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District I
1625 N. French Dr., Hobbs, NM 88240
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1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

1RP-10-07-2575

State of New Mexico
Energy Minerals and Natural Resources

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: Samson Resources Company	Contact: Autumn Long, Environmental Specialist
Address: Two West Second Street, Tulsa, OK 74103-3103	Telephone No.: (918) 591-1364
Facility Name: State BD Well #3	Facility Type: Injection (SWD) Well and Tank Battery

Surface Owner: State of New Mexico	Mineral Owner	Lease No.

API #30-025-01033-00-00

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	2	12S	33E	1980	South	660	East	Lea

Latitude: N 33.30574 Longitude: W 103.57766

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 785 bbl	Volume Recovered: 730 bbl
Source of Release: Flange Gasket Failure at Injection Pump	Date and Hour of Occurrence: 6-19-2010@05:52 hrs	Date and Hour of Discovery: 6-19-2010@05:52 hrs
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? E.L. Gonzalez – OCD District 1 - Initial verbal report on 6-19-2010 Geoffrey Leking – OCD District 1 - Follow up report on 6-21-2010	
By Whom? Autumn Long	Date and Hour: 6-19-2010@10:50 hrs	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Flange gasket failed at injection pump causing approximately 785 bbls of produced water to spill. Pumper went to location, turned off disposal pump and closed valves to stop discharge. Flange gasket was replaced with high temperature gasket and pump was turned on at 21:00 hrs. Approximately 730 bbl of produced water was recovered.

Describe Area Affected and Cleanup Action Taken.*
Spill was contained within firewall measuring approximately 138 x 160 x 2.5 feet. EM-31 conductivity survey was performed to identify areas of high conductivity to correlate to chloride in soil. Spill was delineated laterally and vertically by eight borings and soil samples collected to about 40 feet. Soil was excavated between 5 and 10 feet bgs near SB-3, located northwest of well, backfilled with clean soil to 5 feet bgs, 20 mil thickness liner installed in the bottom of the 5 foot excavation and filled to grade with clean soil.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Mark J. Larson, Consultant	Approved by ~~District Supervisor~~ ENV ENGINEER: Geoffrey Leking	
Title: Sr. Project Manager / President, Larson and Associates, Inc.	Approval Date: 10/12/10	Expiration Date:
E-mail Address: mark@laenvironmental.com	Conditions of Approval:	Attached ☐ IRP-10-072575
Date: 10/06/2010 Phone: (432) 687-0901		

* Attach Additional Sheets If Necessary

pGRL1D18856241
2575

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JUN 25 2010
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Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company Samson Resources Company	Contact: Autumn Long
Address: Two West Second Street	Telephone No. (918) 591-1364
Facility Name: State BD #3	Facility Type: Injection Well (W)

Surface Owner:	Mineral Owner	Lease No.:

LOCATION OF RELEASE

API #30-025-01033-00-00

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
I	2	12 ~~T21S~~	R33E	1980	South	660	East	Lea

Latitude: 33.30574 **Longitude:** -103.57766

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: **785 Barrels**	Volume Recovered: 730 Barrels
Source of Release: **Flange Gasket Failed**	Date and Hour of Occurrence: 6-19-2010; 05:52 a.m.	Date and Hour of Discovery: 6/19/2010 05:52 a.m.
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? E. L. Gonzalez - District 1 (505) 393-6161 (Initially reported on 6/19/2010) Geoff Leking – District 1 (505) 393-6161 (Follow-up Contact on 6/21/2010)	
By Whom? Autumn Long	Date and Hour: **6-19-2010 at 10:50 a.m. and 6-21-2010** at 3:30 p.m.	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
N/A

GW@87'

Describe Cause of Problem and Remedial Action Taken.*

Flange gasket failed; 785 barrels of produced water was released, all contained in firewall. Pumper went to location and turned off disposal pump and closed valves; therefore, stopping discharge. Gasket was replaced with high temperature gasket and pump turned back to disposal at 0900.

Describe Area Affected and Cleanup Action Taken.*
The estimated release of 785 barrels of produced water, was all contained in the firewall: Length: 138' Width: 160' Depth: 2.4'
Approximately 730 barrels of produced water was recovered from the containment area.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: Autumn M. Long	OIL CONSERVATION DIVISION
Printed Name: Autumn Long	Approved by ~~District Supervisor~~: ENV ENGR Geoffrey Leking
Title: Environmental Specialist	Approval Date: 07/07/10 Expiration Date: 09/07/10
E-mail Address: autumnl@samson.com	Conditions of Approval: SUBMIT INVESTIGATION WORKPLAN. DELINEATE TO CLEAN +1. SUBMIT FINAL C-141 BY 09/07/10 Attached ☐ IRP-10-07-2575
Date: June 21, 2010 Phone: (918) 591-1364	

* Attach Additional Sheets If Necessary

1RP-10-07-2575
FINAL REPORT
PRODUCED WATER RELEASE
INVESTIGATION AND REMEDIATION

BD State Well #3
API #30-025-01033
Lea County, New Mexico

LAI Project No. 10-0115

October 6, 2010

Prepared for:
Samson Resources Company
Two West Second Street
Tulsa, Oklahoma 74103

Prepared by:
Mark J. Larson
Certified Professional Geologist No. 10490

Larson & Associates, Inc.
507 North Marienfeld, Suite 200
Midland, Texas 79701

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1.0 EXECUTIVE SUMMARY

Larson & Associates, inc. (LAI), as consultant to Samson Resources Company (Samson), has prepared this final report for submittal to the New Mexico Oil Conservation Division (OCD) to present the investigation and remediation of a produced water spill that occurred at the State BD Well #3 (Site).

On June 19, 2010, a flange gasket on the injection pump failed releasing approximately 785 barrels (bbl) of produced water that was retained within the earthen firewall. Samson recovered approximately 730 bbl. The spill was verbally reported to the OCD on June 19, 2010 and the initial C- 141 was submitted on June 21, 2010. The Site is located about 15 miles northwest of Tatum, in Unit I (NE/4, SE/4), Section 2, Township 12 South, Range 33 East NMPM, Lea County, New Mexico. The geodetic position is north 32° 18' 21.34" and west 103° 34' 41.69".

On July 1, 2010, LAI performed an electromagnetic (EM-31) terrain conductivity survey in horizontal dipole (HD) and vertical dipole (VD) modes to identify areas with elevated conductivity readings relative to background that would correspond with elevated chloride concentrations in soil. An area of EM-31HD and EM-31VD readings greater than 25 times background was observed between the well and tank battery that suggested decreasing chloride concentrations with depth. The EM-31HD and VD readings decreased to near background levels north, south, east and west of the Site.

On August 3, 4 and 31, 2010, LAI contracted Scarborough Drilling Company (SDC) to collect soil samples to approximately 40 feet below ground surface (bgs) using an air rotary rig and jam tube sampler. The samples were analyzed by field headspace method and reported no readings above 100 parts per million (ppm), therefore, no laboratory analysis for benzene, toluene, ethylbenzene and xylene (BTEX) was necessary according to OCD guidelines. Total petroleum hydrocarbons (TPH) was analyzed by laboratory method 8015 for gasoline range organics (GRO) and diesel range organics (DRO) and exceeded the OCD recommended remediation action level (RRAL) of 1,000 milligrams per kilogram (mg/Kg) in sample SB-3, 5 feet (3,121 mg/Kg). TPH was below the RRAL in sample SB-3, 3 feet (70.2 mg/Kg) and SB-3, 10 feet (553 mg/Kg).

The vertical and lateral extent of chloride was determined with the highest concentrations reported in samples from SB-2 and SB-3 located between the SWD well and tank battery and northwest of the SWD well, respectively. Chloride was highest at location SB-2 in the sample from 3 feet (1,330 mg/Kg) and decreased to 316 mg/Kg at 40 feet. Chloride was highest at location SB-3 in the sample from 10 feet (12,900 mg/Kg) and decreased to 424 mg/Kg at 40 feet. Chloride was less than 250 mg/Kg from the bottom samples from the remaining borings.

On September 16, 2010, Mr. Geoffrey Leking, Environmental Engineer with the OCD District 1 in Hobbs, New Mexico, approved Samson's request to excavate soil in the vicinity of boring SB-3 from 5 to 10 feet bgs, backfill with clean soil to 5 feet bgs, install a 20-mill thickness liner in the bottom of the excavation and fill the excavation to grade with clean soil.

2.0 INTRODUCTON

This report is submitted to the New Mexico Oil Conservation Division (OCD) on behalf of Samson Resources Company (Samson) by Larson & Associates, Inc., its consultant, to present the investigation and remediation of a produced water spill that occurred on June 19, 2010, at the State BD Well #3 (Site) located in Lea County, New Mexico. The Site is located about 15 miles northwest of Tatum, in Unit I (SE/4, NE/4), Section 2, Township 12 South, Range 33 East NMPM, in Lea County, New Mexico. The geodetic position is north 32° 18' 21.34" and west 103° 34' 41.69". A location and topographic map is presented in Figure 1. An aerial drawing is presented in Figure 2. Figure 3 presents a Site Drawing.

2.1 Background

Approximately 785 barrels (bbl) of produced water was spilled after a flange gasket at the injection pump failed. The spill was contained inside an earthen firewall measuring approximately 138 x 160 feet. Samson recovered approximately 730 bbl for a net loss of approximately 55 bbl. An initial C-141 was submitted to the OCD on June 21, 2010 and remediation project number 1RP-10-07-2575 was assigned to the spill. The initial C-141 granted Samson until September 9, 2010, to complete the spill delineation and remediation. On August 25, 2010, the OCD granted an extension until November 8, 2010, to complete the delineation and remediation.

2.2 Setting

The setting is as follows:

- Groundwater occurs between 50 and 100 feet below ground surface (bgs) based on records from the New Mexico State Engineer (NMSE);
- The nearest fresh water well is located approximately 1,200 feet south (cross gradient) of the Site based on NMSE records;
- No continuously flowing watercourse is within 1,000 horizontal feet of the release; and
- No surface water features, including lakes, rivers, ponds, arroyos, lakebed, sinkhole, or playa lake are located within 1,000 horizontal feet of the release.

3.0 INVESTIGATIONS

3.1 EM-31 Terrain Conductivity Survey

On July 1, 2010, LAI personnel performed an electromagnetic (EM-31) terrain conductivity survey to identify areas of elevated conductivity relative to background that would correspond with elevated chloride concentrations in soil.

The survey was performed over an area measuring approximately 400 x 500 feet (4.59 acres) using an EM-31 meter manufactured by Geonics, Ltd., Toronto, Canada. The EM-31 meter has exploration capabilities ranging from 0 to 9.8 feet in the horizontal dipole (HD) mode and 0 to 19.7 feet in the vertical dipole (VD) mode. Measurements were collected about every 50 feet inside the fenced area and about every 100 feet outside the fenced area. The measurement stations were established using a Nikon DTM-310 total station system and recorded for latitude and longitude using a Trimble hand held global positioning system (GPS) instrument. The EM-31 readings were compared to background measured at location north 400 and east 500. The background EM-31HD and EM-31VD measurements were 7.0 and 4.7 millimhos per meter (mmhos/m), respectively. The EM-31 survey results were submitted to the OCD on July 16, 2010.

EM-31HD readings exceeding about 25 times background were recorded in the area between the well and tank battery near stations north 100 and north 200 on profile east 300. The EM-31HD readings decreased to near background north, south, east and west of the Site. The EM-31HD survey drawing is presented in Figure 4.

EM-31VD readings exceeding about 25 times background were also observed in the area between the well and tank battery similar to the EM-31HD readings and suggests that the impact diminishes with depth. The EM-31VD readings decreased to near background north, south, east and west of the Site. Figure 5 presents the EM-31VD survey drawing.

3.2 Soil Boring Samples

On August 3, 4 and 31, 2010, LAI contracted Scarborough Drilling Company (SDC) to collect soil samples at 8 locations (SB-1 through SB-8) using an air rotary rig and jam tube sampler. Soil samples were collected to a maximum depth of about 40 feet bgs and field analyzed for headspace vapors using a calibrated photoionization detector (PID). Laboratory samples were collected in pre-cleaned glass sample containers that were labeled after filling, chilled in an ice chest and delivered under chain of custody control to Xenco Laboratories located in Odessa, Texas. Appendix A presents the soil boring logs.

Xenco analyzed the samples for chloride by method 300 and select samples for total petroleum hydrocarbons (TPH) by method 8015 including gasoline range organics (GRO) and diesel range organics (DRO). No PID readings exceeded 100 parts per million (ppm) therefore samples were not analyzed by the laboratory for benzene, toluene, ethylbenzene and xylene (BTEX). Boring locations are presented in Figure 3. Table 1 presents a laboratory analytical summary. Laboratory reports are presented in Appendix B.

All sampling equipment, including jam tube sampler, sample scoop, etc., was thoroughly washed between uses with a solution of potable water and laboratory grade detergent and rinsed with distilled water. The borings were plugged according to NMSE rules.

The following OCD criteria were used to determine recommended remediation action levels:

Ranking Criteria	Result	Ranking Score
Depth-to-Groundwater	50 to 99 feet	10
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
	Total Score:	**10**

The following RRAL were calculated for the spill:

Benzene: **10 mg/Kg**
BTEX: **50 mg/Kg**
TPH: **1,000 mg/Kg**

TPH exceeded 1,000 milligrams per kilogram (mg/Kg) in sample SB-3, 5 feet (3,121 mg/Kg) but was below the RRAL in the sample from 3 feet (70.2 mg/Kg) and 10 feet (553 mg/Kg).

Chloride was highest in samples from borings SB-2 and SB-3 located between the SWD well and tank battery and northwest of the SWD well, respectively. Chloride was highest in SB-2 at 3 feet bgs (1,330 mg/Kg) and decreased to 316 mg/Kg at 40 feet bgs. Chloride was highest in SB-3 at 10 feet bgs (12,900 mg/Kg) and decreased to 424 mg/Kg at 40 feet bgs. Chloride was below 250 mg/Kg in the bottom samples from borings SB-1 (9.62 mg/Kg), SB-4 (188 mg/Kg), SB-5 (28.2 mg/Kg), SB-6 (less than 6.66 mg/Kg), SB-7 (62.2 mg/Kg) and SB-8 (16.5 mg/Kg). Isopleth drawings showing chloride concentrations in soil from 0, 5, 10, 15, 20, and 30 feet bgs are presented in Figures 6 through 11, respectively.

4.0 REMEDIATION

From September 27 through 30, 2010, Samson excavated soil in the area of boring SB-3. Soil was excavated between approximately 5 and 10 feet bgs. Approximately 1,180 cubic yards of soil was excavated and transported to the Gandy Marley landfill located west of the Site and clean soil was transported back to the Site for backfilling the excavation.

The excavation was backfilled to about 5 feet bgs where a 20 mil thickness polyethylene liner was installed in the bottom of the 5 foot deep excavation before filling to grade with clean soil. Three samples (SS-1, SS-2 and SS-3) were collected from the clean soil pile and analyzed for chloride by method 300. The chloride concentration of the clean soil ranged from 9.47 to 114 mg/Kg. The excavation location is presented in Figure 12. Table 1 presents a summary of the clean soil analysis. The laboratory report is presented in Appendix B. Photo documentation is presented in Appendix C. Appendix D presents the initial C-141, extension approval and final C-141.

Table 1
Summary of Soil Laboratory Analyses
Samson Resources
State BD Well #3
Lea County, New Mexico
10-0115

Location	Depth	Date	Status	GRO	DRO	Total TPH	Chloride
RRAL:						**1,000**	
SB-1	0	8/3/2010	Insitu	<21.6	<21.6	<21.6	<7.23
	5	8/3/2010	Insitu	<15.8	<15.8	<15.8	91.3
	10	8/3/2010	Insitu	--	--	--	9.62
SB-2	0	8/4/2010	Insitu	<16.7	<16.7	<16.7	**957**
	3	8/4/2010	Insitu	<16.6	<16.6	<16.6	**1,330**
	5	8/4/2010	Insitu	<16.5	<16.5	<16.5	**901**
	10	8/4/2010	Insitu	--	--	--	**673**
	15	8/4/2010	Insitu	--	--	--	**868**
	20	8/4/2010	Insitu	--	--	--	**501**
	30	8/4/2010	Insitu	--	--	--	**363**
	40	8/4/2010	Insitu	--	--	--	**316**
SB-3	0	8/4/2010	Insitu	<17.8	45.4	45.4	**603**
	3	8/4/2010	Insitu	<15.9	70.2	70.2	**556**
	5	8/4/2010	Insitu	341	2,780	**3,121**	**4,040**
	10	8/4/2010	Insitu	83.2	470	**553**	**12,900**
	15	8/4/2010	Insitu	<16.4	<16.4	<16.4	**3,650**
	20	8/4/2010	Insitu	<16.7	<16.7	<16.7	**2,270**
	25	8/4/2010	Insitu	<15.8	<15.8	<15.8	**1,720**
	30	8/4/2010	Insitu	--	--	--	**1,390**
	40	8/4/2010	Insitu	--	--	--	**424**
SB-4	0	8/3/2010	Insitu	<17.0	<17.0	<17.0	186
	5	8/3/2010	Insitu	<17.0	<17.0	<17.0	**796**
	10	8/3/2010	Insitu	--	--	--	**699**
	15	8/3/2010	Insitu	--	--	--	**374**
	20	8/3/2010	Insitu	--	--	--	**476**
	25	8/3/2010	Insitu	--	--	--	188
SB-5	0	8/3/2010	Insitu	<15.8	<15.8	<15.8	6.91
	3	8/3/2010	Insitu	<16.0	<16.0	<16.0	<5.35
	5	8/3/2010	Insitu	<16.8	<16.8	<16.8	28.1
	10	8/3/2010	Insitu	--	--	--	28.2

