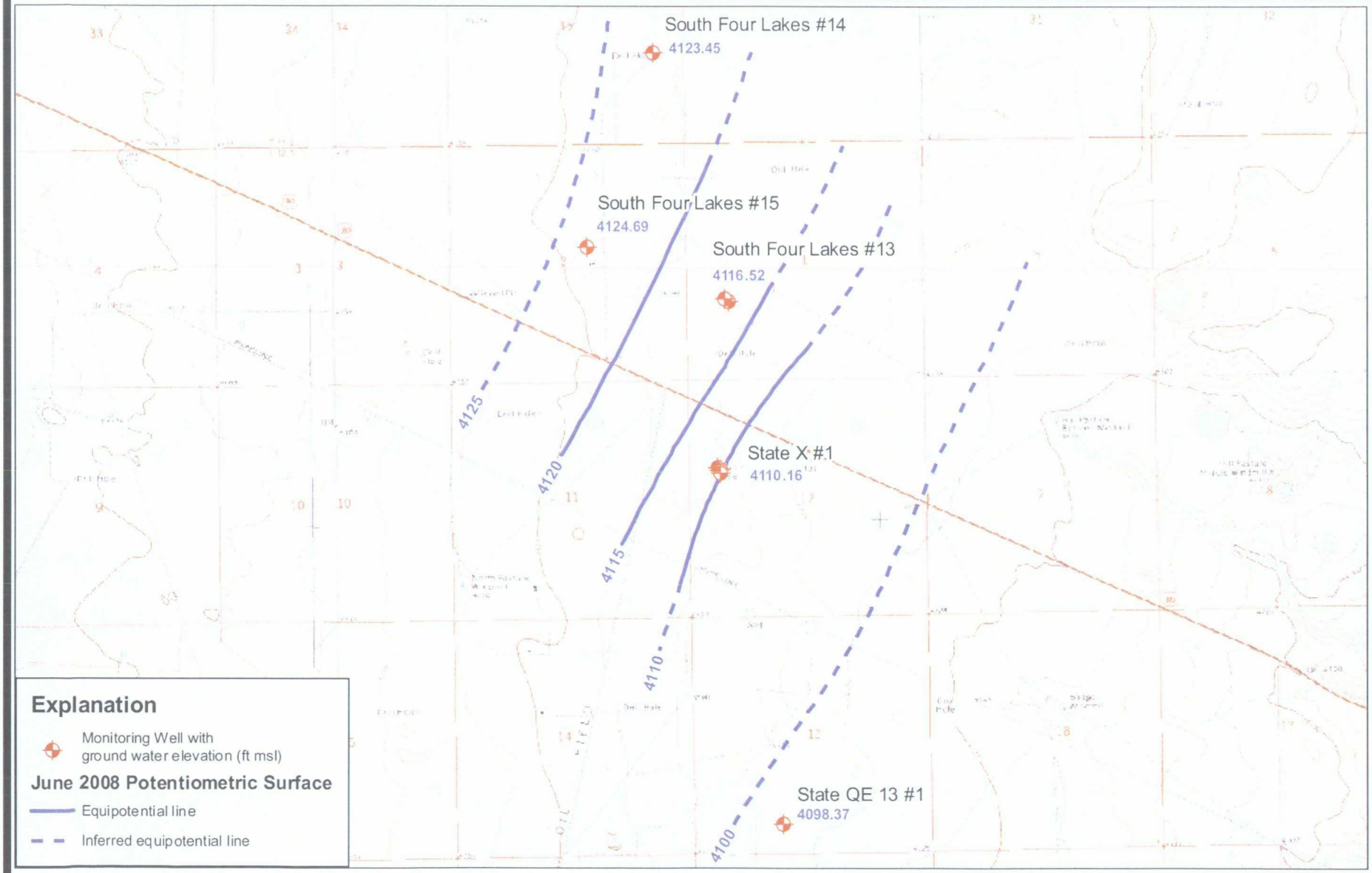
Ph: 505.266.5004

Chloride and TDS in Ground Water (Sept 09, 2008)	Plate 9
Pride Energy: State QE 13 #1	October 2008

10/22/2008

S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/STATEQE13_1/PLATES/STAGEII/GROUNDWATERDATA.MXD



R.T. Hicks Consultants, Ltd
901 Rio Grande Blvd NW Suite F-142
Albuquerque, NM 87104
Ph: 505.266.5004

Potentiometric Surface (June 2008)	Plate 10
Pride Energy: State QE 13 #1	August 2008

