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Effective Solutions

REMEDIATION SUMMARY &

SITE CLOSURE REQUEST

SOUTHERN UNION GAS SERVICES
6-INCH LATERAL EXXON MOBIL
Lea County, New Mexico
Unit Letter "D" (NW/NW), Section 2, Township 22 South, Range 37 East
Latitude 32° 25.341' North, Longitude 103° 08.405' West
NMOCD Reference #1RP-03-11-2690

Prepared For:

Southern Union Gas Services
801 S. Loop 464
Monahans, TX 79756

Prepared By:

Basin Environmental Service Technologies, LLC
3100 Plains Highway
Lovington, New Mexico 88260

April 2012

Ben J. Arguijo
Project Manager

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APPENDICES

1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of Southern Union Gas Services (Southern Union), has prepared this *Remediation Summary & Site Closure Request* for the release site known as 6-Inch Lateral Exxon Mobil. The legal description of the release site is Unit Letter "D" (NW/NW), Section 2, Township 22 South, Range 37 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32° 25.341' North latitude and 103° 08.405' West longitude. The property affected by the release is owned by the State of New Mexico and administered by the New Mexico State Land Office (NMSLO). A "Site Location Map" is provided as Figure 1.

On February 23, 2011, Southern Union discovered a release had occurred on the 6-inch (6") Lateral pipeline. The release occurred on a well pad operated by Exxon-Mobil. The release was reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office. The "Release Notification and Corrective Action" (Form C-141) indicated approximately seven barrels (7 bbls) of a mixture of natural gas, crude oil, and produced water was released, with no recovery. The release was attributed to internal corrosion. Following discovery of the release, a temporary pipeline clamp was employed to mitigate the release.

The release affected an area measuring approximately one thousand, five hundred square feet (1,500 ft^2). General photographs of the release site are provided as Appendix A. The Form C-141 is provided as Appendix D.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated information was unavailable for Section 2, Township 22 South, Range 37 East. A depth-to-groundwater reference map utilized by the NMOCD indicates groundwater should be encountered at approximately fifty-five feet (55') below ground surface (bgs). Based on the NMOCD ranking system, ten (10) points will be assigned to the site as a result of this criterion.

A search of the NMWRRS database indicated there are no water wells within 1,000 feet of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

There are no surface water bodies within 1,000 feet of the release. Based on the NMOCD ranking system, zero (0) points will be assigned to the site as a result of this criterion.

NMOCD guidelines indicate the 6-Inch Lateral Exxon Mobil release site has an initial ranking score of ten (10) points. The soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene – 10 mg/Kg (ppm)
- BTEX – 50 mg/Kg (ppm)
- TPH – 1,000 mg/Kg (ppm)

The New Mexico Administrative Code (NMAC) does not currently specify a remediation level for chloride concentrations in soil. Chloride remediation levels are set by the NMOCD on a site-specific basis.

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On August 29, 2011, following initial response activities, excavation of impacted soil commenced at the site. A Photo-Ionization Detector (PID) and Hach Quantab Chloride Low Range (30-600 mg/Kg) Titrators were used to field-screen the horizontal and vertical extent of impacted soil and to guide the excavation.

From August 29 through September 6, 2011, approximately five hundred and sixty-four cubic yards (564 yd^3) of impacted soil was excavated and transported to Sundance Services, Inc. (NMOCD Permit # NM-01003), for disposal. A representative selection of soil disposal manifests is provided as Appendix C.

On August 30, 2011, six (6) soil samples (RP @ 9' bgs, North Wall, South Wall, East Wall, West Wall, and Flowpath #1) were collected from the floor and sidewalls of the excavation. The samples were submitted to Xenco Laboratories, Inc., in Odessa, Texas, for analysis of benzene, ethylbenze, toluene, and xylene (BTEX), total petroleum hydrocarbons (TPH), and chloride concentrations using EPA Methods SW 846-8021b, SW 846-8015M, and 300.1, respectively. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". Soil sample locations are depicted in Figure 2, "Site & Sample Location Map". Laboratory analytical reports are provided as Appendix B.

Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory method detection limit (MDL) in all soil samples submitted. TPH concentrations ranged from less than the laboratory MDL in soil samples North Wall, South Wall, and Flowpath #1 to 41.1 mg/Kg in soil sample RP @ 9' bgs. Chloride concentrations ranged from 28.5 mg/Kg in soil sample Flowpath #1 to 642 mg/Kg in soil sample North Wall. Review of laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than NMOCD regulatory standards in all soil samples submitted.