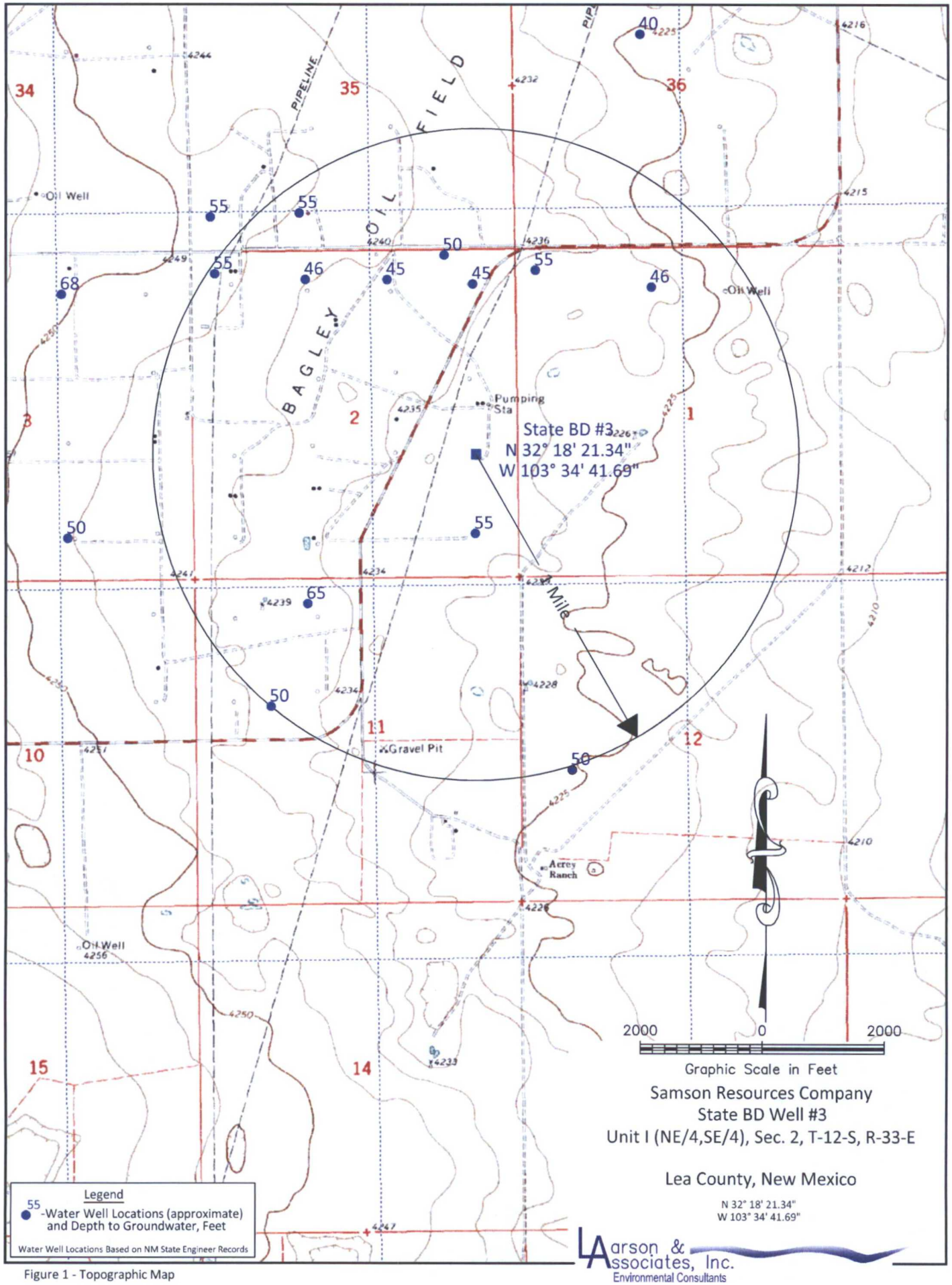
Table 1
Summary of Soil Laboratory Analyses
Samson Resources
State BD Well #3
Lea County, New Mexico
10-0115

Location	Depth	Date	Status	GRO	DRO	Total TPH	Chloride
RRAL:						**1,000**	
SB-6	0	8/3/2010	Insitu	<16.4	<16.4	<16.4	<5.48
	5	8/3/2010	Insitu	<18.9	<18.9	<18.9	<6.30
	10	8/3/2010	Insitu	--	--	--	9.71
	15	8/3/2010	Insitu	--	--	--	<6.66
SB-7	0	8/31/2010	Insitu	<15.0	43.9	43.9	21.2
	3	8/31/2010	Insitu	<15.1	<15.1	<15.1	14.6
	5	8/31/2010	Insitu	<15.1	<15.1	<15.1	10.9
	10	8/31/2010	Insitu	--	--	--	62.2
SB-8	0	8/31/2010	Insitu	<15.1	<15.1	<15.1	**1,460**
	3	8/31/2010	Insitu	<14.9	<14.9	<14.9	**456**
	5	8/31/2010	Insitu	<15.0	<15.0	<15.0	**731**
	10	8/31/2010	Insitu	--	--	--	16.5
Backfill Samples							
SS-1	--	--	--	--	--	--	114
SS-2	--	--	--	--	--	--	9.47
SS-3	--	--	--	--	--	--	11.8

Notes

TPH samples analyzed via EPA method 8015M.
Depth measurements are in feet.
All concentrations are in milligrams per kilogram (mg/Kg, parts per million).
Blue and Bold indicates the value exceeds the RRAL Cleanup Level.

JWW



Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

Figure 1 - Topographic Map

JWW

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

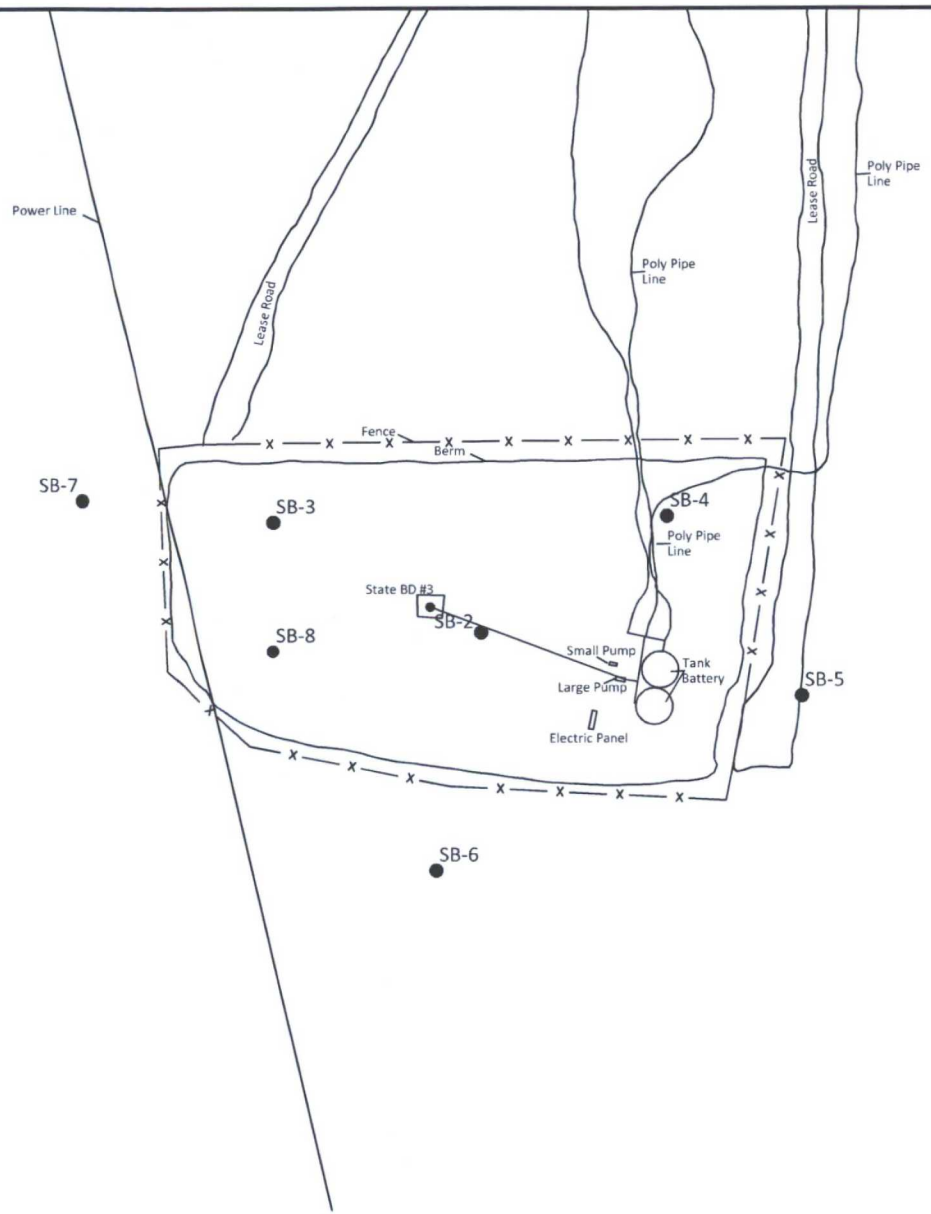
N 32° 18' 21.34"
W 103° 34' 41.69"

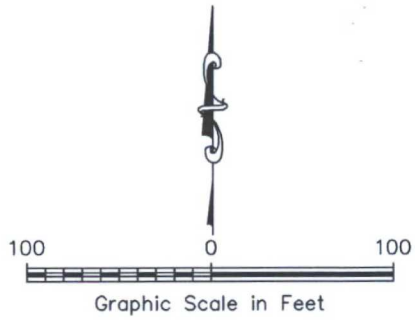
Larson & Associates, Inc.
Environmental Consultants

Figure 2 - Aerial Map

Y:\PROJECTS\Samson Investment Co\10-0115 State BD #3\10-0115 State BD #3.dwg, 10/8/2010 8:22:43 AM

JWW





Legend

SB-3 ● -Soil Boring Location, August 3,4, and 31, 2010

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

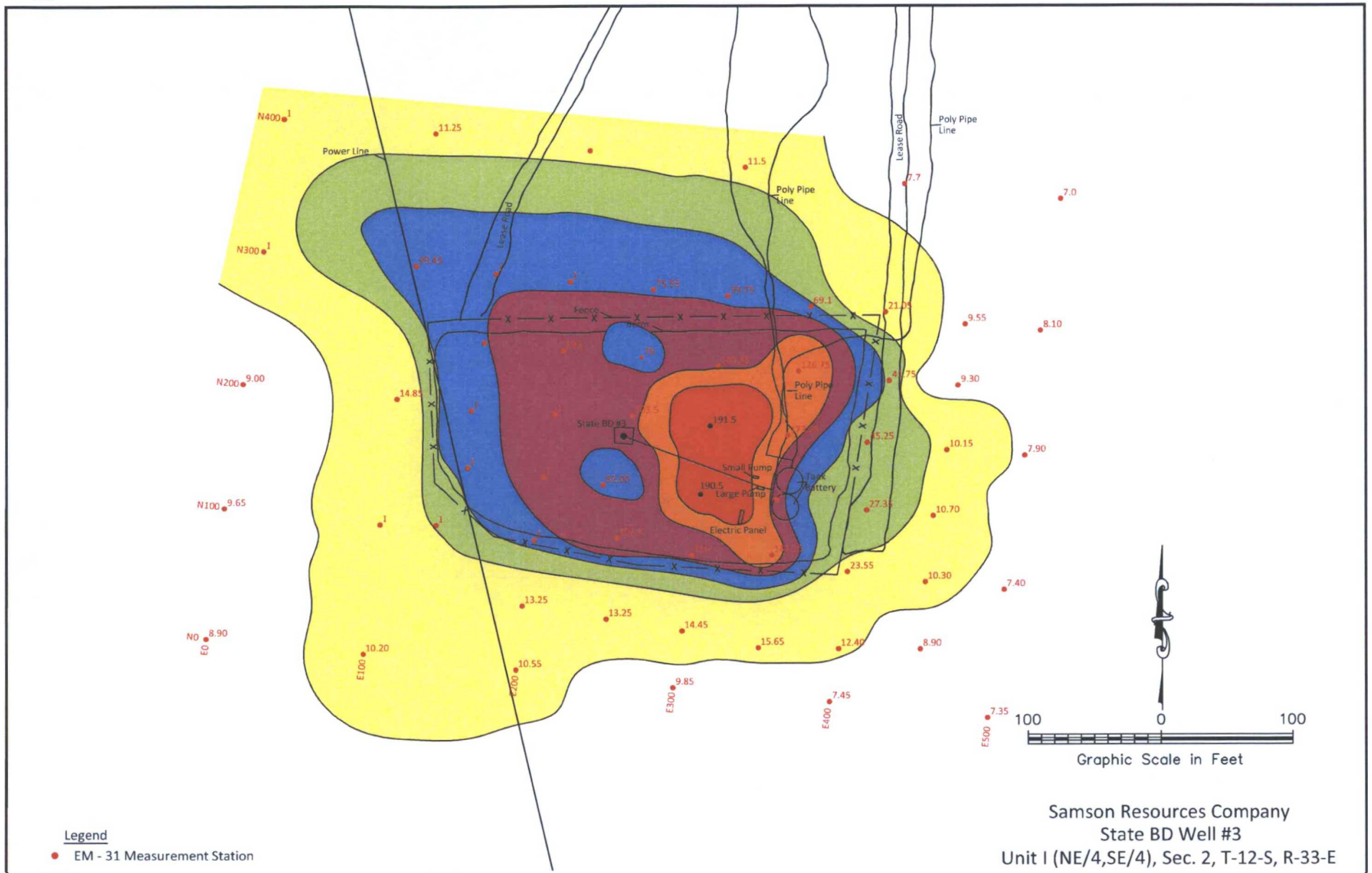
Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

Figure 3 - Site Drawing

JWW



Legend

- EM - 31 Measurement Station

- <1.5 Times Background (<10 mmhos/m)
- 1.5 to 3.5 Times Background (10 to 25 mmhos/m)
- 3.5 to 7.0 Times Background (25.0 to 50.0 mmhos/m)
- 7.0 to 14.0 Times Background (50.0 to 100 mmhos/m)
- 14.0 to 18.0 Times Background (100 to 125 mmhos/m)
- 18.0 to 25.0 Times Background (125 to 175 mmhos/m)
- >25.0 Times Background (>175 mmhos/m)

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

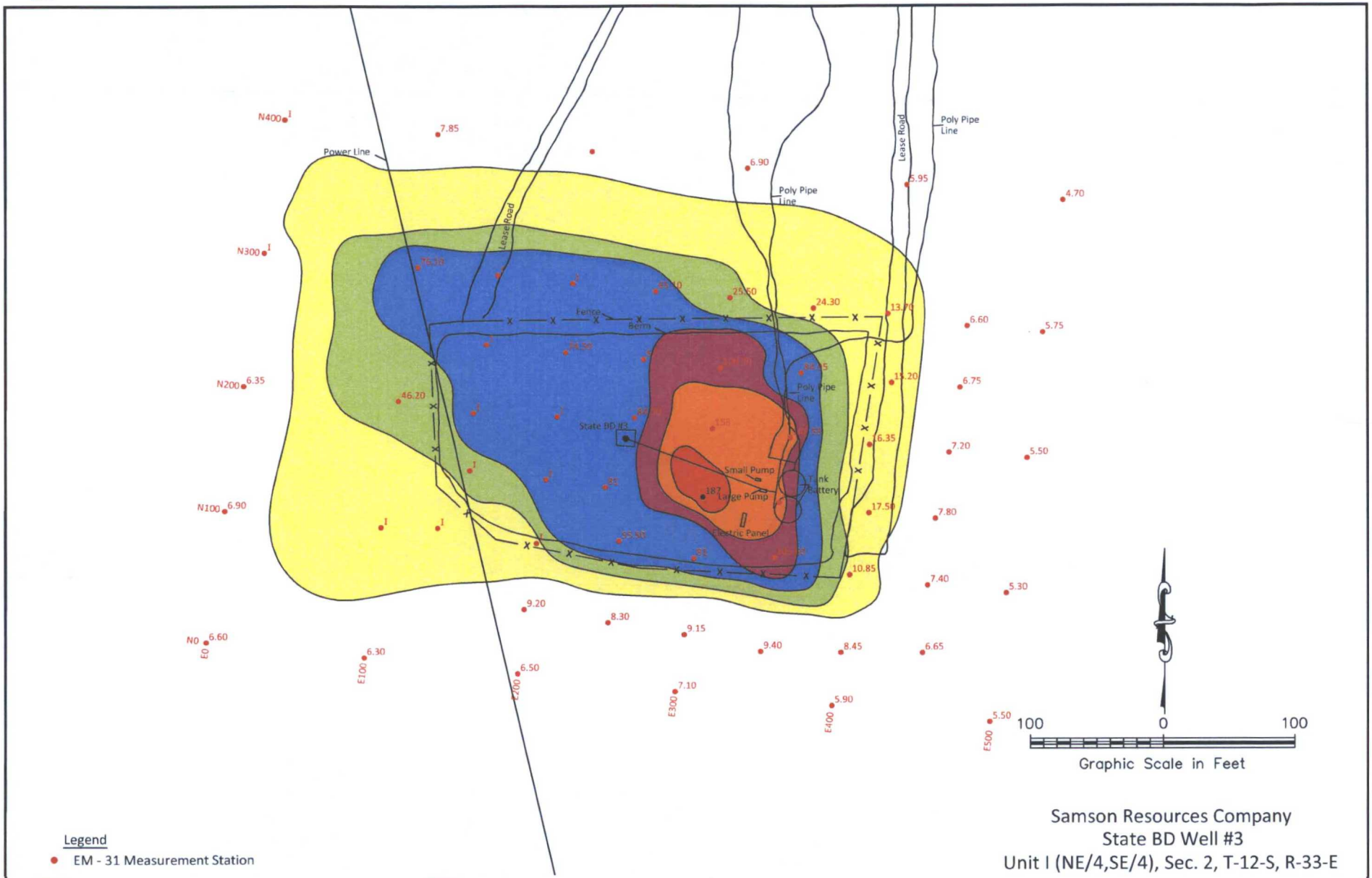
Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

Figure 4 - EM-31 HD Drawing

JWW



Legend

- EM - 31 Measurement Station

- <1.5 Times Background (<10 mmhos/m)
- 1.5 to 3.5 Times Background (10 to 25 mmhos/m)
- 3.5 to 7.0 Times Background (25.0 to 50.0 mmhos/m)
- 7.0 to 14.0 Times Background (50.0 to 100 mmhos/m)
- 14.0 to 18.0 Times Background (100 to 125 mmhos/m)
- 18.0 to 25.0 Times Background (125 to 175 mmhos/m)
- >25.0 Times Background (>175 mmhos/m)