10/22/2008

S:/PROJECTS/PRIDEENERGY/ADDITIONSITES/STATEQE13_1/PLATES/STAGEII/POTENTIOMETRIC.MXD

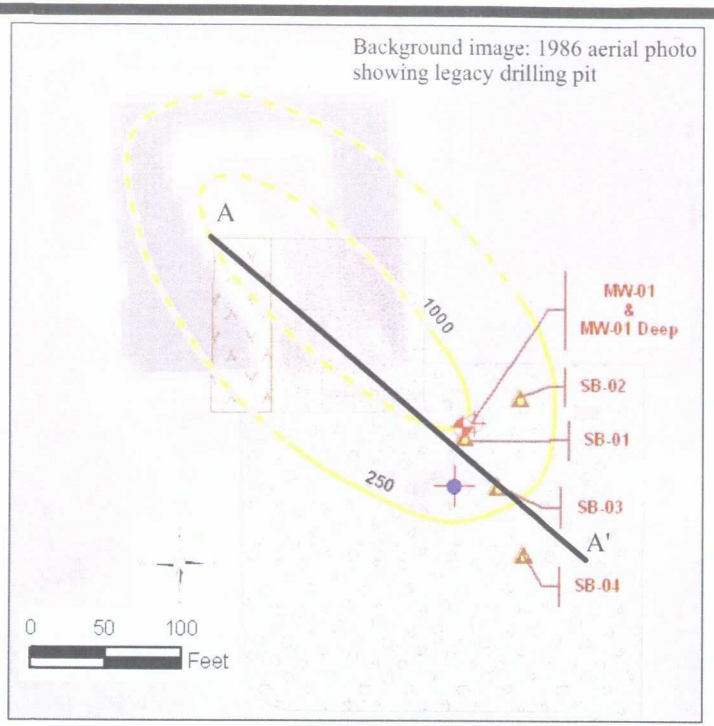
R.T. Hicks Consultants

Pride Energy: State QE 13 #1

November 2008

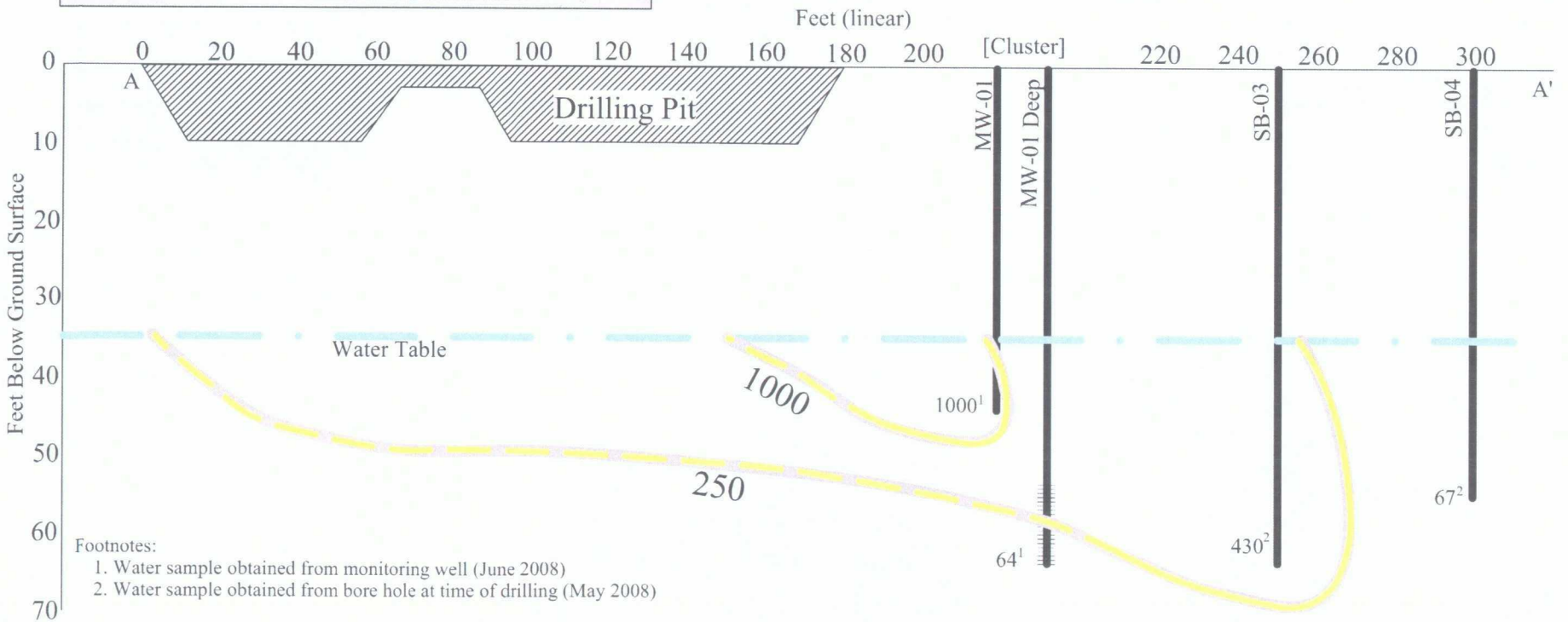
Plate 11

Chloride concentration (mg/L) in ground water



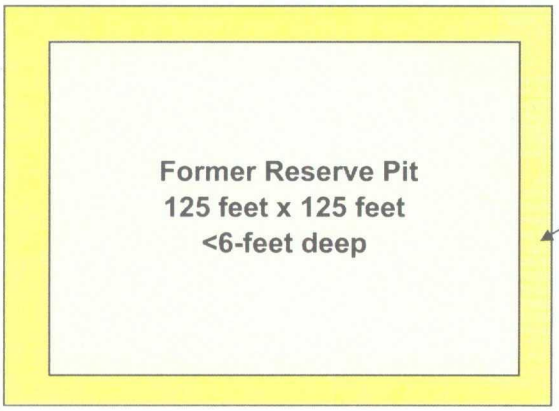
Explanation

- Monitoring well
- Soil boring/Monitoring Well (May 2008)
- Soil boring (May 2008)
- Wellhead
- Chloride concentration (mg/L)
- Chloride concentration (mg/L), inferred
- Well pad
- Drilling pit
- Burial trench



Footnotes:

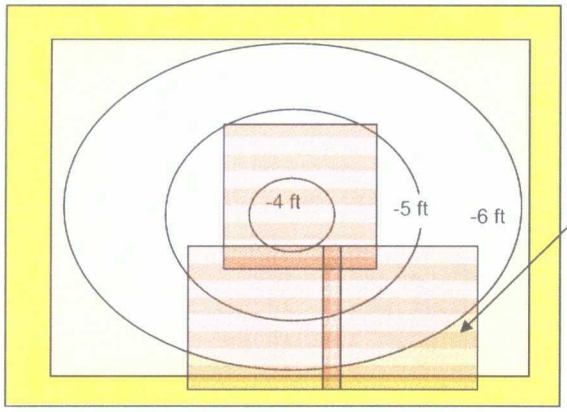
1. Water sample obtained from monitoring well (June 2008)
2. Water sample obtained from bore hole at time of drilling (May 2008)



Step 1

Excavate as required to create 3-foot clean zone around chloride impact

Reserve all topsoil and clean caliche

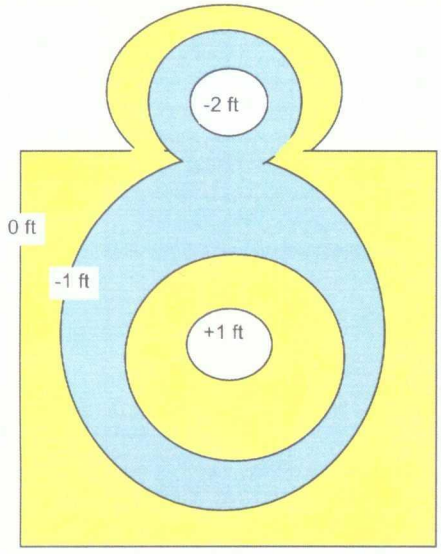


Step 2
Create sloping surface at bottom of excavation

Center of sloping surface should be 3 to 4 feet below grade

Place 20-mil liner "shingles" over prepared surface

Shingles drain to un-impacted caliche



Step 3
Excavate ponding area(s)