On September 2, 2011, five (5) soil samples (North Wall Flowpath, South Wall Flowpath, East Wall Flowpath, West Wall Flowpath, and Flowpath Floor @ 9' bgs) were collected from the floor and sidewalls of the excavation. The soil samples were submitted to the laboratory for analysis of BTEX, TPH, and chloride concentrations. Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL in all soil samples submitted. TPH concentrations ranged from less than the laboratory MDL in soil samples North Wall Flowpath, East Wall Flowpath, West Wall Flowpath, and Flowpath Floor @ 9' bgs to 26.0 mg/Kg in soil sample South Wall Flowpath. Chloride concentrations ranged from 44.5 mg/Kg in soil sample Flowpath Floor @ 9' bgs to 193 mg/Kg in soil sample South Wall Flowpath. Review of laboratory analytical results indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD regulatory standards in all soil samples submitted.

On September 6, 2011, a representative of the NMOCD Hobbs District Office visited the release site after chloride field screens indicated increasing concentrations of chloride to the north of the release point. The NMOCD representative concurred with the Southern Union representative's observations that the elevated chloride levels were the result of a historical leak in the area and were unrelated to the 6-Inch Lateral Exxon Mobil release. The NMOCD representative granted approval to leave the chloride impacted soil in place, pending further investigation and consultation with the NMOCD Santa Fe District Office.

On September 12, 2011, two (2) delineation trenches (North Trench and Far North Trench) were advanced at the site to further investigate the vertical and horizontal extent of chloride impact. Trench "North Trench" was advanced at the northern end of the existing excavation, adjacent to the 6-inch Lateral pipeline, to a total depth of approximately four feet (4') bgs. Trench "Far North Trench" was advanced approximately seventy feet (70') to the north-northeast of the release point to a total depth of approximately four feet (4') bgs.

Following the excavation of the "Far North Trench", two (2) soil samples (Far North Trench Wall @ 2' and Far North Trench Wall @ 4') were collected from the sidewall of the Far North Trench and submitted to the laboratory for analysis of chloride concentrations. Laboratory analytical results indicated chloride concentrations ranged from 644 mg/Kg in soil sample Far North Trench Wall @ 4' to 1,060 mg/Kg in soil sample Far North Trench Wall @ 2'.

On September 21, 2011, based on laboratory analytical results, Southern Union requested and received NMOCD approval to backfill the excavation with locally purchased non-impacted soil.

On September 22, 2011, the excavation was backfilled in eighteen inch (18") lifts, compacted, and contoured to fit the surrounding topography. Prior to backfilling, final dimensions of the excavation were approximately one hundred and seventeen feet (117') in length, ranging in width from approximately thirty-two feet (32') to approximately forty feet (40'), and ranging in depth from approximately three feet (3') to approximately twelve feet (12') bgs.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil Samples were delivered to Xenco Laboratories, Inc., in Odessa, Texas, for analysis of BTEX, TPH, and/or chloride concentrations using the methods described below. Soil samples were analyzed for BTEX, TPH, and/or chloride concentrations within fourteen (14) days following the collection date.

The soil samples were analyzed as follows:

- BTEX concentrations in accordance with EPA Method SW 846-8021b
- TPH concentrations in accordance with modified EPA Method SW 846-8015M
- Chloride concentrations in accordance with EPA Method 300.1

4.2 Decontamination of Equipment

Cleaning of the sampling equipment was the responsibility of the environmental technician. Prior to use, and between each sample, the sampling equipment was cleaned with Liqui-Nox® detergent and rinsed with distilled water.

4.3 Laboratory Protocol

The laboratory was responsible for proper QA/QC procedures after signing the chain-of-custody form(s). These procedures were either transmitted with the laboratory analytical reports or are on file at the laboratory.

5.0 SITE CLOSURE REQUEST

Soil samples collected from the floor and sidewalls of the 6-Inch Lateral Exxon Mobil excavation were analyzed by an NMOCD-approved laboratory. Concentrations of benzene, BTEX, TPH, and chloride were less than the remediation action levels established for the site. Based on these laboratory analytical results, Basin recommends Southern Union provide the NMOCD Hobbs District Office and NMSLO a copy of this *Remediation Summary & Site Closure Request* and request the NMOCD grant site closure to the 6-Inch Lateral Exxon Mobil release site.

6.0 LIMITATIONS

Basin Environmental Service Technologies, LLC, has prepared this *Remediation Summary & Site Closure Request* to the best of its ability. No other warranty, expressed or implied, is made or intended. Basin has examined and relied upon documents referenced in the report and on oral statements made by certain individuals. Basin has not conducted an independent examination of the facts contained in referenced materials and statements. Basin has presumed the genuineness of these documents and statements and that the information provided therein is true and accurate. Basin has prepared this report in a professional manner, using the degree of skill and care exercised by similar environmental consultants. Basin notes that the facts and conditions referenced in this report may change over time, and the conclusions and recommendations set forth herein are applicable only to the facts and conditions as described at the time of this report.