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

Figure 5 - EM-31 VD Drawing

JWW

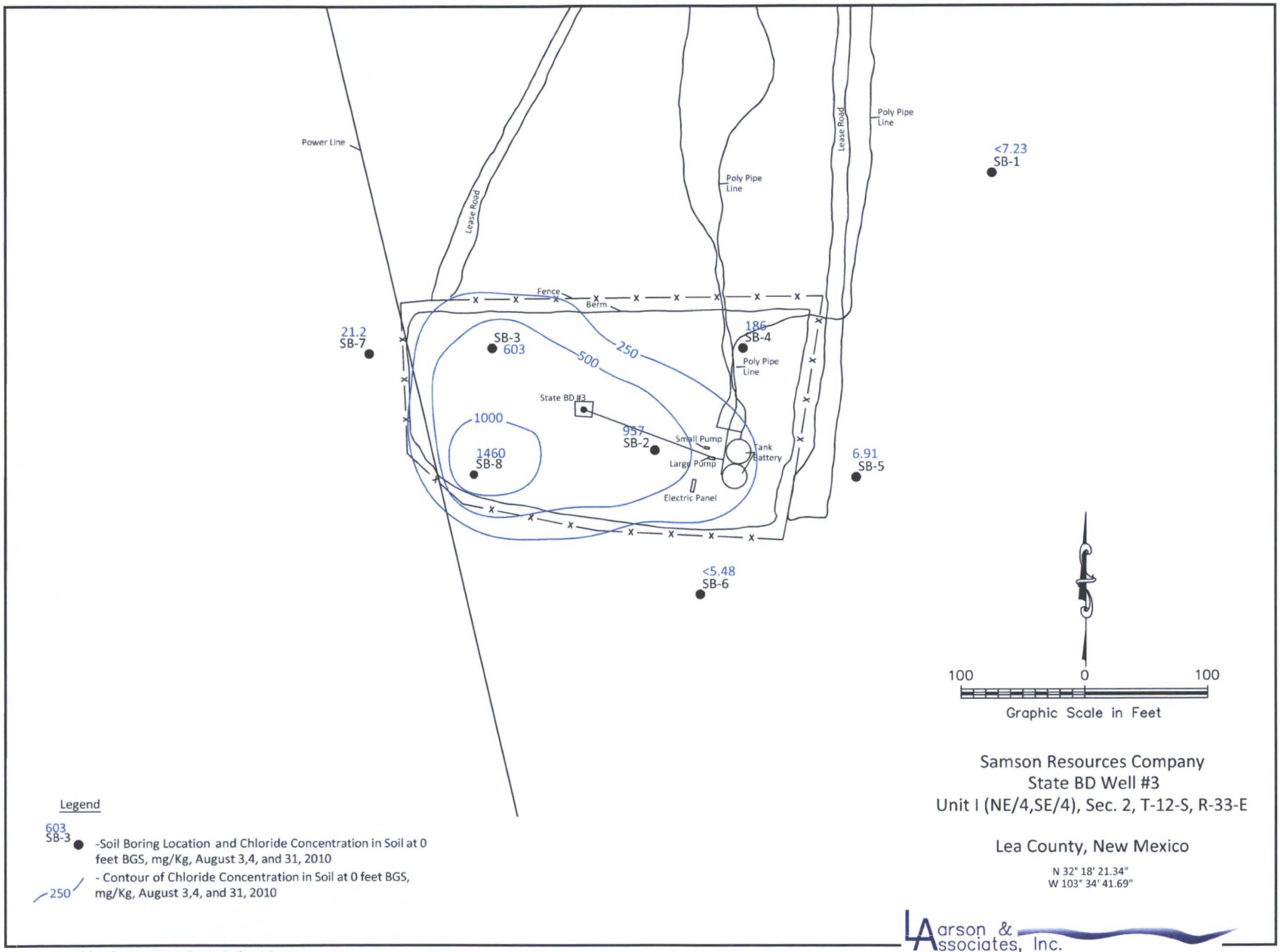


Figure 6 - Chloride Concentration in Soil at 0 Feet

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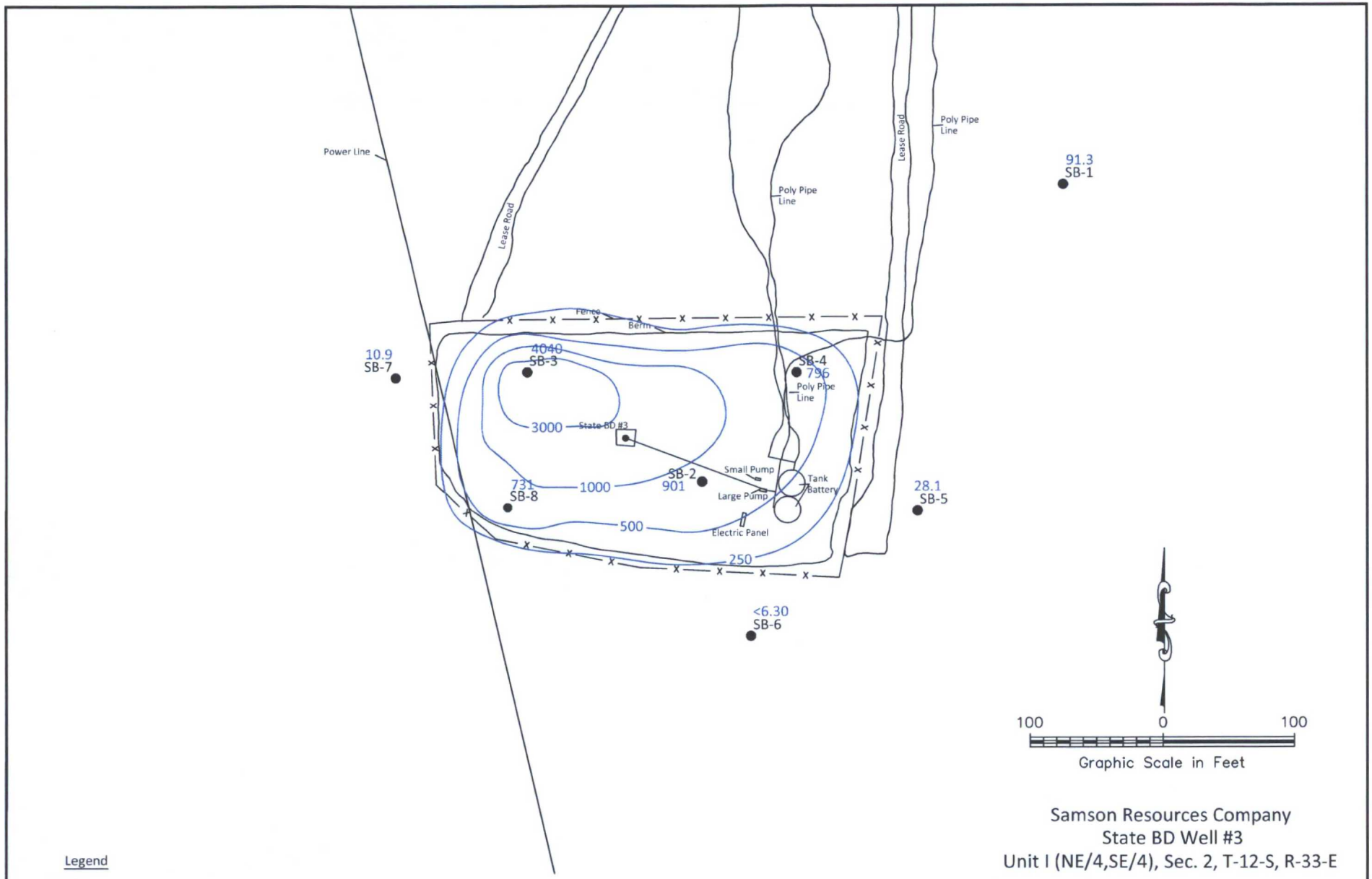
JWW



Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

Figure 7 - Chloride Concentration in Soil at 5 Feet

JWW

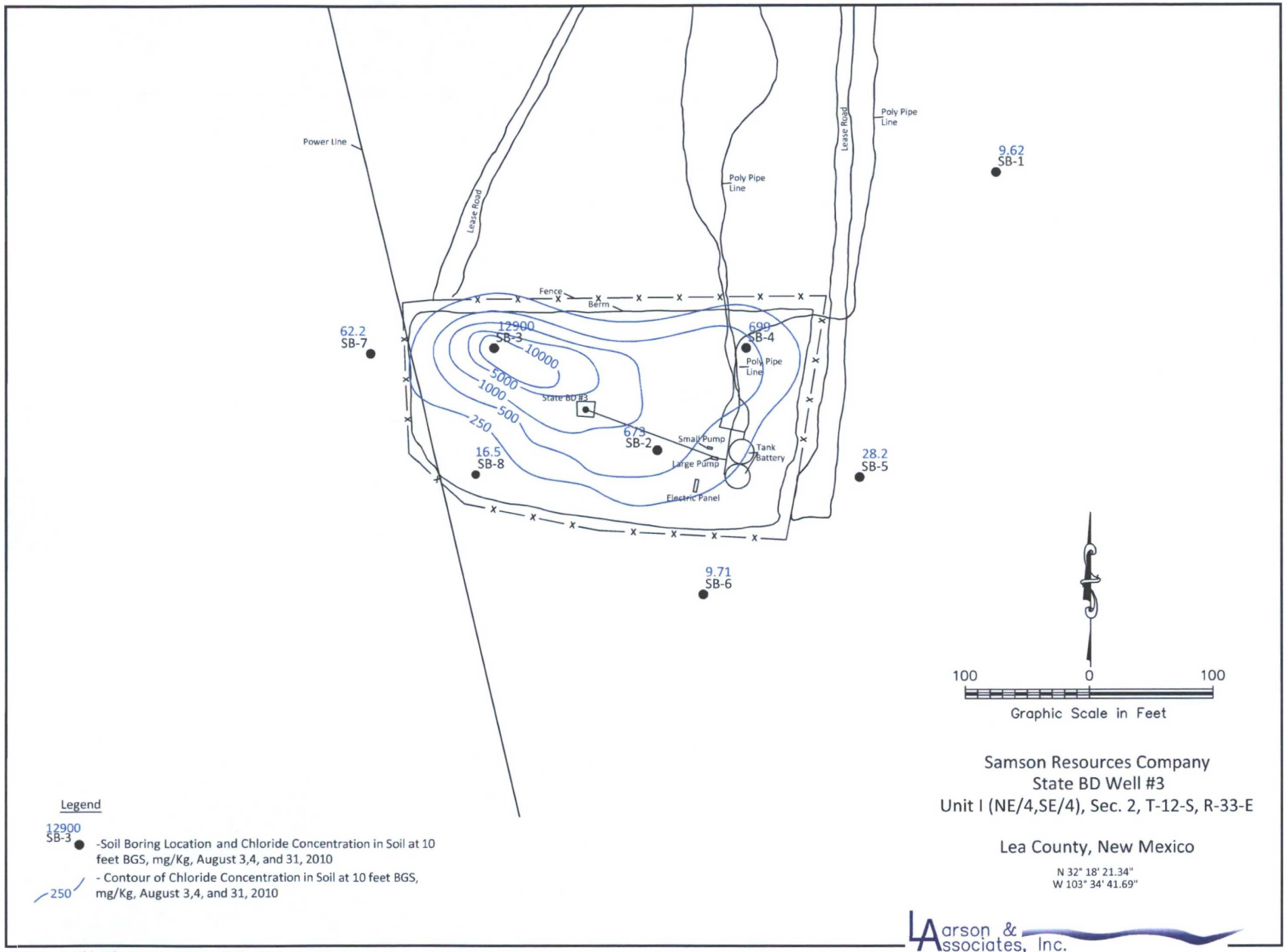


Figure 8 - Chloride Concentration in Soil at 10 Feet

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JWW

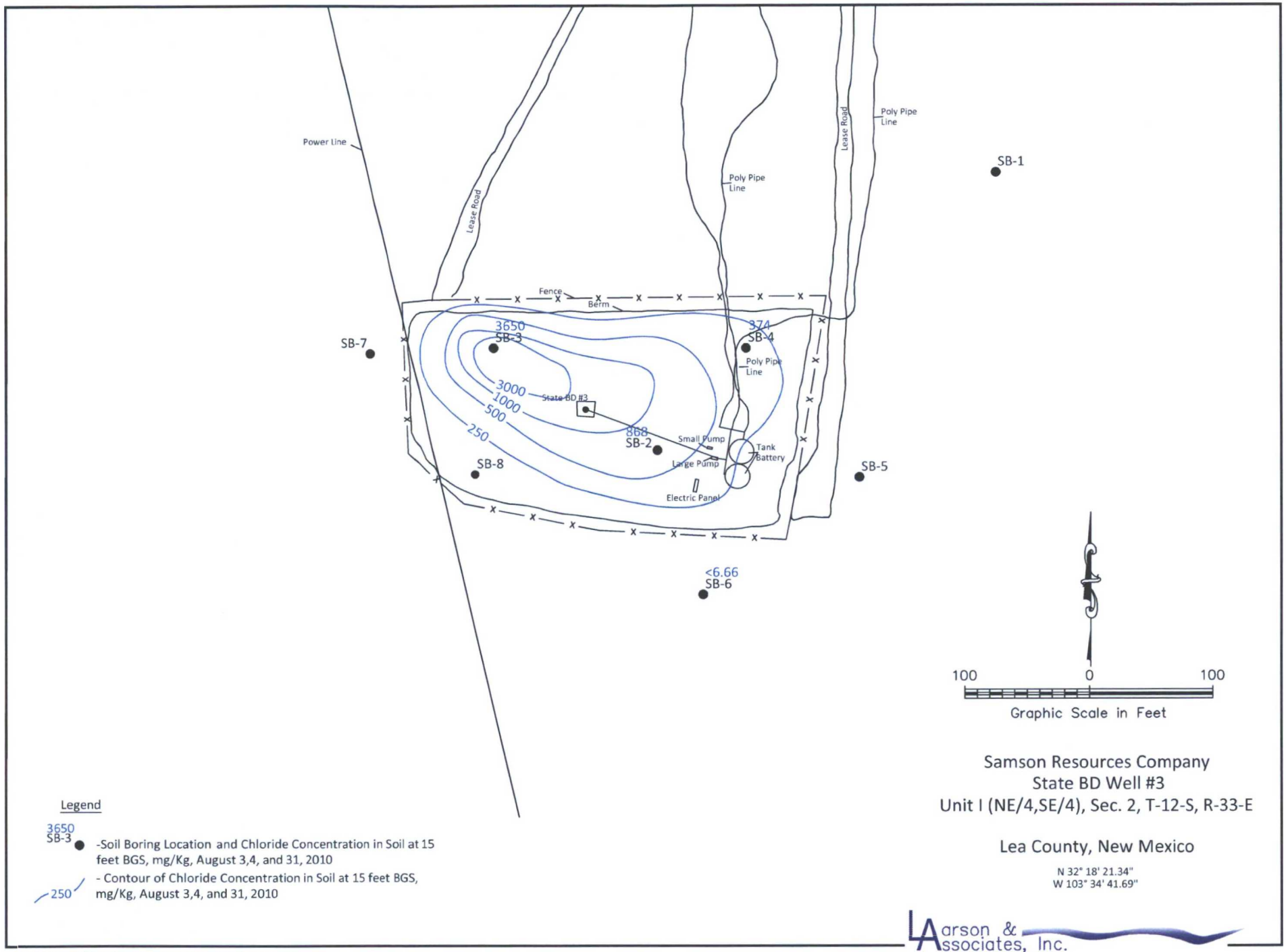
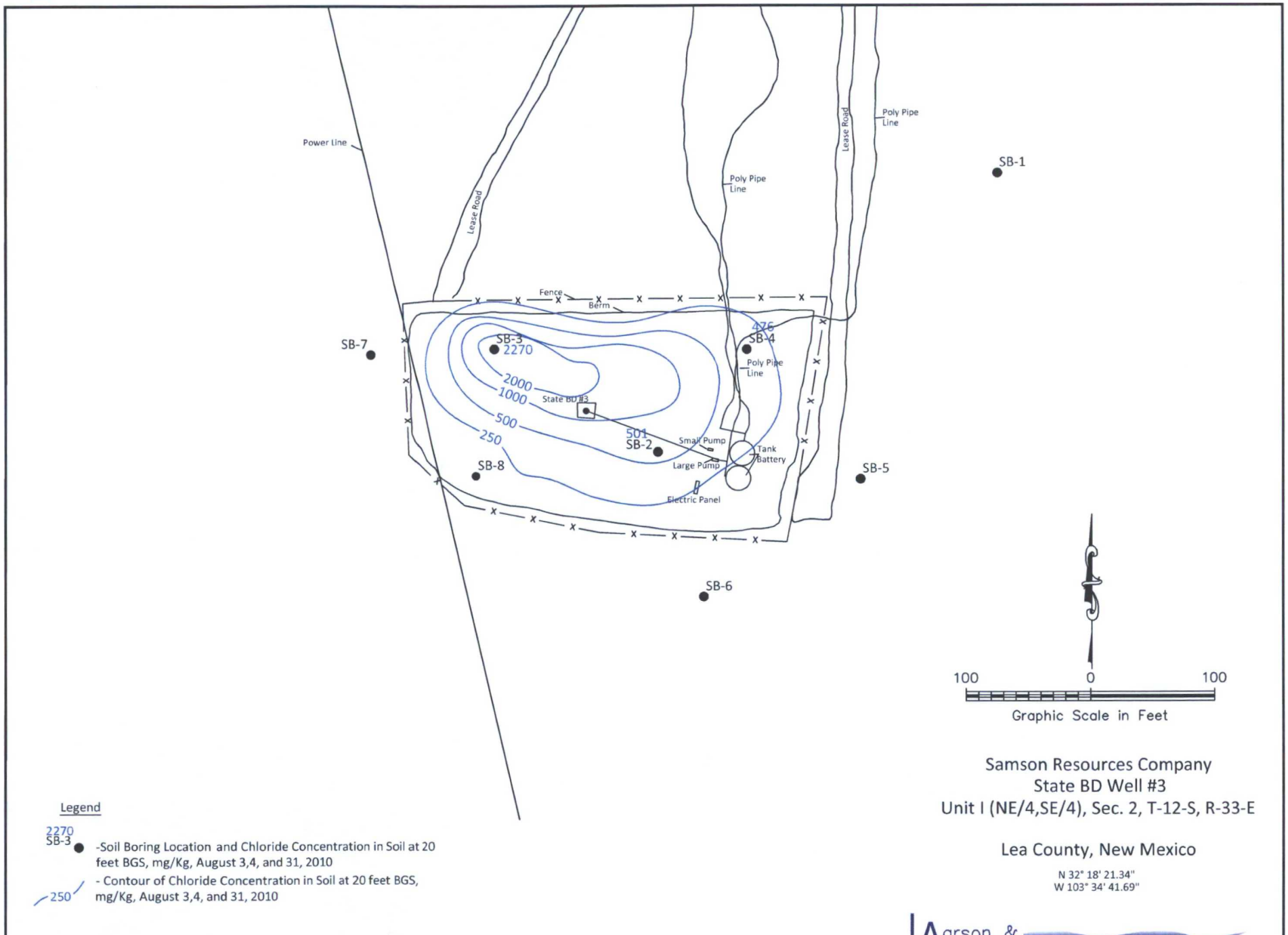