Backfill excavation with clean caliche and sand over liner - retain slope

Place about 6-inches of topsoil over clean caliche/sand - retain slope

Grade to allow excess runoff to ponding area

Re-seed with native species or a mix acceptable by the State Land Office

R.T. Hicks Consultants, Ltd 901 Rio Grande Blvd NW Suite F-142 Albuquerque, NM 87104	**Pride Energy**	**Plate 12**
	Reserve Pit Excavation Closure	**November 2008**

Appendix A
Laboratory Analytical

R.T. Hicks Consultants, Ltd.
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Analytical Report 299688

for

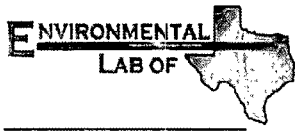
R.T. Hicks Consultants, LTD

Project Manager: Randy Hicks

Pride Energy Company

State QE 13 #1

20-MAR-08



12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

20-MAR-08

Project Manager: **Randy Hicks**
R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Reference: XENCO Report No: **299688**
Pride Energy Company
Project Address: T12S-R34E, Section 1, Unit Letter L

Randy Hicks:

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 299688. 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. 299688 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

Sample Cross Reference 299688

R.T. Hicks Consultants, LTD, Albuquerque, NM

Pride Energy Company

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Mar-13-08 12:35		299688-001

Certificate of Analysis Summary 299688
R.T. Hicks Consultants, LTD, Albuquerque, NM

Project Name: Pride Energy Company

Project Id: State QE 13 #1
Contact: Randy Hicks
Project Location: T12S-R34E, Section 1, Unit Letter L

Date Received in Lab: Mar-14-08 05:16 pm
Report Date: 20-MAR-08
Project Manager: Brent Barron, II

Analysis Requested			
	Lab Id:	299688-001	
	Field Id:	MW-1	
	Depth:		
	Matrix:	WATER	
	Sampled:	Mar-13-08 12:35	
Anions by EPA 300/300.1	***Extracted:***		
	Analyzed:	Mar-15-08 10:29	
	Units/RL:	mg/L	RL
Chloride		4340	50.0
Sulfate		566	50.0
BTEX by EPA 8021B	***Extracted:***	Mar-19-08 10:00	
	Analyzed:	Mar-19-08 17:26	
	Units/RL:	mg/L	RL
Benzene		ND	0.0010
Toluene		ND	0.0020
Ethylbenzene		ND	0.0010
m,p-Xylenes		ND	0.0020
o-Xylene		ND	0.0010
Xylenes, Total		ND	
Total BTEX		ND	
Metals per ICP by SW846 6010B	***Extracted:***		
	Analyzed:	Mar-17-08 16:36	
	Units/RL:	mg/L	RL
Calcium		506	0.100
Magnesium		120	0.010
Potassium		4.93	0.500
Sodium		1060	0.500
TDS by SM2540C	***Extracted:***		
	Analyzed:	Mar-17-08 16:00	
	Units/RL:	mg/L	RL
Total dissolved solids		6040	5.00
Total Alkalinity by EPA 310.1	***Extracted:***		
	Analyzed:	Mar-17-08 14:15	
	Units/RL:	mg/L	RL
Alkalinity, Total (as CaCO3)		450	4.00

Brent Barron
Odessa Laboratory Director

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 effect the recovery of the spike concentration. This condition could also effect 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 MQL(PQL) and above the SQL(MDL).

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.

* Outside XENCO'S scope of NELAC Accreditation

Form 2 - Surrogate Recoveries

Project Name: Pride Energy Company

Work Order #: 299688 **Project ID:** State QE 13 #1

Lab Batch #: 717610 **Sample:** 299447-003 S / MS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 717610 **Sample:** 299447-003 SD / MSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0309	0.0300	103	80-120	
4-Bromofluorobenzene	0.0322	0.0300	107	80-120	

Lab Batch #: 717610 **Sample:** 299688-001 / SMP **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0324	0.0300	108	80-120	

Lab Batch #: 717610 **Sample:** 506150-1-BKS / BKS **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0353	0.0300	118	80-120	

Lab Batch #: 717610 **Sample:** 506150-1-BLK / BLK **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: Pride Energy Company

Work Order #: 299688 **Project ID:** State QE 13 #1

Lab Batch #: 717610 **Sample:** 506150-1-BSD / BSD **Batch:** 1 **Matrix:** Water

Units: mg/L

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Blank Spike Recovery

Project Name: Pride Energy Company

Work Order #: 299688 **Project ID:** State QE 13 #1

Lab Batch #: 717368 **Sample:** 717368-1-BKS **Matrix:** Water

Date Analyzed: 03/17/2008 **Date Prepared:** 03/17/2008 **Analyst:** WRU

Reporting Units: mg/L **Batch #:** 1

Total Alkalinity by EPA 310.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
	BLANK /BLANK SPIKE RECOVERY STUDY					
Alkalinity, Total (as CaCO3)	ND	200	172	86	80-120	

Lab Batch #: 717419 **Sample:** 717419-1-BKS **Matrix:** Water

Date Analyzed: 03/15/2008 **Date Prepared:** 03/15/2008 **Analyst:** LATCOR

Reporting Units: mg/L **Batch #:** 1

Anions by EPA 300/300.1 Analytes	Blank Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
	BLANK /BLANK SPIKE RECOVERY STUDY					
Chloride	ND	10.0	9.45	95	85-115	
Sulfate	ND	10.0	8.71	87	90-110	L

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: Pride Energy Company

Work Order #: 299688
Analyst: SHE
Lab Batch ID: 717610
Sample: 506150-1-BKS
Units: mg/L

Date Prepared: 03/19/2008
Batch #: 1

Project ID: State QE 13 #1
Date Analyzed: 03/19/2008
Matrix: Water

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.0867	87	0.1	0.0848	85	2	70-125	25	
Toluene	ND	0.1000	0.0868	87	0.1	0.0848	85	2	70-125	25	
Ethylbenzene	ND	0.1000	0.0916	92	0.1	0.0885	89	3	71-129	25	
m,p-Xylenes	ND	0.2000	0.1841	92	0.2	0.1774	89	4	70-131	25	
o-Xylene	ND	0.1000	0.0998	100	0.1	0.0959	96	4	71-133	25	

Relative Percent Difference RPD = 200*|(D-F)/(D+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 #: 299688
Lab Batch #: 717419
Date Analyzed: 03/15/2008
QC- Sample ID: 299690-001 S
Reporting Units: mg/L

Date Prepared: 03/15/2008
Batch #: 1

Project ID: State QE 13 #1
Analyst: LATCOR
Matrix: Water

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	4150	1000	5250	110	85-115	
Sulfate	415	1000	1400	99	90-110	