Figure 9 - Chloride Concentration in Soil at 15 Feet

JWW



Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

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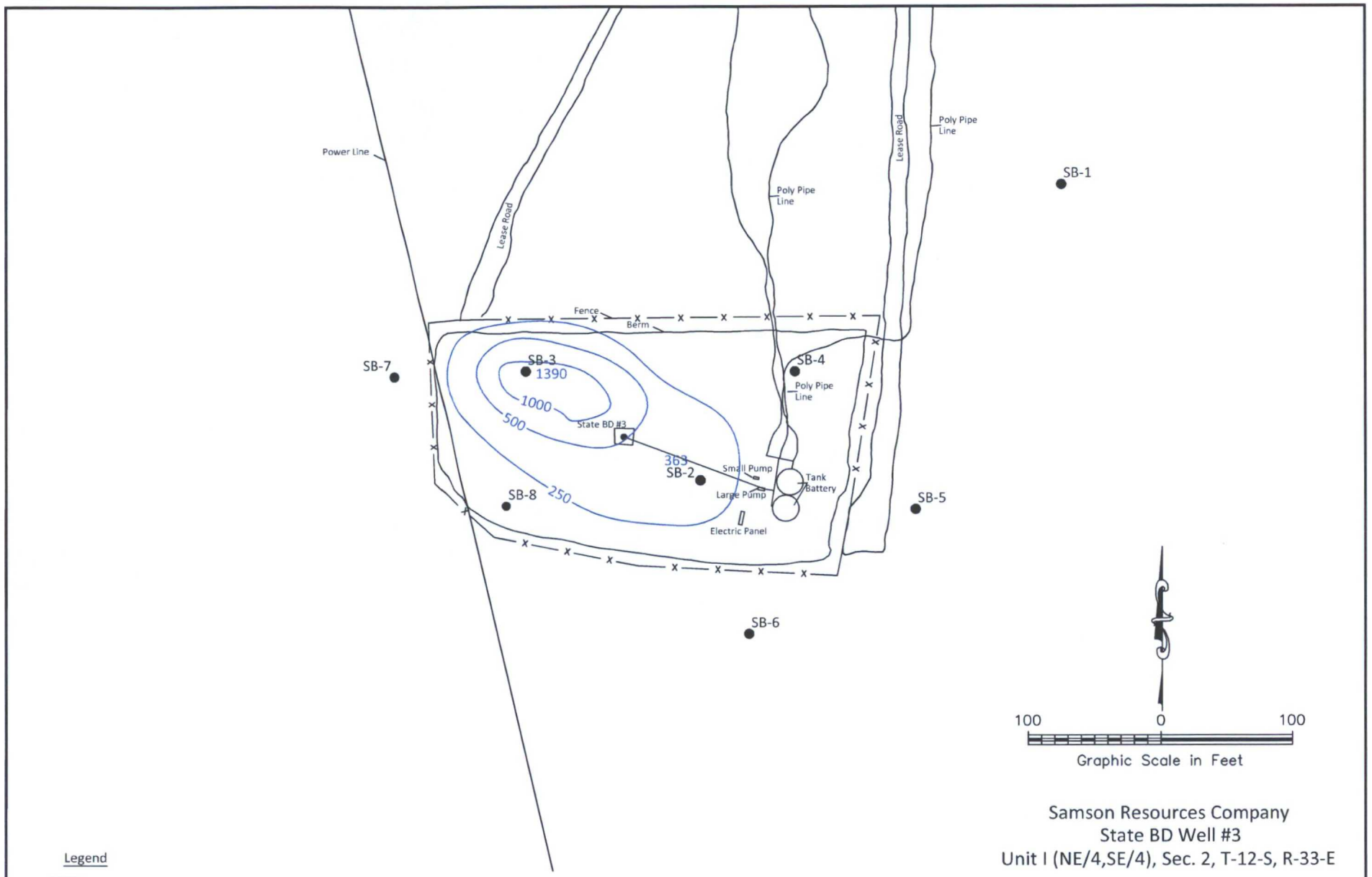
Figure 10 - Chloride Concentration in Soil at 20 Feet

JWW



Legend

1390
SB-3 ● -Soil Boring Location and Chloride Concentration in Soil at 30 feet BGS, mg/Kg, August 3,4, and 31, 2010

250 - Contour of Chloride Concentration in Soil at 30 feet BGS, mg/Kg, August 3,4, and 31, 2010

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

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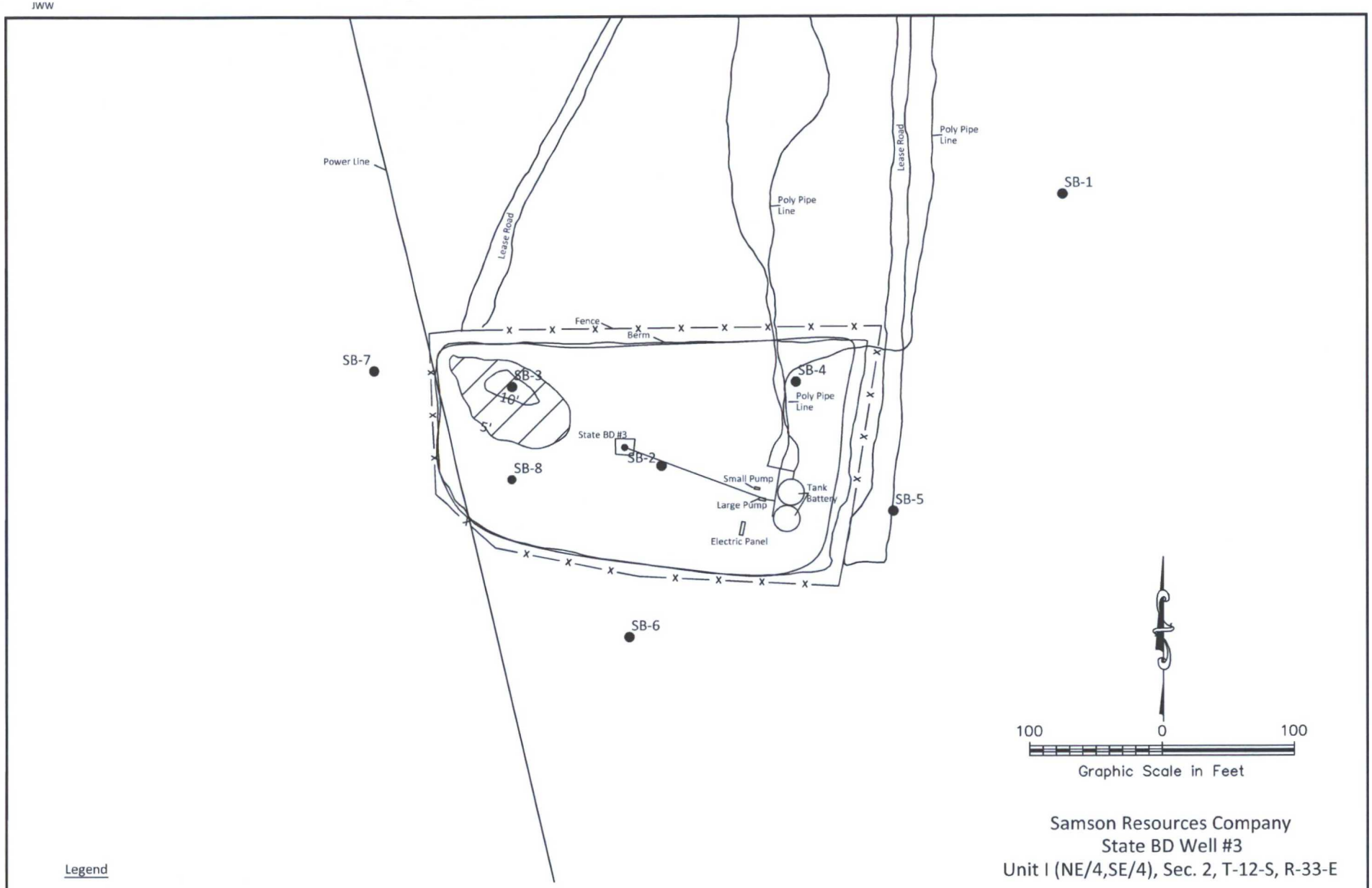
Environmental Consultants

Figure 11 - Chloride Concentration in Soil at 30 Feet

Y:\PROJECTS\Samson Investment Co\10-0115 State BD #3\10-0115 State BD #3.dwg, 10/8/2010 8:24:28 AM

JWW



Legend

SB-3 ● -Soil Boring Location, August 3,4, and 31, 2010

5 - Area of Soil Excavation Feet

- Area of Liner Installation

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

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Environmental Consultants

Figure - Soil Removal and Liner Installation Area

JWW

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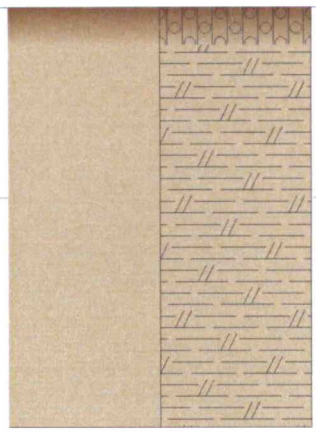
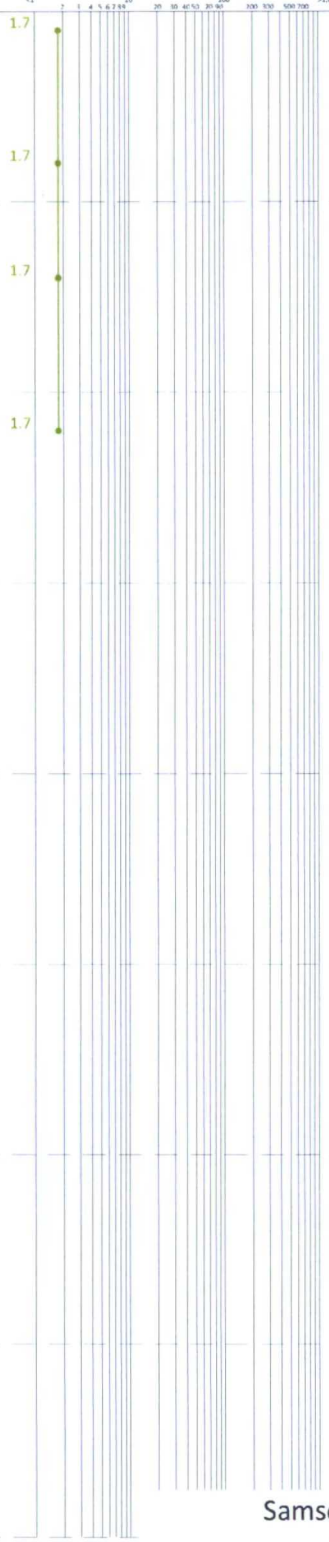


PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 8/3/2010, completed 8/3/2010.
Drilled with Air Rotary by Scarborough Drilling.

SM - Light Brown (7.5YR 5/3) unconsolidated, dry, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, dry, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, dry, no odor

5' bgs
10' bgs
15' bgs
20' bgs
25' bgs
30' bgs
35' bgs
40' bgs

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
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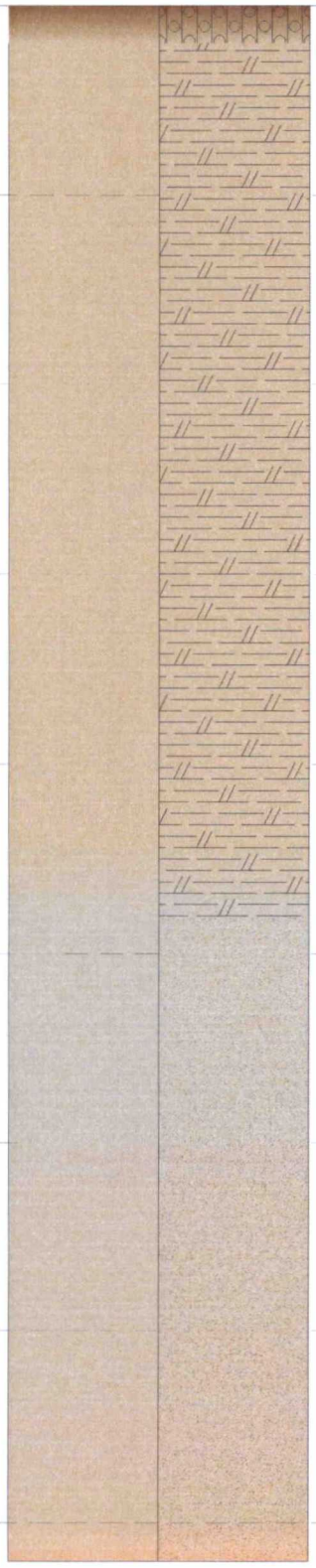
SB-1 Boring Log



5' bgs

10' bgs

15' bgs

20' bgs

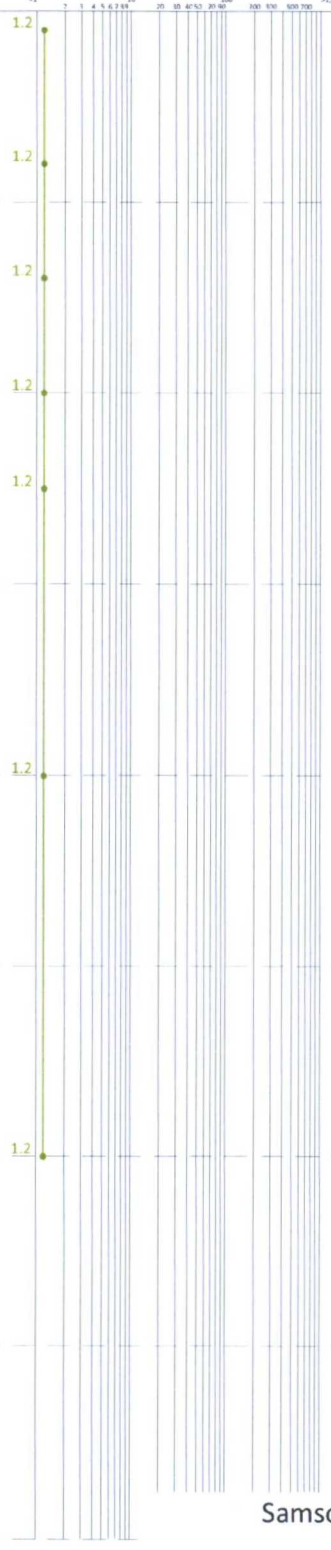
25' bgs

30' bgs

35' bgs

40' bgs

PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 8/4/2010, completed 8/4/2010.
Drilled with Air Rotary by Scarborough Drilling.

SM - Light Brown (7.5YR 5/3) unconsolidated, dry, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, dry, no odor

Caliche - Grayish Brown (10YR 8/1) weathered dense, dry, no odor

Sand - Grayish Brown (7.5YR 8/2) unconsolidated, interbedded with microcrystalline quartzite, dry, no odor

Sand - Grayish Brown (5YR 8/2) unconsolidated, interbedded with microcrystalline quartzite, very moist, no odor

Total Depth at 41 Feet BGS

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

SB-2 Boring Log

JWW

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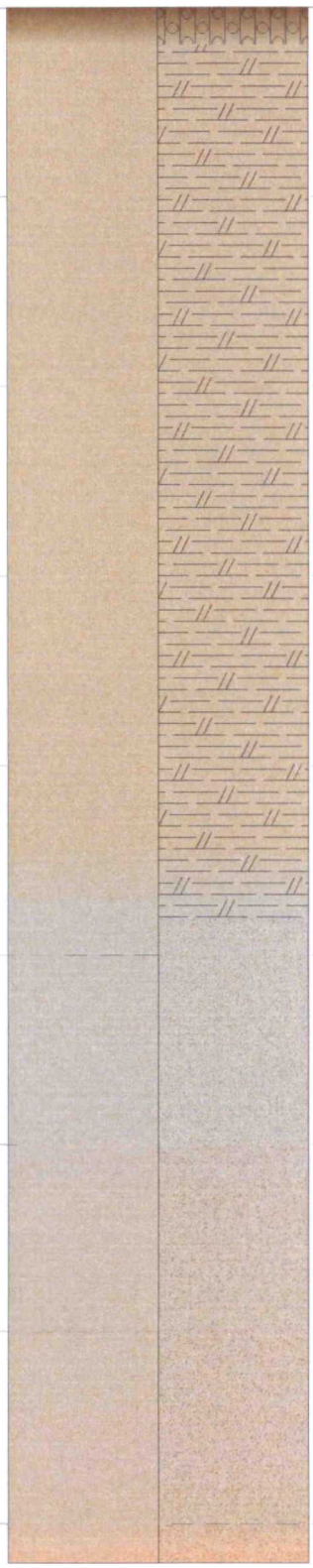


5' bgs

10' bgs

15' bgs

30' bgs

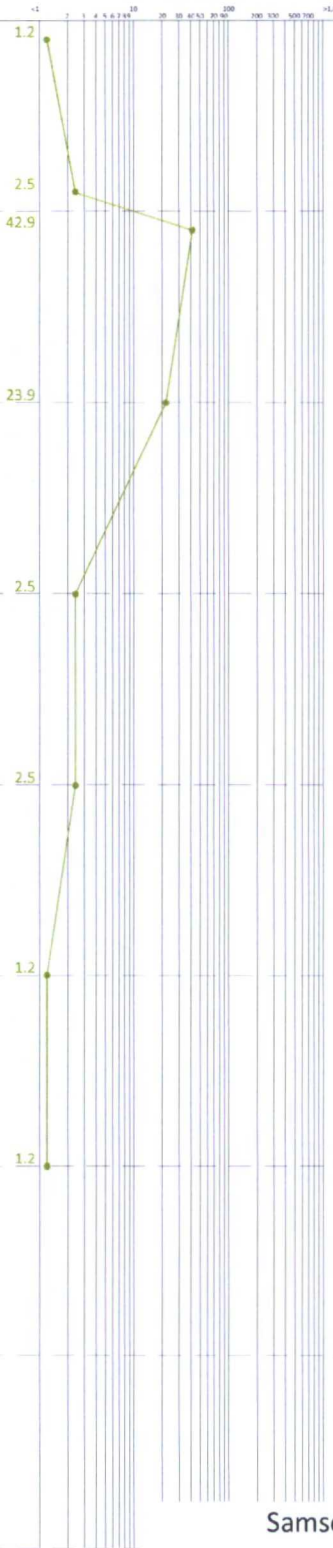
25' bgs

30' bgs

35' bgs

40' bgs

PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 8/4/2010, completed 8/4/2010.
Drilled with Air Rotary by Scarborough Drilling.

SM - Light Brown (7.5YR 5/3) unconsolidated, dry, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, dry, slight hydrocarbon odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, dry, moderata hydrocarbon odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, dry, no odor

Caliche - Grayish Brown (10YR 8/1) weathered dense, dry, no odor

Sand - Grayish Brown (7.5YR 8/2) unconsolidated, interbedded with microcrystalline quartzite, dry, no odor

Sand - Grayish Brown (5YR 8/3) unconsolidated, interbedded with microcrystalline quartzite, moist, no odor

Total Depth at 41 Feet BGS

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

SB-3 Boring Log

JWW

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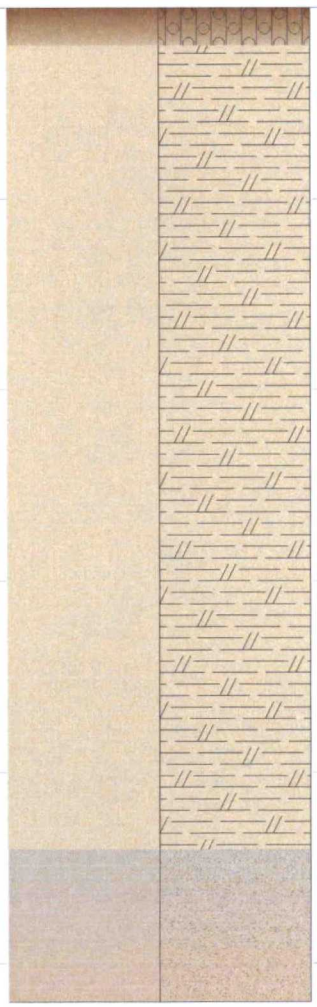
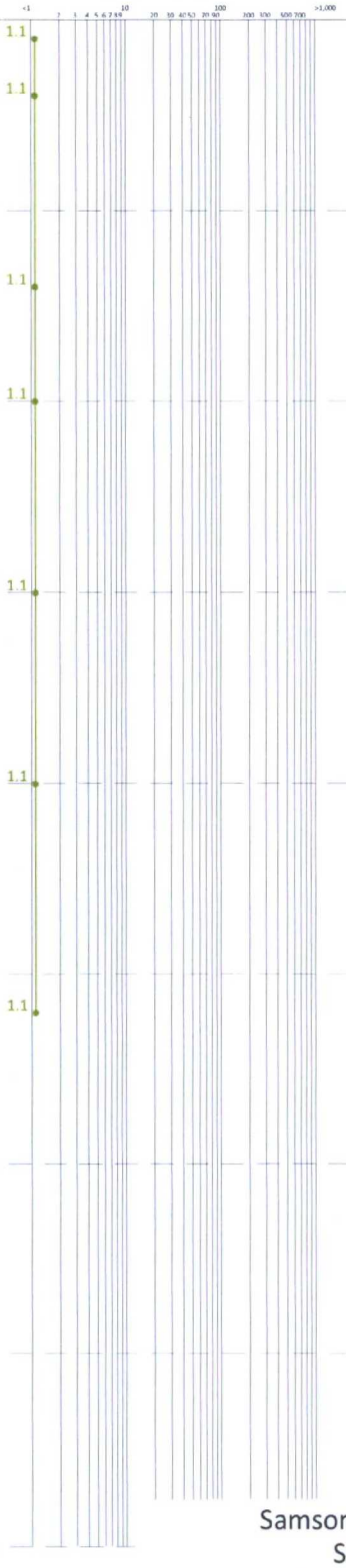


PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 8/4/2010, completed 8/4/2010.
Drilled with Air Rotary by Scarborough Drilling.

SM - Light Brown (7.5YR 5/3) unconsolidated, dry, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

5' bgs

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

10' bgs

15' bgs

20' bgs

Caliche - Grayish Brown (10YR 8/1) weathered dense, dry, no odor

Sand - Grayish Brown (7.5YR 8/2) unconsolidated, interbedded with microcrystalline quartzite, dry, no odor

25' bgs

Total Depth at 26 Feet BGS

30' bgs

35' bgs

40' bgs

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

SB-4 Boring Log

JWW

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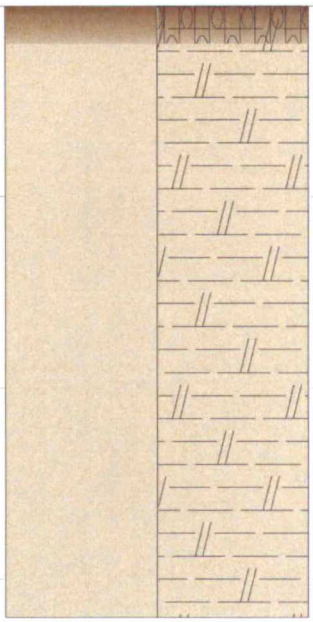
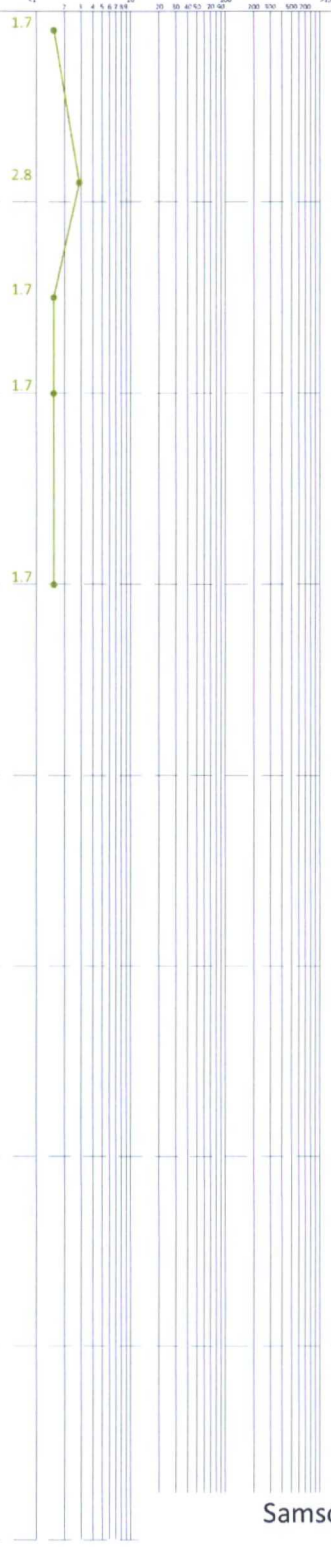


PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 8/4/2010, completed 8/4/2010.
Drilled with Air Rotary by Scarborough Drilling.

SM - Light Brown (7.5YR 5/3) unconsolidated, dry, no odor

5' bgs

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

10' bgs

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

15' bgs

Total Depth at 16 Feet BGS

20' bgs

25' bgs

30' bgs

35' bgs

40' bgs

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

SB-5 Boring Log

JWW

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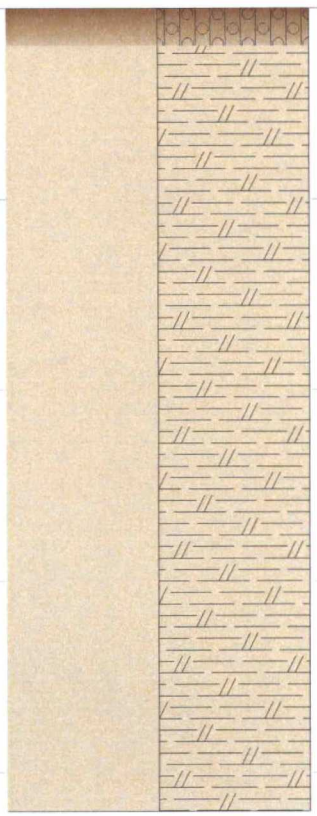
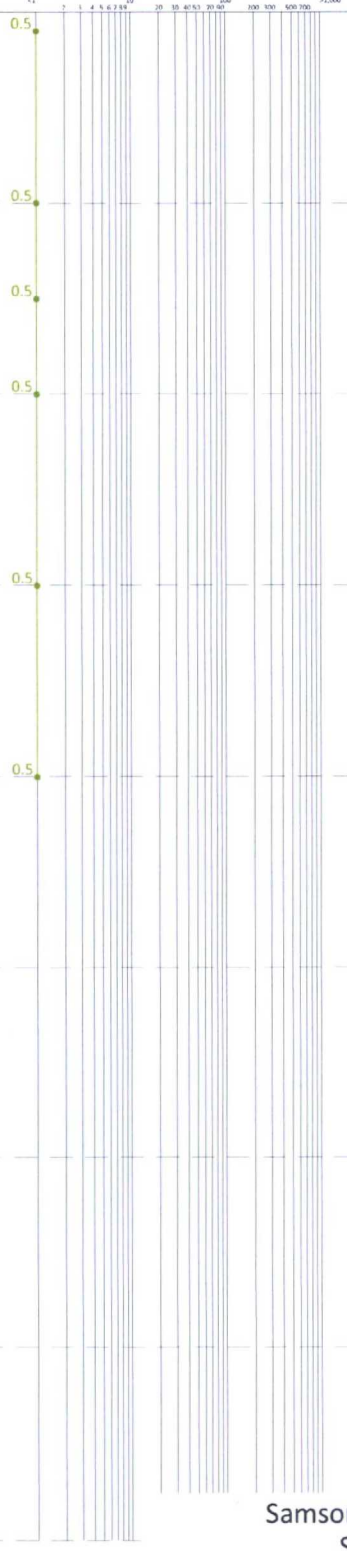


PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 8/4/2010, completed 8/4/2010.
Drilled with Air Rotary by Scarborough Drilling.

SM - Light Brown (7.5YR 5/3) unconsolidated, dry, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, moist, no odor

Caliche - Grayish Brown (10YR 8/1) weathered dense, dry, no odor

Total Depth at 21 Feet BGS

5' bgs
10' bgs
15' bgs
20' bgs
25' bgs
30' bgs
35' bgs
40' bgs

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

SB-6 Boring Log

JWW

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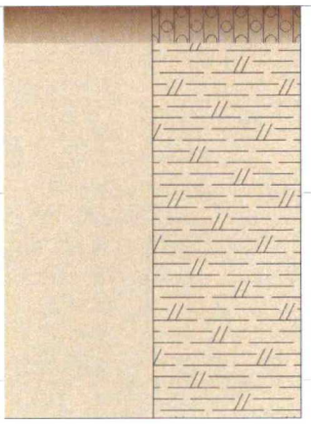
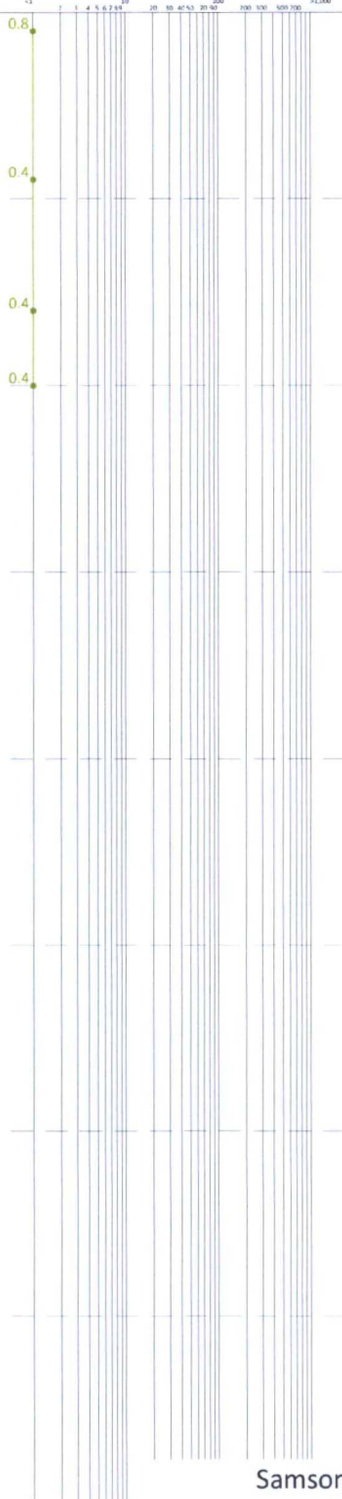


PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 8/31/2010, completed 8/31/2010.
Drilled with Air Rotary by Scarborough Drilling.

SM - Light Brown (7.5YR 5/3) unconsolidated, dry, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, dry, no odor

Total Depth at 11 Feet BGS

5' bgs

10' bgs

15' bgs

20' bgs

25' bgs

30' bgs

35' bgs

40' bgs

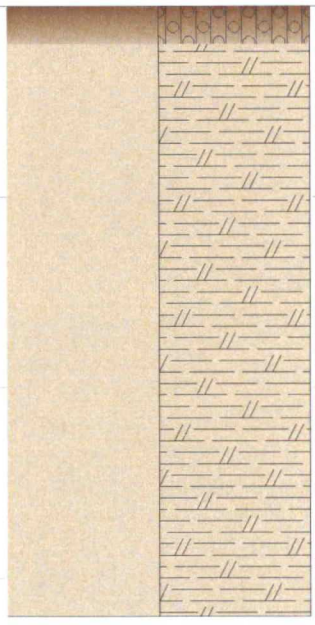
Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

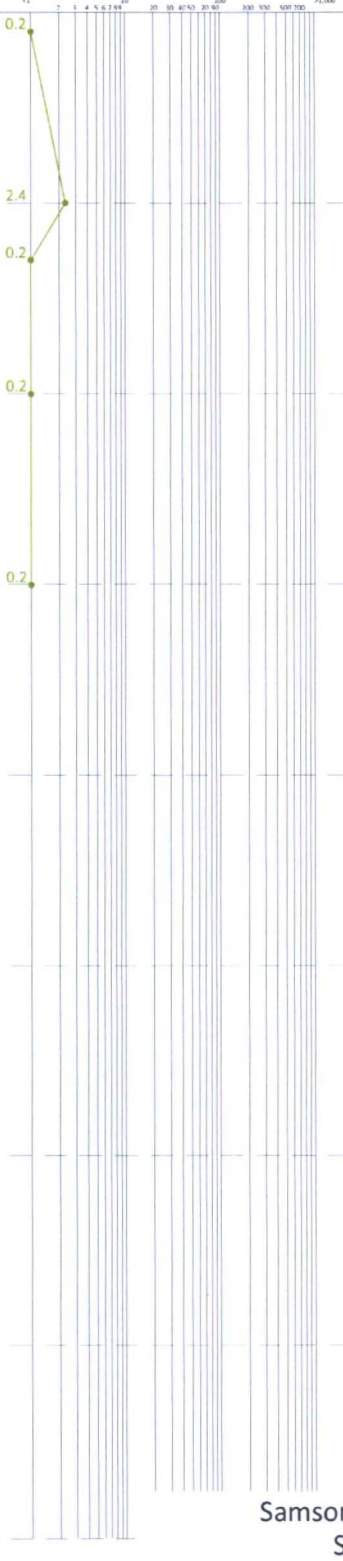
N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

SB-7 Boring Log



PID Response Log Plot (parts per million)



Lithologic Well Log

Drilling started 8/31/2010, completed 8/31/2010.
Drilled with Air Rotary by Scarborough Drilling.

SM - Light Brown (7.5YR 5/3) unconsolidated, dry, no odor

Caliche - Light Grayish Brown (10YR 8/2) weathered dense, dry, no odor

Total Depth at 16 Feet BGS

10' bgs
20' bgs
30' bgs
40' bgs
50' bgs
60' bgs
70' bgs
80' bgs

Samson Resources Company
State BD Well #3
Unit I (NE/4,SE/4), Sec. 2, T-12-S, R-33-E

Lea County, New Mexico

N 32° 18' 21.34"
W 103° 34' 41.69"

Larson & Associates, Inc.
Environmental Consultants

SB-8 Boring Log

Analytical Report 392067

for

Larson & Associates

Project Manager: Michelle Green

State BD Well #3

10-0115

04-OCT-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), 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-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

ACCREDITED IN ACCORDANCE WITH nelac

04-OCT-10

Project Manager: **Michelle Green**
Larson & Associates
P.O. Box 50685
Midland, TX 79710

Reference: XENCO Report No: **392067**
State BD Well #3
Project Address:

Michelle Green:

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 392067. 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. 392067 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 392067

Larson & Associates, Midland, TX

State BD Well #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Backfill SS-1	S	Sep-27-10 12:10		392067-001
Backfill SS-2	S	Sep-27-10 17:00		392067-002
Backfill SS-3	S	Sep-28-10 16:00		392067-003

CASE NARRATIVE

XENCO Laboratories

Client Name: Larson & Associates
Project Name: State BD Well #3

ACCREDITED IN ACCORDANCE WITH nelac

Project ID: 10-0115
Work Order Number: 392067

Report Date: 04-OCT-10
Date Received: 10/01/2010

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Certificate of Analysis Summary 392067

Larson & Associates, Midland, TX

Project Name: State BD Well #3

Project Id: 10-0115
Contact: Michelle Green
Project Location:

Date Received in Lab: Fri Oct-01-10 11:30 am
Report Date: 04-OCT-10
Project Manager: Brent Barron, II

Analysis Requested											
	Lab Id:	392067-001		392067-002		392067-003					
	Field Id:	Backfill SS-1		Backfill SS-2		Backfill SS-3					
	Depth:										
	Matrix:	SOIL		SOIL		SOIL					
	Sampled:	Sep-27-10 12:10		Sep-27-10 17:00		Sep-28-10 16:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***										
	Analyzed:	Oct-01-10 14:40		Oct-01-10 14:40		Oct-01-10 14:40					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		114	10.7	9.47	6.60	11.8	6.58				
Percent Moisture	***Extracted:***										
	Analyzed:	Oct-01-10 17:00		Oct-01-10 17:00		Oct-01-10 17:00					
	Units/RL:	%	RL	%	RL	%	RL				
Percent Moisture		6.74	1.00	24.2	1.00	24.0	1.00				

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

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 and above the SQL.