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

Form 3 - MS / MSD Recoveries

Project Name: Pride Energy Company

Work Order # : 299688 **Project ID:** State QE 13 #1

Lab Batch ID: 717610 **QC- Sample ID:** 299447-003 S **Batch #:** 1 **Matrix:** Water

Date Analyzed: 03/19/2008 **Date Prepared:** 03/19/2008 **Analyst:** SHE

Reporting Units: mg/L

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1038	104	0.1000	0.1121	112	7	70-125	25	
Toluene	ND	0.1000	0.1030	103	0.1000	0.1122	112	8	70-125	25	
Ethylbenzene	ND	0.1000	0.1055	106	0.1000	0.1161	116	9	71-129	25	
m,p-Xylenes	ND	0.2000	0.2079	104	0.2000	0.2291	115	10	70-131	25	
o-Xylene	ND	0.1000	0.1095	110	0.1000	0.1212	121	10	71-133	25	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*(D-G)/(D+G)

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

Sample Duplicate Recovery

Project Name: Pride Energy Company

Work Order #: 299688

Lab Batch #: 717419 **Project ID:** State QE 13 #1
Date Analyzed: 03/15/2008 **Date Prepared:** 03/15/2008 **Analyst:** LATCOR
QC- Sample ID: 299690-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Anions by EPA 300/300.1	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	4150	4140	0	20	
Sulfate	415	406	2	20	

Lab Batch #: 717329
Date Analyzed: 03/17/2008 **Date Prepared:** 03/17/2008 **Analyst:** LATCOR
QC- Sample ID: 299654-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Metals per ICP by SW846 6010B	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Calcium	45.1	45.8	2	25	
Magnesium	22.6	21.8	4	25	
Potassium	8.64	8.45	2	25	
Sodium	172	172	0	25	

Lab Batch #: 717538
Date Analyzed: 03/17/2008 **Date Prepared:** 03/17/2008 **Analyst:** RBA
QC- Sample ID: 299683-002 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	978	972	1	30	

Lab Batch #: 717368
Date Analyzed: 03/17/2008 **Date Prepared:** 03/17/2008 **Analyst:** WRU
QC- Sample ID: 299680-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Total Alkalinity by EPA 310.1	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Total (as CaCO3)	228	236	3	20	
Alkalinity, Carbonate (as CaCO3)	ND	ND	NC	20	
Alkalinity, Bicarbonate (as CaCO3)	ND	ND	NC	20	

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

XENCO Laboratories / Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Randy Hicks
Company Name: R. T. Hicks Consultants, Ltd.
Company Address: 901 Rio Grande Blvd NW
City, State, Zip Code: Albuquerque NM 87104
Telephone No: 505-266-5004
Fax No: 505-266-0745
Sampler: Gil Van Deventer (Printed) (Signature)

Project Name: Pride Energy Company
Project #: State QE 13 #1
Project Location: T12S-R34E, Section 1, Unit Letter L
COC #: SQE13-1-0308

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	Preservative: HNO_3	Preservative: HCl BTEX only	Preservative: NaOH	Preservative: H_2SO_4	Preservative: None	Preservative: Other (Specify)	Matrix: Water	Matrix: Sludge	Matrix: Soil	Matrix: Other (specify):	Analyze For: TCLP: TPH: 418.1 8015M 1005 1006	Analyze For: TOTAL: Cations (Ca, Mg, Na, K, F)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEXN 8021B 5030 or BTEXN 8260	RCI	N.O.R.M.	Total Dissolved Solids (160.1)	SPLP 1312	Nitrate ($N-NO_3$)	Total Fe and Mn	RUSH TAT (Pre-Schedule)	Standard TAT
299688	MW-1	3-13-08	1235	3	X		X					X					X	X					X			X					X

Special Instructions:
Email results to: r@rthicksconsult.com and gilbertvandeventer@suddenlink.net

Sample Containers Intact? Y (N)
Temperature Upon Receipt: -1.5
Laboratory Comments:

Relinquished by:	Date	Time	Received by:	Date	Time
	3/14/08	4:15pm			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				3.14.08	4:15

w/ labels & seals on cooler

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: R.T. Hicks

Date/ Time: 3.14.08 4:15

Lab ID #: 299688

Initials: AL

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	Yes	No	-1.5 °C	
#2	Shipping container in good condition?	Yes	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	Not Present	
#4	Custody Seals intact on sample bottles/ container?	Yes	No	Not Present	
#5	Chain of Custody present?	Yes	No		
#6	Sample instructions complete of Chain of Custody?	Yes	No		
#7	Chain of Custody signed when relinquished/ received?	Yes	No		
#8	Chain of Custody agrees with sample label(s)?	Yes	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	Yes	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	Yes	No		
#11	Containers supplied by ELOT?	Yes	No		
#12	Samples in proper container/ bottle?	Yes	No	See Below	
#13	Samples properly preserved?	Yes	No	See Below	
#14	Sample bottles intact?	Yes	No		
#15	Preservations documented on Chain of Custody?	Yes	No		
#16	Containers documented on Chain of Custody?	Yes	No		
#17	Sufficient sample amount for indicated test(s)?	Yes	No	See Below	
#18	All samples received within sufficient hold time?	Yes	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	Not Applicable	
#20	VOC samples have zero headspace?	Yes	No	Not Applicable	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken: _____

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

HALL
ENVIRONMENTAL
ANALYSIS
LABORATORY

COVER LETTER

Wednesday, May 28, 2008

Andrew Parker
R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW
Suite F-142
Albuquerque, NM 87104

TEL: (505) 266-5004
FAX (505) 266-0745

RE: Pride Energy-State QE #1

Order No.: 0805246

Dear Andrew Parker:

Hall Environmental Analysis Laboratory, Inc. received 2 sample(s) on 5/16/2008 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent.

Reporting limits are determined by EPA methodology. No determination of compounds below these (denoted by the ND or < sign) has been made.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman, Business Manager
Nancy McDuffie, Laboratory Manager

NM Lab # NM9425
AZ license # AZ0682
ORELAP Lab # NM100001

Hall Environmental Analysis Laboratory, Inc. **Date:** *28-May-08*

CLIENT: R.T. Hicks Consultants, LTD
Project: Pride Energy-State QE #1
Lab Order: 0805246

CASE NARRATIVE

Prep Comments for TDS_PREP, Sample 0805246-01A: The prep HoldTime was exceeded by 5.80 days. Prep Comments for TDS_PREP, Sample 0805246-02A: The prep HoldTime was exceeded by 4.95 days.