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.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

BS / BSD Recoveries

Project Name: State BD Well #3

Work Order #: 392067 **Project ID:** 10-0115

Analyst: LATCOR **Date Prepared:** 10/01/2010 **Date Analyzed:** 10/01/2010

Lab Batch ID: 825707 **Sample:** 825707-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	ND	10.0	10.3	103	10	10.2	102	1	80-120	20	

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

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XENCO Laboratories

Form 3 - MS Recoveries

Project Name: State BD Well #3

Work Order #: 392067
Lab Batch #: 825707
Project ID: 10-0115
Date Analyzed: 10/01/2010
Date Prepared: 10/01/2010
Analyst: LATCOR
QC- Sample ID: 392009-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

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	91.6	109	205	104	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

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: State BD Well #3

Work Order #: 392067

Lab Batch #: 825707 **Project ID:** 10-0115

Date Analyzed: 10/01/2010 **Date Prepared:** 10/01/2010 **Analyst:** LATCOR

QC- Sample ID: 392009-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic 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	91.6	94.1	3	20	

Lab Batch #: 825721

Date Analyzed: 10/01/2010 **Date Prepared:** 10/01/2010 **Analyst:** WRU

QC- Sample ID: 392073-019 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	2.28	1.87	20	20	

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

Final 1.000

392067

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: Michelle Green

DATE: 10/1/10 PAGE 1 OF 1
PO #: LAB WORK ORDER #:
PROJECT LOCATION OR NAME: State BD Well #3
LAI PROJECT #: 10-0115 COLLECTOR: JNF

TRRP report? ☐ Yes ☒ No
TIME ZONE: Time zone/State: MDT/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4	NaOH	ICE	UNPRESERVED	ANALYSES	FIELD NOTES
Backfill SS-1	1	9/27/10	1210	S	1					✓		Chloride	Composite
Backfill SS-2	2	9/27/10	1700	S	1					✓		Chloride	"
Backfill SS-3	3	9/28/10	1600	S	1					✓		Chloride	"

ANALYSES: BTEX ☐ MTBE ☐ TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ GASOLINE MOD 8015 ☐ DIESEL - MOD 8015 ☐ VOC 8260 ☐ SVOC 8270 ☐ PAH 8270 ☐ HOLD/PAH ☐ 8081 PESTICIDES ☐ 8082 PCB'S ☐ 8151 HERBICIDES ☐ TCLP - METALS (RCRA) ☐ TCLP - PEST ☐ HERB ☐ TOTAL METALS (RCRA) ☐ LEAD - TOTAL ☐ RCI ☐ TOX ☐ TSS ☐ pH ☐ HEXAVALENT CHROMIUM ☐ EXPLOSIVES ☐ CHLORIDE ☒ TCLP VOC ☐ Semi-VOC ☐ OTHER LIST ☐ D.W. 200.8 ☐ TCLP ☐ FLASHPOINT ☐ % MOISTURE ☐ PECHLORATE ☐ ANIONS ☐ CYANIDE ☐ ALKALINITY ☐

TOTAL

RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	10/1/10 1150	
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
RELINQUISHED BY: (Signature)	DATE/TIME	RECEIVED BY: (Signature)
	10/1 1330	MCR
	11:30 MB	

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 15.1 THERM #:
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☐ CARRIER BILL #
☒ HAND DELIVERED

Final 1.000

XENCO Laboratories	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: Larson & Associates Inc

Date/Time: 8/1 11:30

Lab ID # : 392067

Initials: ME

Sample Receipt Checklist

1. Samples on ice?						(Blue)	Water	No			
2. Shipping container in good condition?						(Yes)	No	None			
3. Custody seals intact on shipping container (cooler) and bottles?						Yes	No	(N/A)			
4. Chain of Custody present?						(Yes)	No				
5. Sample instructions complete on chain of custody?						(Yes)	No				
6. Any missing / extra samples?						Yes	(No)				
7. Chain of custody signed when relinquished / received?						(Yes)	No				
8. Chain of custody agrees with sample label(s)?						(Yes)	No				
9. Container labels legible and intact?						(Yes)	No				
10. Sample matrix / properties agree with chain of custody?						(Yes)	No				
11. Samples in proper container / bottle?						(Yes)	No				
12. Samples properly preserved?						(Yes)	No	N/A			
13. Sample container intact?						(Yes)	No				
14. Sufficient sample amount for indicated test(s)?						(Yes)	No				
15. All samples received within sufficient hold time?						(Yes)	No				
16. Subcontract of sample(s)?						Yes	(No)	N/A			
17. VOC sample have zero head space?						Yes	No	(N/A)			
18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.			
lbs	15.1 °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

Analytical Report 387898

for

Larson & Associates

Project Manager: Michelle Green

State BD Well # 3

10-0115

01-SEP-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), 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-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL01273):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):
Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

XENCO Laboratories

ACCREDITED IN ACCORDANCE WITH nelac

01-SEP-10

Project Manager: **Michelle Green**
Larson & Associates
P.O. Box 50685
Midland, TX 79710

Reference: XENCO Report No: **387898**
State BD Well # 3
Project Address:

Michelle Green:

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 387898. 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. 387898 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 387898

Larson & Associates, Midland, TX

State BD Well # 3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-7 (0')	S	Aug-31-10 09:21	0 ft	387898-001
SB-7 (3')	S	Aug-31-10 09:24	3 ft	387898-002
SB-7 (5')	S	Aug-31-10 09:27	5 ft	387898-003
SB-7 (10')	S	Aug-31-10 09:30	10 ft	387898-004
SB-8 (0')	S	Aug-31-10 10:18	0 ft	387898-005
SB-8 (3')	S	Aug-31-10 10:21	3 ft	387898-006
SB-8 (5')	S	Aug-31-10 10:24	5 ft	387898-007
SB-8 (10')	S	Aug-31-10 10:27	10 ft	387898-008

CASE NARRATIVE

XENCO Laboratories

Client Name: Larson & Associates
Project Name: State BD Well # 3

ACCREDITED IN ACCORDANCE WITH nelac

Project ID:	*10-0115*	*Report Date:*	*01-SEP-10*
Work Order Number:	*387898*	*Date Received:*	*08/31/2010*

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-821178 TPH By SW8015 Mod
None

Batch: LBA-821188 Percent Moisture
None

Batch: LBA-821225 Anions by E300
None

Certificate of Analysis Summary 387898

Larson & Associates, Midland, TX

Project Name: State BD Well # 3

Project Id: 10-0115
Contact: Michelle Green
Project Location:

Date Received in Lab: Tue Aug-31-10 03:00 pm
Report Date: 01-SEP-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	387898-001		387898-002		387898-003		387898-004		387898-005		387898-006	
	Field Id:	SB-7 (0')		SB-7 (3')		SB-7 (5')		SB-7 (10')		SB-8 (0')		SB-8 (3')	
	Depth:	0- ft		3- ft		5- ft		10- ft		0- ft		3- ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-31-10 09:21		Aug-31-10 09:24		Aug-31-10 09:27		Aug-31-10 09:30		Aug-31-10 10:18		Aug-31-10 10:21	
Anions by E300	*Extracted:*												
	Analyzed:	Aug-31-10 16:14		Aug-31-10 16:14		Aug-31-10 16:14		Aug-31-10 16:14		Aug-31-10 16:14		Aug-31-10 16:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		21.2	4.48	14.6	4.55	10.9	4.43	62.2	4.33	1460	23.4	456	9.01
Percent Moisture	*Extracted:*												
	Analyzed:	Aug-31-10 17:00		Aug-31-10 17:00		Aug-31-10 17:00		Aug-31-10 17:00		Aug-31-10 17:00		Aug-31-10 17:00	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.29	1.00	7.74	1.00	5.18	1.00	3.06	1.00	10.1	1.00	6.74	1.00
TPH By SW8015 Mod	*Extracted:*	Aug-31-10 15:00		Aug-31-10 15:00		Aug-31-10 15:00				Aug-31-10 15:00		Aug-31-10 15:00	
	Analyzed:	Aug-31-10 18:55		Aug-31-10 19:15		Aug-31-10 19:35				Aug-31-10 19:54		Aug-31-10 20:14	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL			mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.0	ND	15.1	ND	15.1			ND	15.1	ND	14.9
C12-C28 Diesel Range Hydrocarbons		43.9	15.0	ND	15.1	ND	15.1			ND	15.1	ND	14.9
C28-C35 Oil Range Hydrocarbons		ND	15.0	ND	15.1	ND	15.1			ND	15.1	ND	14.9
Total TPH		43.9	15.0	ND	15.1	ND	15.1			ND	15.1	ND	14.9

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

Certificate of Analysis Summary 387898

Larson & Associates, Midland, TX

Project Name: State BD Well # 3

Project Id: 10-0115
Contact: Michelle Green
Project Location:

Date Received in Lab: Tue Aug-31-10 03:00 pm
Report Date: 01-SEP-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	387898-007		387898-008									
	Field Id:	SB-8 (5')		SB-8 (10')									
	Depth:	5- ft		10- ft									
	Matrix:	SOIL		SOIL									
	Sampled:	Aug-31-10 10:24		Aug-31-10 10:27									
Anions by E300	***Extracted:***												
	Analyzed:	Aug-31-10 16:14		Aug-31-10 16:14									
	Units/RL:	mg/kg	RL	mg/kg	RL								
Chloride		731	9.12	16.5	4.66								
Percent Moisture	***Extracted:***												
	Analyzed:	Aug-31-10 17:00		Aug-31-10 17:00									
	Units/RL:	%	RL	%	RL								
Percent Moisture		7.91	1.00	9.96	1.00								
TPH By SW8015 Mod	***Extracted:***	Aug-31-10 15:00											
	Analyzed:	Aug-31-10 20:33											
	Units/RL:	mg/kg	RL										
C6-C12 Gasoline Range Hydrocarbons		ND	15.0										
C12-C28 Diesel Range Hydrocarbons		ND	15.0										
C28-C35 Oil Range Hydrocarbons		ND	15.0										
Total TPH		ND	15.0										

Brent Barron, II
Odessa Laboratory Manager

Final 1.000

XENCO Laboratories

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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 and above the SQL.

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.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well # 3

Work Orders : 387898,

Project ID: 10-0115

Lab Batch #: 821178 **Sample:** 572179-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/31/10 16:36

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.1	99.6	86	70-135	
o-Terphenyl	48.8	49.8	98	70-135	

Lab Batch #: 821178 **Sample:** 572179-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/31/10 16:56

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.4	100	87	70-135	
o-Terphenyl	52.9	50.2	105	70-135	

Lab Batch #: 821178 **Sample:** 572179-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/31/10 17:16

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.7	100	86	70-135	
o-Terphenyl	44.2	50.2	88	70-135	

Lab Batch #: 821178 **Sample:** 387898-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 18:55

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.3	99.9	88	70-135	
o-Terphenyl	45.6	50.0	91	70-135	

Lab Batch #: 821178 **Sample:** 387898-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 19:15

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.4	101	88	70-135	
o-Terphenyl	45.6	50.3	91	70-135	

* Surrogate outside of Laboratory QC limits

** 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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well # 3

Work Orders : 387898,

Project ID: 10-0115

Lab Batch #: 821178 **Sample:** 387898-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 19:35

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.9	100	86	70-135	
o-Terphenyl	44.0	50.2	88	70-135	

Lab Batch #: 821178 **Sample:** 387898-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 19:54

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.3	101	86	70-135	
o-Terphenyl	45.4	50.3	90	70-135	

Lab Batch #: 821178 **Sample:** 387898-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 20:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.2	99.5	86	70-135	
o-Terphenyl	43.2	49.8	87	70-135	

Lab Batch #: 821178 **Sample:** 387898-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 20:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	99.9	88	70-135	
o-Terphenyl	44.9	50.0	90	70-135	

Lab Batch #: 821178 **Sample:** 387883-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 20:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.2	100	87	70-135	
o-Terphenyl	46.7	50.2	93	70-135	

* Surrogate outside of Laboratory QC limits
** 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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well # 3

Work Orders : 387898,

Project ID: 10-0115

Lab Batch #: 821178 **Sample:** 387883-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/10 21:13

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	85.5	100	86	70-135	
o-Terphenyl	55.2	50.1	110	70-135	

* Surrogate outside of Laboratory QC limits

** 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.

XENCO Laboratories

BS / BSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: State BD Well # 3

Work Order #: 387898 **Project ID:** 10-0115

Analyst: LATCOR **Date Prepared:** 08/31/2010 **Date Analyzed:** 08/31/2010

Lab Batch ID: 821225 **Sample:** 821225-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300 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
Chloride	ND	10.0	9.57	96	10	9.53	95	0	75-125	20	

Analyst: BEV **Date Prepared:** 08/31/2010 **Date Analyzed:** 08/31/2010

Lab Batch ID: 821178 **Sample:** 572179-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
C6-C12 Gasoline Range Hydrocarbons	ND	996	1030	103	1000	1050	105	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	996	967	97	1000	996	100	3	70-135	35	

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: State BD Well # 3

Work Order #: 387898
Lab Batch #: 821225
Project ID: 10-0115
Date Analyzed: 08/31/2010
Date Prepared: 08/31/2010
Analyst: LATCOR
QC- Sample ID: 387828-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

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	7.26	105	103	91	75-125	

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

XENCO Laboratories

Form 3 - MS / MSD Recoveries

Project Name: State BD Well # 3

Work Order # 387898 **Project ID:** 10-0115

Lab Batch ID: 821178 **QC- Sample ID:** 387883-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/31/2010 **Date Prepared:** 08/31/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod 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
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1040	104	1000	1010	101	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	1010	101	1000	956	96	5	70-135	35	

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

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

Final 1.000

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: State BD Well # 3

Work Order #: 387898

Lab Batch #: 821225 **Project ID:** 10-0115

Date Analyzed: 08/31/2010 **Date Prepared:** 08/31/2010 **Analyst:** LATCOR

QC- Sample ID: 387828-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	7.26	ND	NC	20	

Lab Batch #: 821188

Date Analyzed: 08/31/2010 **Date Prepared:** 08/31/2010 **Analyst:** JLG

QC- Sample ID: 387883-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture	SAMPLE / SAMPLE DUPLICATE RECOVERY				
Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	13.2	14.2	7	20	

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

Final 1.000

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

DATE: 8/31/10 PAGE 1 OF 1
PO #: _____ LAB WORK ORDER #: _____
PROJECT LOCATION OR NAME: State BD Well #3
LAI PROJECT #: 10-0115 COLLECTOR: JMF
Data Reported to: Michelle Green

TRRP report? ☐ Yes ☒ No
TIME ZONE: Time zone/State: MDT/NM
S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER
387892

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐ / TRPH 418.1 ☐ / TPH 1005 ☐ / TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐	PAH 8270 ☐ / HOLDPAH ☐	8081 PESTICIDES ☐ / 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ / TCLP VOC ☐	TCLP - PEST ☐ / HERB ☐ / Semi-VOC ☐	TOTAL METALS (RCRA) ☐ / OTHER LIST ☐	LEAD - TOTAL ☐ / D.W. 200.8 ☐ / TCLP ☐	RCI ☐ / TOX ☐ / FLASHPOINT ☐	TDS ☐ / TSS ☐ / % MOISTURE ☐ / CYANIDE ☐	pH ☐ / HEXAVALENT CHROMIUM ☐ / PECHLORATE ☐	EXPLOSIVES ☐ / ANIONS ☐ / ALKALINITY ☐	CHLORIDE ✓	FIELD NOTES
SB-7 (0')	01	8/31/10	0921	S	1				✓			✓	✓																✓	
SB-7 (3')	02	8/31/10	0924	S	1				✓			✓	✓																✓	
SB-7 (5')	03	8/31/10	0927	S	1				✓			✓	✓																✓	
SB-7 (10')	04	8/31/10	0930	S	1				✓																				✓	
SB-8 (0')	05	8/31/10	1018	S	1				✓			✓	✓																✓	
SB-8 (3')	06	8/31/10	1021	S	1				✓			✓	✓																✓	
SB-8 (5')	07	8/31/10	1024	S	1				✓			✓	✓																✓	
SB-8 (10')	08	8/31/10	1027	S	1				✓																				✓	
SB-8 (15')	09	8/31/10	1030	S	1				✓																				✓	Hold
TOTAL					9																									

RELINQUISHED BY:(Signature) Jack Ivy DATE/TIME 8/31/10 1500 RECEIVED BY: (Signature) Andrea Elam 8.31.10 15:00
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY:
RECEIVING TEMP: 5.1 THERM #: A7
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☒ NOT USED
☐ CARRIER BILL # _____
☒ HAND DELIVERED 907 glass

XENCO Laboratories

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: Larson & Assoc.
Date/Time: 8.31.10 15:00
Lab ID # : 387898
Initials: AE

Sample Receipt Checklist

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

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	5.1 °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

Analytical Report 384564

for

Larson & Associates

Project Manager: Michelle Green

State BD Well #3

10-0115

19-AUG-10

Celebrating 20 Years of commitment to excellence in Environmental Testing Services

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-10-6-TX), Arizona (AZ0738), 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-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)
Xenco-Boca Raton (EPA Lab Code: FL00449):
Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

XENCO Laboratories

ACCREDITED IN ACCORDANCE WITH nelac

19-AUG-10

Project Manager: **Michelle Green**
Larson & Associates
P.O. Box 50685
Midland, TX 79710

Reference: XENCO Report No: **384564**
State BD Well #3
Project Address: .

Michelle Green:

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 384564. 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. 384564 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

XENCO Laboratories

Sample Cross Reference 384564

Larson & Associates, Midland, TX

State BD Well #3

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SB-1 (0')	S	Aug-03-10 09:56	0	384564-001
SB-1 (5')	S	Aug-03-10 10:02	5	384564-002
SB-1 (10')	S	Aug-03-10 10:05	10	384564-003
SB-5 (0')	S	Aug-03-10 11:13	0	384564-004
SB-5 (3')	S	Aug-03-10 11:16	3	384564-005
SB-5 (5')	S	Aug-03-10 11:19	5	384564-006
SB-5 (10')	S	Aug-03-10 11:22	10	384564-007
SB-6 (0')	S	Aug-03-10 12:37	0	384564-009
SB-6 (5')	S	Aug-03-10 12:40	5	384564-010
SB-6 (10')	S	Aug-03-10 12:43	10	384564-011
SB-6 (15')	S	Aug-03-10 12:46	15	384564-012
SB-4 (0')	S	Aug-03-10 14:34	0	384564-014
SB-4 (5')	S	Aug-03-10 14:37	5	384564-015
SB-4 (10')	S	Aug-03-10 14:40	10	384564-016
SB-4 (15')	S	Aug-03-10 14:43	15	384564-017
SB-4 (20')	S	Aug-03-10 14:46	20	384564-018
SB-4 (25')	S	Aug-03-10 15:30	25	384564-019
SB-3 (0')	S	Aug-04-10 09:18	0	384564-020
SB-3 (3')	S	Aug-04-10 09:21	3	384564-021
SB-3 (5')	S	Aug-04-10 09:24	5	384564-022
SB-3 (10')	S	Aug-04-10 09:27	10	384564-023
SB-3 (15')	S	Aug-04-10 09:30	15	384564-024
SB-3 (20')	S	Aug-04-10 09:34	20	384564-025
SB-3 (25')	S	Aug-04-10 10:05	25	384564-026
SB-3 (30')	S	Aug-04-10 10:08	30	384564-027
SB-3 (40')	S	Aug-04-10 10:58	40	384564-028
SB-2 (0')	S	Aug-04-10 12:04	0	384564-029
SB-2 (3')	S	Aug-04-10 12:07	3	384564-030
SB-2 (5')	S	Aug-04-10 12:11	5	384564-031
SB-2 (10')	S	Aug-04-10 12:17	10	384564-032
SB-2 (15')	S	Aug-04-10 12:24	15	384564-033
SB-2 (20')	S	Aug-04-10 12:28	20	384564-034
SB-2 (30')	S	Aug-04-10 12:48	30	384564-035
SB-2 (40')	S	Aug-04-10 12:53	40 ft	384564-036

CASE NARRATIVE

XENCO Laboratories

Client Name: Larson & Associates
Project Name: State BD Well #3

ACCREDITED IN ACCORDANCE WITH nelac

Project ID: 10-0115
Work Order Number: 384564

Report Date: 19-AUG-10
Date Received: 08/06/2010

Sample receipt non conformances and Comments:
None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-817871 Percent Moisture
None

Batch: LBA-817872 Percent Moisture
None

Batch: LBA-817882 TPH By SW8015 Mod
None

Batch: LBA-818185 Inorganic Anions by EPA 300/300.1
None

Batch: LBA-818301 Inorganic Anions by EPA 300/300.1
None

Batch: LBA-818519 Percent Moisture
None

Batch: LBA-818867 Inorganic Anions by EPA 300/300.1
None

Batch: LBA-819116 TPH By SW8015 Mod
SW8015MOD_NM

Batch 819116, C12-C28 Diesel Range Hydrocarbons recovered below QC limits in the Matrix Spike Duplicate.
Samples affected are: 384564-024, -025, -023, -026.
The Laboratory Control Sample for C12-C28 Diesel Range Hydrocarbons is within laboratory Control Limits

Certificate of Analysis Summary 384564

Larson & Associates, Midland, TX

Project Name: State BD Well #3

Project Id: 10-0115
Contact: Michelle Green
Project Location: .

Date Received in Lab: Fri Aug-06-10 08:12 am
Report Date: 19-AUG-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	384564-001		384564-002		384564-003		384564-004		384564-005		384564-006	
	Field Id:	SB-1 (0')		SB-1 (5')		SB-1 (10')		SB-5 (0')		SB-5 (3')		SB-5 (5')	
	Depth:	0-		5-		10-		0-		3-		5-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-03-10 09:56		Aug-03-10 10:02		Aug-03-10 10:05		Aug-03-10 11:13		Aug-03-10 11:16		Aug-03-10 11:19	
Inorganic Anions by EPA 300/300.1	*Extracted:*												
	Analyzed:	Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		ND	7.23	91.3	5.28	9.62	5.62	6.91	5.25	ND	5.35	28.1	5.61
Percent Moisture	*Extracted:*												
	Analyzed:	Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		30.8	1.00	5.25	1.00	11.0	1.00	4.81	1.00	6.47	1.00	10.9	1.00
TPH By SW8015 Mod	*Extracted:*	Aug-06-10 13:15		Aug-06-10 13:15				Aug-06-10 13:15		Aug-06-10 13:15		Aug-06-10 13:15	
	Analyzed:	Aug-06-10 23:57		Aug-07-10 00:17				Aug-07-10 00:37		Aug-07-10 00:56		Aug-07-10 01:16	
	Units/RL:	mg/kg	RL	mg/kg	RL			mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	21.6	ND	15.8			ND	15.8	ND	16.0	ND	16.8
C12-C28 Diesel Range Hydrocarbons		ND	21.6	ND	15.8			ND	15.8	ND	16.0	ND	16.8
C28-C35 Oil Range Hydrocarbons		ND	21.6	ND	15.8			ND	15.8	ND	16.0	ND	16.8
Total TPH		ND	21.6	ND	15.8			ND	15.8	ND	16.0	ND	16.8

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

Certificate of Analysis Summary 384564

Larson & Associates, Midland, TX

Project Name: State BD Well #3

Project Id: 10-0115
Contact: Michelle Green
Project Location: .

Date Received in Lab: Fri Aug-06-10 08:12 am
Report Date: 19-AUG-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	384564-007		384564-009		384564-010		384564-011		384564-012		384564-014	
	Field Id:	SB-5 (10')		SB-6 (0')		SB-6 (5')		SB-6 (10')		SB-6 (15')		SB-4 (0')	
	Depth:	10-		0-		5-		10-		15-		0-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-03-10 11:22		Aug-03-10 12:37		Aug-03-10 12:40		Aug-03-10 12:43		Aug-03-10 12:46		Aug-03-10 14:34	
Inorganic Anions by EPA 300/300.1	***Extracted:***												
	Analyzed:	Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		28.2	5.33	ND	5.48	ND	6.30	9.71	6.31	ND	6.66	186	5.65
Percent Moisture	***Extracted:***												
	Analyzed:	Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		6.21	1.00	8.77	1.00	20.6	1.00	20.8	1.00	24.9	1.00	11.5	1.00
TPH By SW8015 Mod	***Extracted:***			Aug-06-10 13:15		Aug-06-10 13:15						Aug-06-10 13:15	
	Analyzed:			Aug-07-10 01:36		Aug-07-10 01:55						Aug-07-10 02:35	
	Units/RL:			mg/kg	RL	mg/kg	RL					mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons				ND	16.4	ND	18.9					ND	17.0
C12-C28 Diesel Range Hydrocarbons				ND	16.4	ND	18.9					ND	17.0
C28-C35 Oil Range Hydrocarbons				ND	16.4	ND	18.9					ND	17.0
Total TPH				ND	16.4	ND	18.9					ND	17.0

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 384564

Larson & Associates, Midland, TX

Project Name: State BD Well #3

Project Id: 10-0115
Contact: Michelle Green
Project Location: .

Date Received in Lab: Fri Aug-06-10 08:12 am
Report Date: 19-AUG-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	384564-015		384564-016		384564-017		384564-018		384564-019		384564-020	
	Field Id:	SB-4 (5')		SB-4 (10')		SB-4 (15')		SB-4 (20')		SB-4 (25')		SB-3 (0')	
	Depth:	5-		10-		15-		20-		25-		0-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-03-10 14:37		Aug-03-10 14:40		Aug-03-10 14:43		Aug-03-10 14:46		Aug-03-10 15:30		Aug-04-10 09:18	
Inorganic Anions by EPA 300/300.1	***Extracted:***												
	Analyzed:	Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-13-10 09:15		Aug-10-10 00:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		796	11.3	699	11.4	374	11.2	476	11.4	188	5.64	603	29.7
Percent Moisture	***Extracted:***												
	Analyzed:	Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-12-10 08:52		Aug-07-10 09:24	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		11.5	1.00	12.5	1.00	10.6	1.00	12.4	1.00	11.4	1.00	15.7	1.00
TPH By SW8015 Mod	***Extracted:***	Aug-06-10 13:15										Aug-06-10 13:15	
	Analyzed:	Aug-07-10 02:55										Aug-07-10 03:14	
	Units/RL:	mg/kg	RL									mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	17.0									ND	17.8
C12-C28 Diesel Range Hydrocarbons		ND	17.0									45.4	17.8
C28-C35 Oil Range Hydrocarbons		ND	17.0									ND	17.8
Total TPH		ND	17.0									45.4	17.8

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 384564

Larson & Associates, Midland, TX

Project Name: State BD Well #3

Project Id: 10-0115
Contact: Michelle Green
Project Location: .

Date Received in Lab: Fri Aug-06-10 08:12 am
Report Date: 19-AUG-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	384564-021		384564-022		384564-023		384564-024		384564-025		384564-026	
	Field Id:	SB-3 (3')		SB-3 (5')		SB-3 (10')		SB-3 (15')		SB-3 (20')		SB-3 (25')	
	Depth:	3-		5-		10-		15-		20-		25-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-04-10 09:21		Aug-04-10 09:24		Aug-04-10 09:27		Aug-04-10 09:30		Aug-04-10 09:34		Aug-04-10 10:05	
Inorganic Anions by EPA 300/300.1	***Extracted:***												
	Analyzed:	Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 00:58		Aug-10-10 09:27		Aug-10-10 09:27		Aug-10-10 09:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		556	21.2	4040	110	12900	218	3650	109	2270	55.5	1720	52.7
Percent Moisture	***Extracted:***												
	Analyzed:	Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.86	1.00	8.78	1.00	8.42	1.00	8.50	1.00	9.97	1.00	5.10	1.00
TPH By SW8015 Mod	***Extracted:***	Aug-06-10 13:15		Aug-06-10 13:15		Aug-16-10 14:15		Aug-16-10 14:15		Aug-16-10 14:15		Aug-16-10 14:15	
	Analyzed:	Aug-07-10 03:33		Aug-07-10 03:53		Aug-16-10 17:45		Aug-16-10 18:05		Aug-16-10 18:25		Aug-16-10 18:45	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	15.9	341	16.4	83.2	16.4	ND	16.4	ND	16.7	ND	15.8
C12-C28 Diesel Range Hydrocarbons		70.2	15.9	2780	16.4	470	16.4	ND	16.4	ND	16.7	ND	15.8
C28-C35 Oil Range Hydrocarbons		ND	15.9	50.6	16.4	ND	16.4	ND	16.4	ND	16.7	ND	15.8
Total TPH		70.2	15.9	3172	16.4	553	16.4	ND	16.4	ND	16.7	ND	15.8

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 384564

Larson & Associates, Midland, TX

Project Name: State BD Well #3

Project Id: 10-0115
Contact: Michelle Green
Project Location: .

Date Received in Lab: Fri Aug-06-10 08:12 am
Report Date: 19-AUG-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	384564-027		384564-028		384564-029		384564-030		384564-031		384564-032	
	Field Id:	SB-3 (30')		SB-3 (40')		SB-2 (0')		SB-2 (3')		SB-2 (5')		SB-2 (10')	
	Depth:	30-		40-		0-		3-		5-		10-	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-04-10 10:08		Aug-04-10 10:58		Aug-04-10 12:04		Aug-04-10 12:07		Aug-04-10 12:11		Aug-04-10 12:17	
Inorganic Anions by EPA 300/300.1	*Extracted:*												
	Analyzed:	Aug-10-10 09:27		Aug-10-10 09:27		Aug-10-10 09:27		Aug-10-10 09:27		Aug-10-10 09:27		Aug-10-10 09:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1390	26.4	424	11.3	957	22.1	1330	27.6	901	22.0	673	11.3
Percent Moisture	*Extracted:*												
	Analyzed:	Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		5.14	1.00	11.5	1.00	9.47	1.00	9.27	1.00	8.92	1.00	11.5	1.00
TPH By SW8015 Mod	*Extracted:*					Aug-06-10 13:15		Aug-06-10 13:15		Aug-06-10 13:15			
	Analyzed:					Aug-07-10 04:53		Aug-07-10 05:12		Aug-07-10 05:33			
	Units/RL:					mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons						ND	16.7	ND	16.6	ND	16.5		
C12-C28 Diesel Range Hydrocarbons						ND	16.7	ND	16.6	ND	16.5		
C28-C35 Oil Range Hydrocarbons						ND	16.7	ND	16.6	ND	16.5		
Total TPH						ND	16.7	ND	16.6	ND	16.5		

Brent Barron, II
Odessa Laboratory Manager

Certificate of Analysis Summary 384564

Larson & Associates, Midland, TX

Project Name: State BD Well #3

Project Id: 10-0115
Contact: Michelle Green
Project Location: .

Date Received in Lab: Fri Aug-06-10 08:12 am
Report Date: 19-AUG-10
Project Manager: Brent Barron, II

Analysis Requested													
	Lab Id:	384564-033		384564-034		384564-035		384564-036					
	Field Id:	SB-2 (15')		SB-2 (20')		SB-2 (30')		SB-2 (40')					
	Depth:	15-		20-		30-		40- ft					
	Matrix:	SOIL		SOIL		SOIL		SOIL					
	Sampled:	Aug-04-10 12:24		Aug-04-10 12:28		Aug-04-10 12:48		Aug-04-10 12:53					
Inorganic Anions by EPA 300/300.1	***Extracted:***												
	Analyzed:	Aug-10-10 09:27		Aug-10-10 09:27		Aug-10-10 09:27		Aug-10-10 09:27					
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL				
Chloride		868	22.5	501	10.8	363	10.8	316	11.4				
Percent Moisture	***Extracted:***												
	Analyzed:	Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24		Aug-07-10 09:24					
	Units/RL:	%	RL	%	RL	%	RL	%	RL				
Percent Moisture		11.2	1.00	7.26	1.00	7.75	1.00	12.1	1.00				

Brent Barron, II
Odessa Laboratory Manager

XENCO Laboratories

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 and above the SQL.

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.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit

PQL Practical Quantitation Limit

* Outside XENCO's scope of NELAC Accreditation.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well #3

Work Orders : 384564,

Project ID: 10-0115

Lab Batch #: 817882 **Sample:** 570025-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/06/10 21:59

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	63.9	50.0	128	70-135	

Lab Batch #: 817882 **Sample:** 570025-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/06/10 22:19

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	57.0	50.2	114	70-135	

Lab Batch #: 817882 **Sample:** 570025-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/06/10 22:39

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	57.2	50.1	114	70-135	

Lab Batch #: 817882 **Sample:** 384564-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/06/10 23:57

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.6	107	70-135	
o-Terphenyl	55.7	49.8	112	70-135	

Lab Batch #: 817882 **Sample:** 384564-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 00:17

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	55.3	50.0	111	70-135	

* Surrogate outside of Laboratory QC limits

** 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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well #3

Work Orders : 384564,

Project ID: 10-0115

Lab Batch #: 817882 **Sample:** 384564-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 00:37

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	55.7	50.1	111	70-135	

Lab Batch #: 817882 **Sample:** 384564-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 00:56

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	54.7	50.0	109	70-135	

Lab Batch #: 817882 **Sample:** 384564-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 01:16

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	56.0	49.9	112	70-135	

Lab Batch #: 817882 **Sample:** 384564-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 01:36

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.9	109	70-135	
o-Terphenyl	57.3	50.0	115	70-135	

Lab Batch #: 817882 **Sample:** 384564-010 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 01:55

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	143	200	72	70-135	
o-Terphenyl	78.2	99.8	78	70-135	

* Surrogate outside of Laboratory QC limits

** 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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well #3

Work Orders : 384564,

Project ID: 10-0115

Lab Batch #: 817882 **Sample:** 384564-014 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 02:35

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	55.0	50.1	110	70-135	

Lab Batch #: 817882 **Sample:** 384564-015 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 02:55

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	57.3	50.2	114	70-135	

Lab Batch #: 817882 **Sample:** 384564-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 03:14

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	56.9	50.0	114	70-135	

Lab Batch #: 817882 **Sample:** 384564-021 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 03:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.6	107	70-135	
o-Terphenyl	55.7	49.8	112	70-135	

Lab Batch #: 817882 **Sample:** 384564-022 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 03:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.8	112	70-135	
o-Terphenyl	55.3	49.9	111	70-135	

* Surrogate outside of Laboratory QC limits
** 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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well #3

Work Orders : 384564,

Project ID: 10-0115

Lab Batch #: 817882 **Sample:** 384564-029 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 04:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	101	110	70-135	
o-Terphenyl	58.3	50.3	116	70-135	

Lab Batch #: 817882 **Sample:** 384564-030 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 05:12

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	57.3	50.2	114	70-135	

Lab Batch #: 817882 **Sample:** 384564-031 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 05:33

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.9	107	70-135	
o-Terphenyl	56.0	50.0	112	70-135	

Lab Batch #: 817882 **Sample:** 384564-004 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 05:53

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	125	100	125	70-135	
o-Terphenyl	47.7	50.2	95	70-135	

Lab Batch #: 817882 **Sample:** 384564-004 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/07/10 06:12

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	101	123	70-135	
o-Terphenyl	56.0	50.3	111	70-135	

* Surrogate outside of Laboratory QC limits

** 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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well #3

Work Orders : 384564,

Project ID: 10-0115

Lab Batch #: 819116 **Sample:** 570758-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/16/10 16:03

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	100	93	70-135	
o-Terphenyl	55.7	50.2	111	70-135	

Lab Batch #: 819116 **Sample:** 570758-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/16/10 16:24

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	54.6	50.2	109	70-135	

Lab Batch #: 819116 **Sample:** 570758-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/16/10 16:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.3	100	93	70-135	
o-Terphenyl	48.1	50.2	96	70-135	

Lab Batch #: 819116 **Sample:** 384564-023 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/16/10 17:45

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.7	100	74	70-135	
o-Terphenyl	43.9	50.0	88	70-135	

Lab Batch #: 819116 **Sample:** 384564-024 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/16/10 18:05

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.5	100	71	70-135	
o-Terphenyl	35.9	50.2	72	70-135	

* Surrogate outside of Laboratory QC limits
** 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.

XENCO Laboratories

Form 2 - Surrogate Recoveries

Project Name: State BD Well #3

Work Orders : 384564,

Project ID: 10-0115

Lab Batch #: 819116 **Sample:** 384564-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/16/10 18:25

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.7	100	73	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 819116 **Sample:** 384564-026 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/16/10 18:45

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.5	100	71	70-135	
o-Terphenyl	35.9	50.0	72	70-135	

Lab Batch #: 819116 **Sample:** 384564-023 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/16/10 19:05

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.8	100	75	70-135	
o-Terphenyl	36.4	50.0	73	70-135	

Lab Batch #: 819116 **Sample:** 384564-023 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/17/10 10:15

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.2	100	79	70-135	
o-Terphenyl	45.6	50.2	91	70-135	

* Surrogate outside of Laboratory QC limits
** 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.