Hall Environmental Analysis Laboratory, Inc.

Date: *28-May-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	SB-03@58 fbgs
Lab Order:	0805246	**Collection Date:**	5/6/2008 3:30:00 PM
Project:	Pride Energy-State QE #1	**Date Received:**	5/16/2008
Lab ID:	0805246-01	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **SLB**
Chloride	430	2.0		mg/L	20	5/22/2008 1:17:26 AM
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: **TAF**
Specific Conductance	1900	0.010		µmhos/cm	1	5/20/2008
SM 2540C TOTAL DISSOLVED SOLIDS						Analyst: **KMS**
Total Dissolved Solids	1500	400	H	mg/L	1	5/19/2008

Qualifiers:

*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
ND	Not Detected at the Reporting Limit	RL	Reporting Limit
S	Spike recovery outside accepted recovery limits		

Hall Environmental Analysis Laboratory, Inc.

Date: *28-May-08*

CLIENT:	R.T. Hicks Consultants, LTD	**Client Sample ID:**	SB-04@55 fbgs
Lab Order:	0805246	**Collection Date:**	5/7/2008 12:00:00 PM
Project:	Pride Energy-State QE #1	**Date Received:**	5/16/2008
Lab ID:	0805246-02	**Matrix:**	AQUEOUS

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed
EPA METHOD 300.0: ANIONS						Analyst: **SLB**
Chloride	67	1.0		mg/L	10	5/20/2008 3:57:21 PM
EPA 120.1: SPECIFIC CONDUCTANCE						Analyst: **TAF**
Specific Conductance	890	0.010		µmhos/cm	1	5/20/2008
SM 2540C TOTAL DISSOLVED SOLIDS						Analyst: **KMS**
Total Dissolved Solids	720	200	H	mg/L	1	5/19/2008

Qualifiers:					
	*	Value exceeds Maximum Contaminant Level	B	Analyte detected in the associated Method Blank
	E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
	J	Analyte detected below quantitation limits	MCL	Maximum Contaminant Level
	ND	Not Detected at the Reporting Limit	RL	Reporting Limit
	S	Spike recovery outside accepted recovery limits		

QA/QC SUMMARY REPORT

Client: R.T. Hicks Consultants, LTD
Project: Pride Energy-State QE #1 **Work Order:** 0805246

Analyte	Result	Units	PQL	%Rec	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Method: EPA Method 300.0: Anions									
Sample ID: MB		*MBLK*			Batch ID: **R28613**		Analysis Date:	5/20/2008 11:36:14 AM	
Chloride	ND	mg/L	0.10						
Sample ID: MB		*MBLK*			Batch ID: **R28630**		Analysis Date:	5/21/2008 9:54:46 AM	
Chloride	ND	mg/L	0.10						
Sample ID: LCS		*LCS*			Batch ID: **R28613**		Analysis Date:	5/20/2008 11:53:38 AM	
Chloride	4.853	mg/L	0.10	97.1	90	110			
Sample ID: LCS		*LCS*			Batch ID: **R28630**		Analysis Date:	5/21/2008 10:12:10 AM	
Chloride	4.777	mg/L	0.10	95.5	90	110			
Method: SM 2540C Total Dissolved Solids									
Sample ID: MB-15979		*MBLK*			Batch ID: **15979**		Analysis Date:	5/19/2008	
Total Dissolved Solids	ND	mg/L	20						
Sample ID: LCS-15979		*LCS*			Batch ID: **15979**		Analysis Date:	5/19/2008	
Total Dissolved Solids	1012	mg/L	20	99.7	80	120			

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded
J	Analyte detected below quantitation limits	ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits	S	Spike recovery outside accepted recovery limits

Hall Environmental Analysis Laboratory, Inc.

Sample Receipt Checklist

Client Name RT HICKS | Date Received: 5/16/2008

Work Order Number 0805246 | Received by: AMF

Checklist completed by: _____ (Signature) 5/16/08 (Date) | Sample ID labels checked by: AS (Initials)

Matrix: | Carrier name Client drop-off

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐	
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☐	Not Shipped ☑
Custody seals intact on sample bottles?	Yes ☐	No ☐	N/A ☑	
Chain of custody present?	Yes ☑	No ☐		
Chain of custody signed when relinquished and received?	Yes ☑	No ☐		
Chain of custody agrees with sample labels?	Yes ☑	No ☐		
Samples in proper container/bottle?	Yes ☑	No ☐		
Sample containers intact?	Yes ☑	No ☐		
Sufficient sample volume for indicated test?	Yes ☑	No ☐		
All samples received within holding time?	Yes ☑	No ☐		
Water - VOA vials have zero headspace? No VOA vials submitted ☑		Yes ☐	No ☐	
Water - Preservation labels on bottle and cap match?	Yes ☐	No ☐	N/A ☑	
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑	
Container/Temp Blank temperature?	16°	*<6° C Acceptable* If given sufficient time to cool.		

COMMENTS:

Client contacted _____ Date contacted: _____ Person contacted _____

Contacted by: _____ Regarding: _____

Comments: _____

Corrective Action _____

CHAIN-OF-CUSTODY RECORD

QA / QC Package:
Std ☐ Level 4 ☐
Other:

Client: RT HICKS CONSULTANTS

Project Name: PRIDE ENERGY - STATE QE #1

Address: ON FILE

Project #:

Project Manager: ANDREW PARKER

Phone #: 505-266-5004

Sampler: A. PARKER

Fax #:

Sample Temperature: 16°

Date	Time	Matrix	Sample I.D. No.	Number/Volume	Preservative $HgCl_2$	Preservative HNO_3	Preservative	HEAL No.
5/6	15:30	Aq	SB-03 @ 58 fbgs	625 mL				1
5/7	12:00	Aq	SB-04 @ 55 fbgs	625 mL				2

HEAL No. 0805246

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE, Suite D
Albuquerque, New Mexico 87109
Tel. 505.345.3975 Fax 505.345.4107
www.hallenvironmental.com

ANALYSIS REQUEST

BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gasoline Only)	TPH Method 8015B (Gas/Diesel)	TPH (Method 418.1)	EDB (Method 504.1)	EDC (Method 8021)	8310 (PNA or PAH)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / PCB's (8082)	8260B (VOA)	8270 (Semi-VOA)	TDS	SPECIFIC CONDUCTANCE	CHLORIDE		Air Bubbles or Headspace (Y or N)
												X	X	X		
												X	X	X		

Date	Time	Relinquished By: (Signature)	Received By: (Signature)	
5/16/08	11:35	Andrew Parker		5/16/08 11:35
Date:	Time:	Relinquished By: (Signature)	Received By: (Signature)	

Remarks:

Analytical Report 306330

for

R.T. Hicks Consultants, LTD

Project Manager: Andrew Parker

Pride Energy Company

State QE 13 # 1

27-JUN-08

12600 West I-20 East Odessa, Texas 79765

Texas certification numbers:
Houston, TX T104704215

Florida certification numbers:
Houston, TX E871002 - Miami, FL E86678 - Tampa, FL E86675
Norcross(Atlanta), GA E87429

South Carolina certification numbers:
Norcross(Atlanta), GA 98015

North Carolina certification numbers:
Norcross(Atlanta), GA 483

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Latin America
Midland - Corpus Christi - Atlanta

27-JUN-08

Project Manager: **Andrew Parker**
R.T. Hicks Consultants, LTD
901 Rio Grande Blvd. NW, Suite F-142
Albuquerque, NM 87104

Reference: XENCO Report No: **306330**
Pride Energy Company
Project Address: T12S-R34E, Section 13, Unit Letter O

Andrew Parker:

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 306330. 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. 306330 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

Sample Cross Reference 306330

R.T. Hicks Consultants, LTD, Albuquerque, NM

Pride Energy Company

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
MW-1	W	Jun-19-08 07:20		306330-001
MW-1 Deep	W	Jun-19-08 08:05		306330-002

ENVIRONMENTAL LAB OF

Certificate of Analysis Summary 306330

R.T. Hicks Consultants, LTD, Albuquerque, NM

Project Name: Pride Energy Company

Project Id: State QE 13 # 1 **Date Received in Lab:** Jun-20-08 05:00 pm

Contact: Andrew Parker **Report Date:** 27-JUN-08

Project Location: T12S-R34E, Section 13, Unit Letter O **Project Manager:** Brent Barron, II

Analysis Requested					
	Lab Id:	306330-001		306330-002	
	Field Id:	MW-1		MW-1 Deep	
	Depth:				
	Matrix:	WATER		WATER	
	Sampled:	Jun-19-08 07:20		Jun-19-08 08:05	
Alkalinity by SM2320B	***Extracted:***				
	Analyzed:	Jun-26-08 10:45		Jun-26-08 10:45	
	Units/RL:	mg/L	RL	mg/L	RL
Alkalinity, Total (as CaCO3)		236	4.00	180	4.00
Alkalinity, Bicarbonate (as CaCO3)		236	4.00	180	4.00
Alkalinity, Carbonate (as CaCO3)		ND	4.00	ND	4.00
Inorganic Anions by EPA 300	***Extracted:***				
	Analyzed:	Jun-23-08 08:50		Jun-23-08 08:50	
	Units/RL:	mg/L	RL	mg/L	RL
Chloride		1760	100	66.7	12.5
Sulfate		348	100	132	12.5
Metals per ICP by SW846 6010B	***Extracted:***				
	Analyzed:	Jun-23-08 11:59		Jun-23-08 11:59	
	Units/RL:	mg/L	RL	mg/L	RL
Calcium		288	0.100	65.8	0.100
Magnesium		70.4	0.010	15.6	0.010
Potassium		2.88	0.500	2.76	0.500
Sodium		751	0.500	63.4	0.500
TDS by SM2540C	***Extracted:***				
	Analyzed:	Jun-23-08 16:30		Jun-23-08 16:30	
	Units/RL:	mg/L	RL	mg/L	RL
Total dissolved solids		3310	5.00	464	5.00

Brent Barron
Odessa Laboratory Director

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 effect the recovery of the spike concentration. This condition could also effect 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 MQL(PQL) and above the SQL(MDL).

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.

* Outside XENCO'S scope of NELAC Accreditation

Blank Spike Recovery

Project Name: Pride Energy Company

Work Order #: 306330 **Project ID:** State QE 13 # 1

Lab Batch #: 726566 **Sample:** 726566-1-BKS **Matrix:** Water
Date Analyzed: 06/26/2008 **Date Prepared:** 06/26/2008 **Analyst:** WRU
Reporting Units: mg/L **Batch #:** 1

Alkalinity by SM2320B Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Alkalinity, Bicarbonate (as CaCO3)	ND	200	176	88	80-120	

Lab Batch #: 726337 **Sample:** 726337-1-BKS **Matrix:** Water
Date Analyzed: 06/23/2008 **Date Prepared:** 06/23/2008 **Analyst:** LATCOR
Reporting Units: mg/L **Batch #:** 1

Inorganic Anions by EPA 300 Analytes	Blank Result [A]	BLANK /BLANK SPIKE RECOVERY STUDY Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Control Limits %R	Flags
Chloride	ND	10.0	11.6	116	80-120	
Sulfate	ND	10.0	12.0	120	80-120	

Blank Spike Recovery [D] = 100*[C]/[B]
All results are based on MDL and validated for QC purposes.

Form 3 - MS Recoveries

Project Name: Pride Energy Company

Work Order #: 306330
Lab Batch #: 726337
Date Analyzed: 06/23/2008
QC- Sample ID: 306329-001 S
Reporting Units: mg/L

Date Prepared: 06/23/2008
Batch #: 1

Project ID: State QE 13 # 1
Analyst: LATCOR
Matrix: Water

Inorganic Anions by EPA 300	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	2600	500	3270	134	80-120	X
Sulfate	477	500	1080	121	80-120	X

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

Sample Duplicate Recovery

Project Name: Pride Energy Company

Work Order #: 306330

Lab Batch #: 726566 **Project ID:** State QE 13 # 1
Date Analyzed: 06/26/2008 **Date Prepared:** 06/26/2008 **Analyst:** WRU
QC- Sample ID: 306329-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Alkalinity by SM2320B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Alkalinity, Bicarbonate (as CaCO3)	190	180	20	20	
Alkalinity, Carbonate (as CaCO3)	ND	ND	20	20	
Alkalinity, Total (as CaCO3)	190	180	20	20	

Lab Batch #: 726337
Date Analyzed: 06/23/2008 **Date Prepared:** 06/23/2008 **Analyst:** LATCOR
QC- Sample ID: 306329-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Inorganic Anions by EPA 300 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	2600	2590	20	20	
Sulfate	477	463	20	20	

Lab Batch #: 726094
Date Analyzed: 06/23/2008 **Date Prepared:** 06/23/2008 **Analyst:** LATCOR
QC- Sample ID: 306329-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