XENCO Laboratories

BS / BSD Recoveries

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: State BD Well #3

Work Order #: 384564 **Project ID:** 10-0115

Analyst: LATCOR **Date Prepared:** 08/10/2010 **Date Analyzed:** 08/10/2010

Lab Batch ID: 818185 **Sample:** 818185-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	ND	10.0	8.77	88	10	8.82	88	1	80-120	20	

Analyst: LATCOR **Date Prepared:** 08/10/2010 **Date Analyzed:** 08/10/2010

Lab Batch ID: 818301 **Sample:** 818301-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	ND	10.0	9.37	94	10	9.41	94	0	80-120	20	

Analyst: LATCOR **Date Prepared:** 08/13/2010 **Date Analyzed:** 08/13/2010

Lab Batch ID: 818867 **Sample:** 818867-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 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
Chloride	ND	10.0	8.95	90	10	9.99	100	11	80-120	20	

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

XENCO Laboratories

BS / BSD Recoveries

Project Name: State BD Well #3

Work Order #: 384564 **Project ID:** 10-0115

Analyst: BEV **Date Prepared:** 08/06/2010 **Date Analyzed:** 08/06/2010

Lab Batch ID: 817882 **Sample:** 570025-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1070	107	1000	1120	112	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	877	88	1000	1000	100	13	70-135	35	

Analyst: BEV **Date Prepared:** 08/16/2010 **Date Analyzed:** 08/16/2010

Lab Batch ID: 819116 **Sample:** 570758-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod 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
C6-C12 Gasoline Range Hydrocarbons	ND	1000	ND	0	1000	1200	120	NC	70-135	35	LF
C12-C28 Diesel Range Hydrocarbons	ND	1000	998	100	1000	1030	103	3	70-135	35	

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

XENCO Laboratories

Form 3 - MS Recoveries

Project Name: State BD Well #3

Work Order #: 384564

Lab Batch #: 818185 **Project ID:** 10-0115

Date Analyzed: 08/10/2010 **Date Prepared:** 08/10/2010 **Analyst:** LATCOR

QC- Sample ID: 384564-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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	ND	145	144	99	80-120	

Lab Batch #: 818301

Date Analyzed: 08/10/2010 **Date Prepared:** 08/10/2010 **Analyst:** LATCOR

QC- Sample ID: 384564-024 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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	3650	2190	5800	98	80-120	

Lab Batch #: 818867

Date Analyzed: 08/13/2010 **Date Prepared:** 08/13/2010 **Analyst:** LATCOR

QC- Sample ID: 384564-019 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

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	188	113	292	92	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

Form 3 - MS / MSD Recoveries

Project Name: State BD Well #3

Work Order # : 384564 **Project ID:** 10-0115

Lab Batch ID: 817882 **QC- Sample ID:** 384564-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/07/2010 **Date Prepared:** 08/06/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod 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
C6-C12 Gasoline Range Hydrocarbons	ND	1050	1130	108	1060	1120	106	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1050	956	91	1060	1030	97	7	70-135	35	

Lab Batch ID: 819116 **QC- Sample ID:** 384564-023 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/16/2010 **Date Prepared:** 08/16/2010 **Analyst:** BEV

Reporting Units: mg/kg

TPH By SW8015 Mod 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
C6-C12 Gasoline Range Hydrocarbons	83.2	1090	1240	106	1100	1280	109	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	470	1090	1260	72	1100	1090	56	14	70-135	35	X

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

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

XENCO Laboratories

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: State BD Well #3

Work Order #: 384564

Lab Batch #: 818185 **Project ID:** 10-0115
Date Analyzed: 08/10/2010 **Date Prepared:** 08/10/2010 **Analyst:** LATCOR
QC- Sample ID: 384564-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	ND	ND	NC	20	

Lab Batch #: 818301
Date Analyzed: 08/10/2010 **Date Prepared:** 08/10/2010 **Analyst:** LATCOR
QC- Sample ID: 384564-024 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	3650	3720	2	20	

Lab Batch #: 818867
Date Analyzed: 08/13/2010 **Date Prepared:** 08/13/2010 **Analyst:** LATCOR
QC- Sample ID: 384564-019 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: mg/kg

Inorganic Anions by EPA 300/300.1 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	188	187	1	20	

Lab Batch #: 817871
Date Analyzed: 08/07/2010 **Date Prepared:** 08/07/2010 **Analyst:** JLG
QC- Sample ID: 384538-001 D **Batch #:** 1 **Matrix:** Soil
Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	9.30	9.69	4	20	

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

Sample Duplicate Recovery

ACCREDITED IN ACCORDANCE WITH nelac

Project Name: State BD Well #3

Work Order #: 384564

Lab Batch #: 817872 **Project ID:** 10-0115

Date Analyzed: 08/07/2010 **Date Prepared:** 08/07/2010 **Analyst:** JLG

QC- Sample ID: 384564-021 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.86	6.03	3	20	

Lab Batch #: 818519

Date Analyzed: 08/12/2010 **Date Prepared:** 08/12/2010 **Analyst:** JLG

QC- Sample ID: 385070-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

Percent Moisture Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	18.2	18.2	0	20	

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

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants
507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: Michelle Green

DATE: 8/4/2010 PAGE 1 OF 3
PO #: LAB WORK ORDER #: 384564
PROJECT LOCATION OR NAME: State BD Well #3
LAI PROJECT #: 10-0115 COLLECTOR: JMF

TRRP report? ☐ Yes ☒ No
TIME ZONE: Time zone/State: MDT/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

PRESERVATION: HCl | HNO_3 | H_2SO_4 ☐ NaOH ☐ | ICE | UNPRESERVED

ANALYSES: BTEX ☐ MTBE ☐ | TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐ | GASOLINE MOD 8015 ☒ | DIESEL - MOD 8015 ☒ | VOC 8260 ☐ | SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐ | 8081 PESTICIDES ☐ 8151 HERBICIDES ☐ | 8082 PCBS ☐ | TCLP - METALS (RCRA) ☐ TCLP VOC ☐ | TCLP - PEST ☐ HERB ☐ Semi-VOC ☐ | TOTAL METALS (RCRA) ☐ OTHER LIST ☐ | LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ | RCI ☐ TOX ☐ FLASHPOINT ☐ | TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ | pH ☐ HEXAVALENT CHROMIUM ☐ | EXPLOSIVES ☐ PECHLORATE ☐ | CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☒	DIESEL - MOD 8015 ☒	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☒ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
SB-1 (0')	-001	8/3/10	0956	S	1				✓			✓	✓														✓	
~~SB-1 (3')~~		~~8/3/10~~	~~0959~~	~~S~~	~~1~~				✓			✓	✓														✓	
SB-1 (5')	-002	8/3/10	1002	S	1				✓			✓	✓														✓	
SB-1 (10')	-003	8/3/10	1005	S	1				✓																		✓	
SB-5 (0')	-004	8/3/10	1113	S	1				✓			✓	✓														✓	
SB-5 (3')	-005	8/3/10	1116	S	1				✓			✓	✓														✓	
SB-5 (5')	-006	8/3/10	1119	S	1				✓			✓	✓														✓	
SB-5 (10')	-007	8/3/10	1122	S	1				✓																		✓	
SB-5 (15')	-008	8/3/10	1131	S	1				✓																		✓	Hold
SB-6 (0')	-009	8/3/10	1237	S	1				✓			✓	✓														✓	
SB-6 (5')	-010	8/3/10	1240	S	1				✓			✓	✓														✓	
SB-6 (10')	-011	8/3/10	1243	S	1				✓																		✓	
SB-6 (15')	-012	8/3/10	1246	S	1				✓																		✓	
SB-6 (20')	-013	8/3/10	1331	S	1				✓																		✓	Hold
TOTAL					13																							

RELINQUISHED BY:(Signature) DATE/TIME 8/6/10 0812 RECEIVED BY: (Signature) Amy Rodriguez 8/6/10 8:12
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)
RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☒
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: 902C-9.
RECEIVING TEMP: 2.6 THERM #:
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL #
☐ HAND DELIVERED

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: Michelle Green

DATE: 8/4/2010 PAGE 2 OF 3
PO #: _____ LAB WORK ORDER #: _____
PROJECT LOCATION OR NAME: State BO Well #3
LAI PROJECT #: 10-0115 COLLECTOR: JMF

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MDT/NM

S=SOIL P=PAINT
W=WATER SL=SLUDGE
A=AIR OT=OTHER

384564

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐	TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015 ☐	DIESEL - MOD 8015 ☐	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDES ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
SB-4 (0')	-014	8/3/10	1434	S	1				✓				✓	✓														✓	
SB-4 (5')	-015	8/3/10	1437	S	1				✓				✓	✓														✓	
SB-4 (10')	-016	8/3/10	1440	S	1				✓																			✓	
SB-4 (15')	-017	8/3/10	1443	S	1				✓																			✓	
SB-4 (20')	-018	8/3/10	1446	S	1				✓																			✓	
SB-4 (25')	-019	8/3/10	1530	S	1				✓																			✓	Hold
SB-3 (0')	-020	8/4/10	0918	S	1				✓				✓	✓														✓	
SB-3 (3')	-021	8/4/10	0921	S	1				✓				✓	✓														✓	
SB-3 (5')	-022	8/4/10	0924	S	1				✓				✓	✓														✓	
SB-3 (10')	-023	8/4/10	0927	S	1				✓				✓	✓														✓	
SB-3 (15')	-024	8/4/10	0930	S	1				✓				✓	✓														✓	
SB-3 (20')	-025	8/4/10	0934	S	1				✓																			✓	
SB-3 (25')	-026	8/4/10	1005	S	1				✓																			✓	
SB-3 (30')	-027	8/4/10	1008	S	1				✓																			✓	
SB-3 (40')	-028	8/4/10	1058	S	1				✓																			✓	
TOTAL					15																							

RELINQUISHED BY:(Signature) DATE/TIME 8/6/10 0812 RECEIVED BY: (Signature) Amy RQ. 8/6/10 08:12

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☐
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: 907 c.g.
RECEIVING TEMP: 2.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

CHAIN-OF-CUSTODY

Larson & Associates, Inc.
Environmental Consultants

507 N. Marienfeld, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to:

DATE: 8/4/2010 PAGE 3 OF 3
PO #: _____ LAB WORK ORDER #: _____
PROJECT LOCATION OR NAME: State BD Well #3
LAI PROJECT #: 10-0115 COLLECTOR: JNF

TRRP report? ☐ Yes ☒ No

TIME ZONE: Time zone/State: MDT/NM

S=SOIL W=WATER A=AIR P=PAINT SL=SLUDGE OT=OTHER

384564

Field Sample I.D.	Lab #	Date	Time	Matrix	# of Containers	PRESERVATION: HCl	HNO_3	H_2SO_4 ☐ NaOH ☐	ICE	UNPRESERVED	ANALYSES: BTEX ☐ MTBE ☐ TRPH 418.1 ☐ TPH 1005 ☐ TPH 1006 ☐	GASOLINE MOD 8015	DIESEL - MOD 8015	VOC 8260 ☐	SVOC 8270 ☐ PAH 8270 ☐ HOLDPAH ☐	8081 PESTICIDES ☐ 8151 HERBICIDES ☐	8082 PCBS ☐	TCLP - METALS (RCRA) ☐ TCLP VOC ☐	TCLP - PEST ☐ HERB ☐ Semi-VOC ☐	TOTAL METALS (RCRA) ☐ OTHER LIST ☐	LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐	RCI ☐ TOX ☐ FLASHPOINT ☐	TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐	pH ☐ HEXAVALENT CHROMIUM ☐	EXPLOSIVES ☐ PECHLORATE ☐	CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐	FIELD NOTES
SB-2 (0')	-029	8/4/10	1204	S	1				✓			✓	✓													✓	
SB-2 (5')	-030	8/4/10	1207	S	1				✓			✓	✓													✓	
SB-2 (5')	-031	8/4/10	1211	S	1				✓			✓	✓													✓	
SB-2 (10')	-032	8/4/10	1217	S	1				✓																	✓	
SB-2 (15')	-033	8/4/10	1224	S	1				✓																	✓	
SB-2 (20')	-034	8/4/10	1228	S	1				✓																	✓	
SB-2 (30')	-035	8/4/10	1248	S	1				✓																	✓	
SB-2 (40')	-036	8/4/10	1253	S	1				✓																	✓	
TOTAL					8																						

RELINQUISHED BY:(Signature) 8/4/10 DATE/TIME 0812 RECEIVED BY:(Signature) Amy RQ. 8/6/10 8:12

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY:(Signature)

RELINQUISHED BY:(Signature) DATE/TIME RECEIVED BY: (Signature)

TURN AROUND TIME
NORMAL ☐
1 DAY ☐
2 DAY ☐
OTHER ☐

LABORATORY USE ONLY: 907C9.
RECEIVING TEMP: 2.6 THERM #: _____
CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED
☐ CARRIER BILL # _____
☐ HAND DELIVERED

XENCO Laboratories	Document Title: Sample Receipt Checklist
Atlanta, Boca Raton, Corpus Christi, Dallas	Document No.: SYS-SRC
Houston, Miami, Odessa, Philadelphia	Revision/Date: No. 01, 5/27/2010
Phoenix, San Antonio, Tampa	Effective Date: 6/1/2010 Page 1 of 1

Prelogin / Nonconformance Report - Sample Log-In

Client: Larson + Associates

Date/Time: 8/6/10 8:12

Lab ID # : 384564

Initials: AS

Sample Receipt Checklist

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

18. Cooler 1 No.		Cooler 2 No.		Cooler 3 No.		Cooler 4 No.		Cooler 5 No.	
lbs	26 °C	lbs	°C	lbs	°C	lbs	°C	lbs	°C

Nonconformance Documentation

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

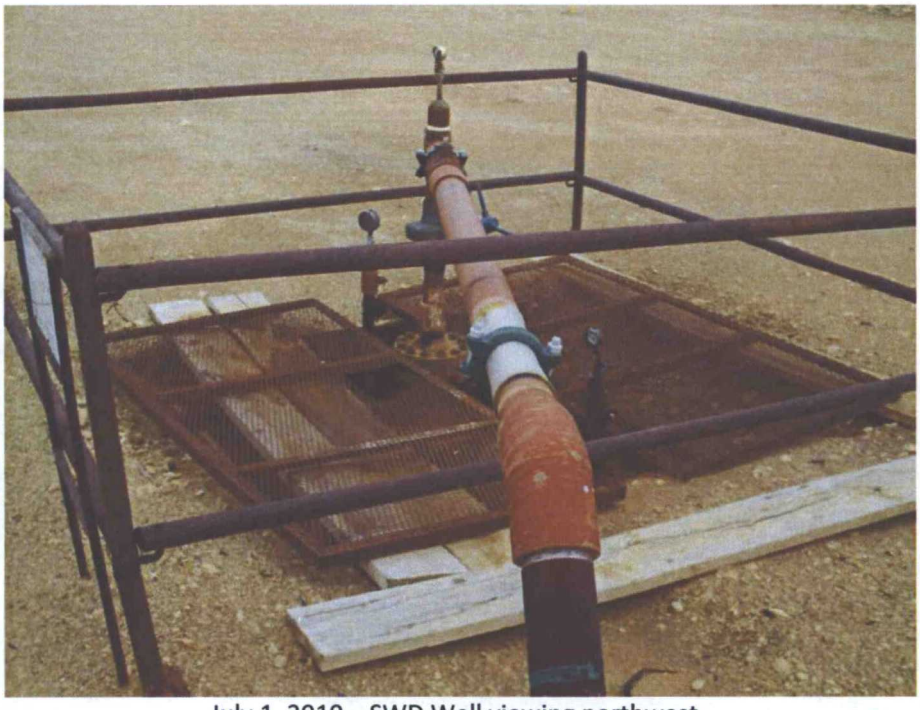
Regarding: _____

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

Photo Documentation

July 1, 2010 – West side of tank battery viewing north.



July 1, 2010 – SWD Well viewing northwest.

Photo Documentation

July 1, 2010 – Northeast of tank battery viewing north.

July 1, 2010 – Tank battery viewing south.

Photo Documentation

September 30, 2010 – View of Liner and backfill.

September 30, 2010 – View of excavation backfill.

Photo Documentation

September 30, 2010 – View of backfilled excavation.

Samson

Samson Plaza
Two West Second Street
Tulsa, Oklahoma 74103-3103
USA
918/591-1791

SENT VIA CERTIFIED MAIL

RECEIVED
JUN 25 2010
HOBBSOCD

June 21, 2010

State of New Mexico Energy Minerals and Natural Resources
District 1
Attn: Geoff Leking
1625 N. French Drive
Hobbs, NM 88240

Reference: Release Notification and Corrective Action
Operator: Samson Resources Company
Location: State BD #3
Section 2, T12S-R33E
Lea County, NM

Dear Mr. Leking:

Per the initial telephone notification to E. L. Gonzalez on 6/19/2010 at 10:50 a.m. and to you today at 3:30 p.m., please find attached a completed Form C-141 regarding the above referenced release.

Please recognize it is Samson's intent to operate in an environmentally responsible manner and to maintain compliance with applicable laws and regulations. I trust this information will satisfy any concerns the State of New Mexico Energy Minerals and Natural Resources may have regarding this incident. If you need additional information, please feel free to contact me at (918) 591-1364.

Thank you.

Sincerely,

Samson Resources Company

Autumn M. Long

Autumn Long
Environmental Specialist

AL:db

Attachments

Cc: Gerry Petree – Superintendent
Production Department

Mark Larson

From: Leking, Geoffrey R, EMNRD [GeoffreyR.Leking@state.nm.us]
Sent: Wednesday, August 25, 2010 2:22 PM
To: Mark Larson
Cc: Johnson, Larry, EMNRD; Autumn Long; John Fergerson
Subject: RE: 1RP #10-07-2575, Samson Resouces Company, State BD Well #3 Extension Request
Attachments: image001.jpg

Mark

The OCD grants an extension of two months until 11/08/2010 for the completion of the investigation and remediation of the State BD Well #3 site.

Geoffrey Leking
Environmental Engineer
NMOCD-Hobbs
1625 N. French Drive
Hobbs, NM 88240
Office: (575) 393-6161 Ext. 113
Cell: (575) 399-2990
email: geoffreyr.leking@state.nm.us

From: Mark Larson [mailto:Mark@laenvironmental.com]
Sent: Wednesday, August 25, 2010 10:38 AM
To: Leking, Geoffrey R, EMNRD
Cc: Johnson, Larry, EMNRD; Autumn Long; John Fergerson
Subject: Re: 1RP #10-07-2575, Samson Resouces Company, State BD Well #3 Extension Request

Dear Geoffrey,
This message is submitted to the New Mexico Oil Conservation Division (OCD) District 1 on behalf of Samson Resources Company (Samson) by Larson & Associates, Inc. (LAI), its consultant, to request an extension for 60 days from September 7, 2010, to complete the delineation and submit a remediation plan for a produced water spill that occurred at the referenced well located in Unit I (SW/4, NE/4), Section 2, Township 12 South, Range 33 East in Lea County, New Mexico. Samson reported the spill to the OCD on June 19, 2010. On August 3 and 4, 2010, LAI personnel collected soil samples from 6 borings (SB-1 through SB-6) but has determined that additional borings (SB-7 and SB-8) are necessary to complete the delineation. LAI is in communication with the drilling contractor to determine the next available rig date and will notify the OCD at least 48 hours prior to drilling the borings. The attached drawing shows the approximate locations for the proposed borings which will be drilled and soil samples collected according to the procedures presented in the document titled, *Preliminary Investigation Report*, dated July 16, 2010, and submitted to the OCD. Your consideration of this request is appreciated. Please contact Autumn Long with Samson at (918) 591-1364 or myself at (432) 687-0901, if you have questions.
Sincerely,

Mark J. Larson
Sr. Project Manager / President
507 N. Marienfeld St., Ste. 202
Midland, Texas 79701
(432) 687-0901 (office)

(432) 687-0456 (fax)
(432) 556-8656 (cell)
mark@laenvironmental.com

Larson & Associates, Inc.
Environmental Consultants