Metals per ICP by SW846 6010B Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Calcium	ND	603	NC	25	
Magnesium	120	116	3	25	
Potassium	4.41	4.85	10	25	
Sodium	564	575	2	25	
Fluoride	ND	ND	NC	20	

Lab Batch #: 726342
Date Analyzed: 06/23/2008 **Date Prepared:** 06/23/2008 **Analyst:** WRU
QC- Sample ID: 306329-001 D **Batch #:** 1 **Matrix:** Water
Reporting Units: mg/L

TDS by SM2540C Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Total dissolved solids	5700	5580	2	30	

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

XENCO Laboratories / Environmental Lab of Texas

12600 West I-20 East
Odessa, Texas 79765
Phone: 432-563-1800
Fax: 432-563-1713

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Company Name:	R. T. Hicks Consultants	Company Name:	R. T. Hicks Consultants	Project Name:	Pride Energy Company
Direct Invoice To:	Andrew Parker	Project Manager:	Andrew Parker	Project #:	State QE 13 #1
Billing Address:	901 Rio Grande Blvd NW Suite F-142	Address:	901 Rio Grande Blvd NW Suite F-142	Project Location:	T12S-R34E, Section 13, Unit Letter O
City, State, Zip Code:	Albuquerque, NM 87104	City, State, Zip Code:	Albuquerque, NM 87104	COC #:	
Telephone No:	505-366-5004	Telephone No:	505-366-5004		
Fax No:		Fax No:			
Email Report to:	andrew@rthicksconsult.com	Email Report to:	andrew@rthicksconsult.com		

Sampler: Rozanne Johnson (575) 631-9310 rozanne@valornet.com
Printed Signature

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative: Ice	HNO_3	HCl BTEX only	NaOH	H_2SO_4	None	Other (Specify)	Matrix: Water	Sludge	Soil	Other (specify)	Analyze For: TCLP: TPH 418.1 8015M 1005 1006	TOTAL: Cations (Ca, Mg, Na, K, F)	Anions (Cl, SO4, CO3, HCO3)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B	RCI	N.O.R.M.	Total Dissolved Solids (SM2540C	SPLP 1312	Chloride	Total Fe and Mn	RUSH TAT (Pre-Scheduled)	Standard TAT
306330																															
-01	MW-1	06/19/08	7:20	1	X							X					X	X								X					X
-02	MW-1 Deep	06/19/08	8:05	1	X							X					X	X								X					X

Special Instructions:
Email results to: andrew@rthicksconsult.com and rozanne@valornet.com

Sample Containers Intact? Y N
Temperature Upon Receipt:
Laboratory Comments:
1 Lpoly

Relinquished by:	Date	Time	Received by:	Date	Time
Rozanne Johnson	6/20/08	17.00			
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
			Andrea Lam	6-20-08	17.00

S.O. w/labels & seals

Environmental Lab of Texas

Variance/ Corrective Action Report- Sample Log-In

Client: R.T. Hicks

Date/ Time: 6.20.08 17.00

Lab ID # : 306330

Initials: al

Sample Receipt Checklist

					Client Initials
#1	Temperature of container/ cooler?	(Yes)	No	5.0 °C	
#2	Shipping container in good condition?	(Yes)	No		
#3	Custody Seals intact on shipping container/ cooler?	Yes	No	(Not Present)	
#4	Custody Seals intact on sample bottles/ container?	(Yes)	No	Not Present	
#5	Chain of Custody present?	(Yes)	No		
#6	Sample instructions complete of Chain of Custody?	(Yes)	No		
#7	Chain of Custody signed when relinquished/ received?	(Yes)	No		
#8	Chain of Custody agrees with sample label(s)?	(Yes)	No	ID written on Cont./ Lid	
#9	Container label(s) legible and intact?	(Yes)	No	Not Applicable	
#10	Sample matrix/ properties agree with Chain of Custody?	(Yes)	No		
#11	Containers supplied by ELOT?	(Yes)	No		
#12	Samples in proper container/ bottle?	(Yes)	No	See Below	
#13	Samples properly preserved?	(Yes)	No	See Below	
#14	Sample bottles intact?	(Yes)	No		
#15	Preservations documented on Chain of Custody?	(Yes)	No		
#16	Containers documented on Chain of Custody?	(Yes)	No		
#17	Sufficient sample amount for indicated test(s)?	(Yes)	No	See Below	
#18	All samples received within sufficient hold time?	(Yes)	No	See Below	
#19	Subcontract of sample(s)?	Yes	No	(Not Applicable)	
#20	VOC samples have zero headspace?	Yes	No	(Not Applicable)	

Variance Documentation

Contact: _____ Contacted by: _____ Date/ Time: _____

Regarding: _____

Corrective Action Taken:

Check all that Apply:

- ☐ See attached e-mail/ fax
- ☐ Client understands and would like to proceed with analysis
- ☐ Cooling process had begun shortly after sampling event

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RT HICKS CONSULTANTS
ATTN: ANDREW PARKER
901 RIO GRANDE BLVD. NW. SUITE F-142
ALBUQUERQUE, NM 87104

Receiving Date: 09/11/08
Reporting Date: 09/17/08
Project Number: STATE QE 13 #1
Project Name: PRIDE ENERGY COMPANY
Project Location: T12S-R34E-SEC13 UNIT LETTER O ~ LEA CO., NM
Lab Number: H15916-1
Sample ID: MW-1-D

Analysis Date: 09/13/08
Sampling Date: 09/09/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

VOLATILES (mg/L)	Sample Result H15916-1	Method Blank	QC	%Recov.	True Value QC
Benzene	<0.001	<0.001	0.052	104	0.050
Toluene	<0.001	<0.001	0.048	96.0	0.050
Ethylbenzene	<0.001	<0.001	0.050	100	0.050
m,p-Xylene	<0.002	<0.002	0.098	98.4	0.100
o-Xylene	<0.001	<0.001	0.052	103	0.050

	% RECOVERY
Dibromofluoromethane	102
Toluene-d8	111
Bromofluorobenzene	109

METHODS: EPA SW-846 8260

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE, AND TOTAL XYLENES

Chemist

09/17/08
Date

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RT HICKS CONSULTANTS
ATTN: ANDREW PARKER
901 RIO GRANDE BLVD. NW, SUITE F-142
ALBUQUERQUE, NM 87104

Receiving Date: 09/11/08
Reporting Date: 09/17/08
Project Number: STATE QE 13 #1
Project Name: PRIDE ENERGY COMPANY
Project Location: T12S-R34E-SEC13 UNIT LETTER O ~ LEA CO., NM
Lab Number: H15916-1
Sample ID: MW-1-D

Analysis Date: 09/13/08
Sampling Date: 09/09/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

VOLATILES (mg/kg)	Sample Result H15916-1	Method Blank	QC	%Recov.	True Value QC
Naphthalene	<0.001	<0.001	0.055	109	0.050

	% RECOVERY
Dibromofluoromethane	102
Toluene-d8	111
Bromofluorobenzene	109

METHODS: EPA SW-846 8260

Chemist

09/17/08
Date

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RT HICKS CONSULTANTS
ATTN: ANDREW PARKER
901 RIO GRANDE BLVD. NW, SUITE F-142
ALBUQUERQUE, NM 87104

Receiving Date: 09/11/08
Reporting Date: 09/17/08
Project Number: STATE QE 13 #1
Project Name: PRIDE ENERGY COMPANY
Project Location: T12S-R34E-SEC13 UNIT LETTER O ~ LEA CO., NM
Lab Number: H15916-2
Sample ID: MW-1-S

Analysis Date: 09/13/08
Sampling Date: 09/09/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

VOLATILES (mg/L)	Sample Result H15916-2	Method Blank	QC	%Recov.	True Value QC
Benzene	<0.001	<0.001	0.052	104	0.050
Toluene	<0.001	<0.001	0.048	96.0	0.050
Ethylbenzene	<0.001	<0.001	0.050	100	0.050
m,p-Xylene	<0.002	<0.002	0.098	98.4	0.100
o-Xylene	<0.001	<0.001	0.052	103	0.050

	% RECOVERY
Dibromofluoromethane	103
Toluene-d8	106
Bromofluorobenzene	103

METHODS: EPA SW-846 8260

TEXAS NELAP CERTIFICATION T104704398-08-TX FOR BENZENE, TOLUENE, ETHYL BENZENE, AND TOTAL XYLENES.

Chemist

09/17/08
Date

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RT HICKS CONSULTANTS
ATTN: ANDREW PARKER
901 RIO GRANDE BLVD. NW, SUITE F-142
ALBUQUERQUE, NM 87104

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Project Location: T12S-R34E-SEC13 UNIT LETTER O ~ LEA CO., NM
Lab Number: H15916-2
Sample ID: MW-1-S

Analysis Date: 09/13/08
Sampling Date: 09/09/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: ZL

VOLATILES (mg/kg)	Sample Result H15916-2	Method Blank	QC	%Recov.	True Value QC
Naphthalene	<0.001	<0.001	0.055	109	0.050

	% RECOVERY
Dibromofluoromethane	103
Toluene-d8	106
Bromofluorobenzene	103

METHODS: EPA SW-846 8260

Chemist

9/17/08
Date

CARDINAL LABORATORIES

PHONE (575) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
RT HICKS CONSULTANTS
ATTN: ANDREW PARKER
901 RIO GRANDE BLVD. NW, SUITE F-142
ALBUQUERQUE, NM 87104

Receiving Date: 09/11/08
Reporting Date: 09/16/08
Project Number: STATE QE 13 #1
Project Name: PRIDE ENERGY COMPANY
Project Location: T12S-R34E-SEC13 UNIT LETTER O ~ LEA COUNTY - NEW MEXICO

Sampling Date: 09/09/08
Sample Type: WATER
Sample Condition: COOL & INTACT
Sample Received By: ML
Analyzed By: HM

LAB NO.	SAMPLE ID	TDS (mg/L)	Cl (mg/L)
Analysis Date:		09/12/08	09/12/08
H15916-1	MW-1-d	542	64
H15916-2	MW-1-s	2,590	1,000
Quality Control		NR	490
True Value QC		NR	500
% Recovery		NR	98.0
Relative Percent Difference		NR	< 0.1

METHOD: EPA 600/4-79-020	160.1	SM4500-Cl-B

Chemist

09-16-08
Date

H15916 RT Hicks Consultants

101 East Marland - Hobbs, New Mexico 88240
Tel (575) 393-2326
Fax (575) 393-2476

Cardinal Laboratories, Inc.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

LAB Order ID # _____

Company Name: RT Hicks Consultants	BILL TO Company: Pride Energy Company / Matt Pride — PO#
Project Manager: Andrew Parker	Address: (Street, City, Zip) P. O. Box 710950 ~ Tulsa, OK 74170-1950
Address: (Street, City, Zip) 901 Rio Grande Blvd NW Suite F-142 ~ Albuq, NM 87104	Phone#: (918) 524-9200 Fax#: (918) 524-9292
Phone #: (505) 266-5004 Fax #:	
Project #: State QE 13 #1	Project Name: Pride Energy Company
Project Location: T12S-R34E-Sec13 Unit Letter O ~ Lea County - New Mexico	Sampler Signature: Rozanne Johnson (575)631-9310 rozanne@valornet.com

LAB # (LAB USE ONLY)	FIELD CODE	(G)rab or (C)omp	# CONTAINERS	MATRIX: WATER	SOIL	AIR	SLUDGE	PRESERVATIVE METHOD: HCL (2 40ml VOA)	HNO_3	$NaHSO_4$	H_2SO_4	ICE (1-1Liter HDPE)	NONE	SAMPLING: DATE (2008)	TIME
H15911 6-1	MW-1-d	G	3	X				2				1		9-9	9:35
-2	MW-1-s	G	3	X				2				1		9-9	10:05

ANALYSIS REQUEST

(Circle or Specify Method No.)

MTBE 8021B/602	BTEX 8260	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	PCB's 8082/608	Pesticides 8081A/608	BOD, TSS, pH	Moisture Content		Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, CO3, HCO3)	Total Dissolved Solids (160.1 / SM2540C)	Chlorides (325.3 / SM4500 B)	Turn Around Time ~ 24 Hours
	X																		X	X	
	X																		X	X	

Relinquished by: Rozanne Johnson	Date: 9-11-2008	Time: 3:40	Received by: Misty LeBut
Relinquished by:	Date:	Time:	Received By: (Laboratory Staff)

Date: 9/11/08 Time: 3:40

Date: Time:

Phone Results		Yes		No	
Fax Results		Yes		No	Additional Fax Number:

REMARKS:

Email Results to:

andrew@rthicksconsult.com
mattp@pride-energy.com
rozanne@valornet.com

Delivered By: (Circle One)

Sampler - UPS - Bus - Other:

Sample Condition: Cool: Yes ☑ No ☐ — Intact: Yes ☑ No ☐

CHECKED BY: (Initials) MCLB