This report has been prepared for the benefit of Southern Union Gas Services. The information contained in this report, including all exhibits and attachments, may not be used by any other party without the express consent of Basin Environmental Service Technologies, LLC, and/or Southern Union Gas Services.

7.0 DISTRIBUTION:

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Hobbs, NM 88240
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Southern Union Gas Services
801 S. Loop 464
Monahans, Texas 79756
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curt.stanley@sug.com

Copy 4: Basin Environmental Service Technologies, LLC
P.O. Box 301
Lovington, New Mexico 88260

Figures

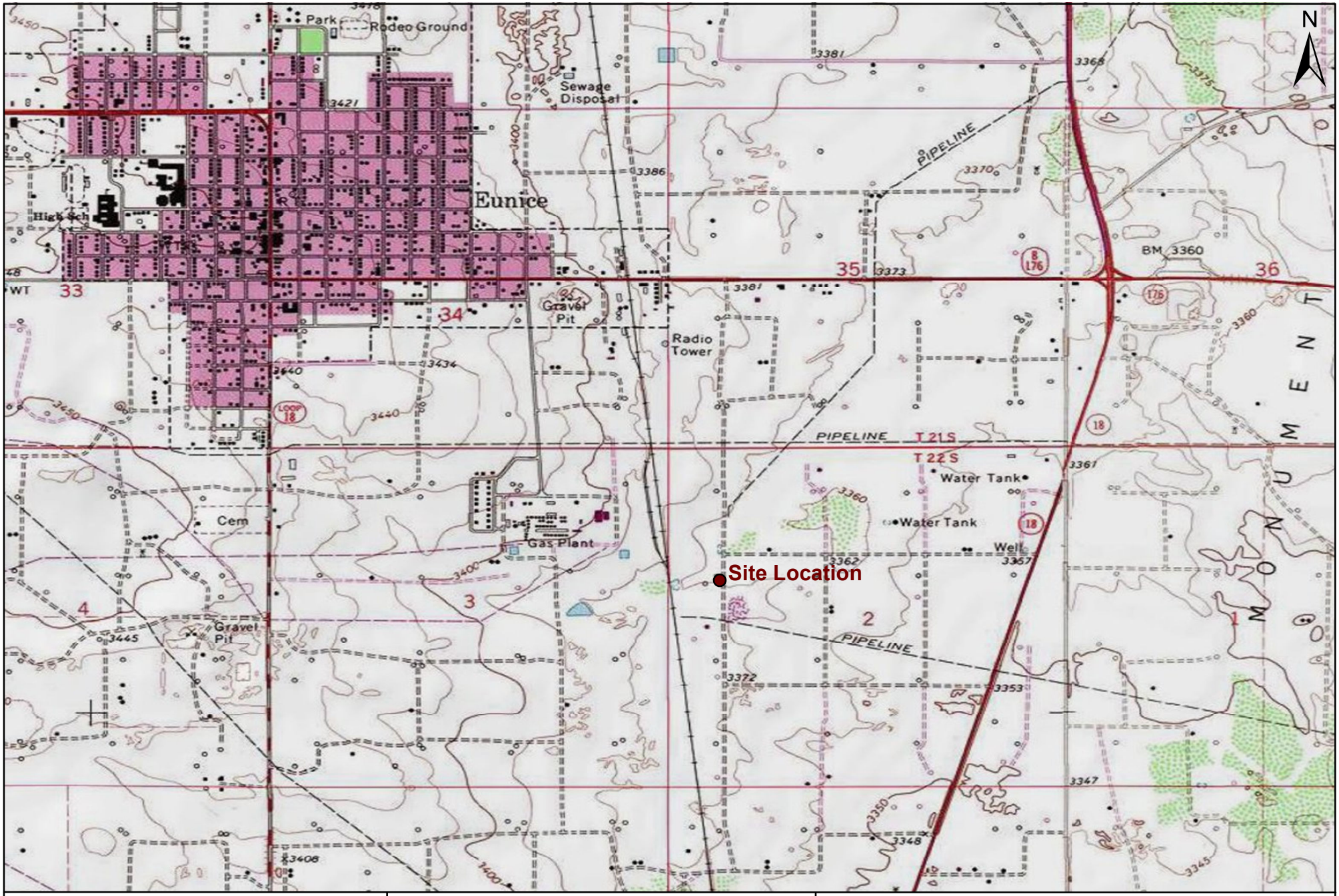
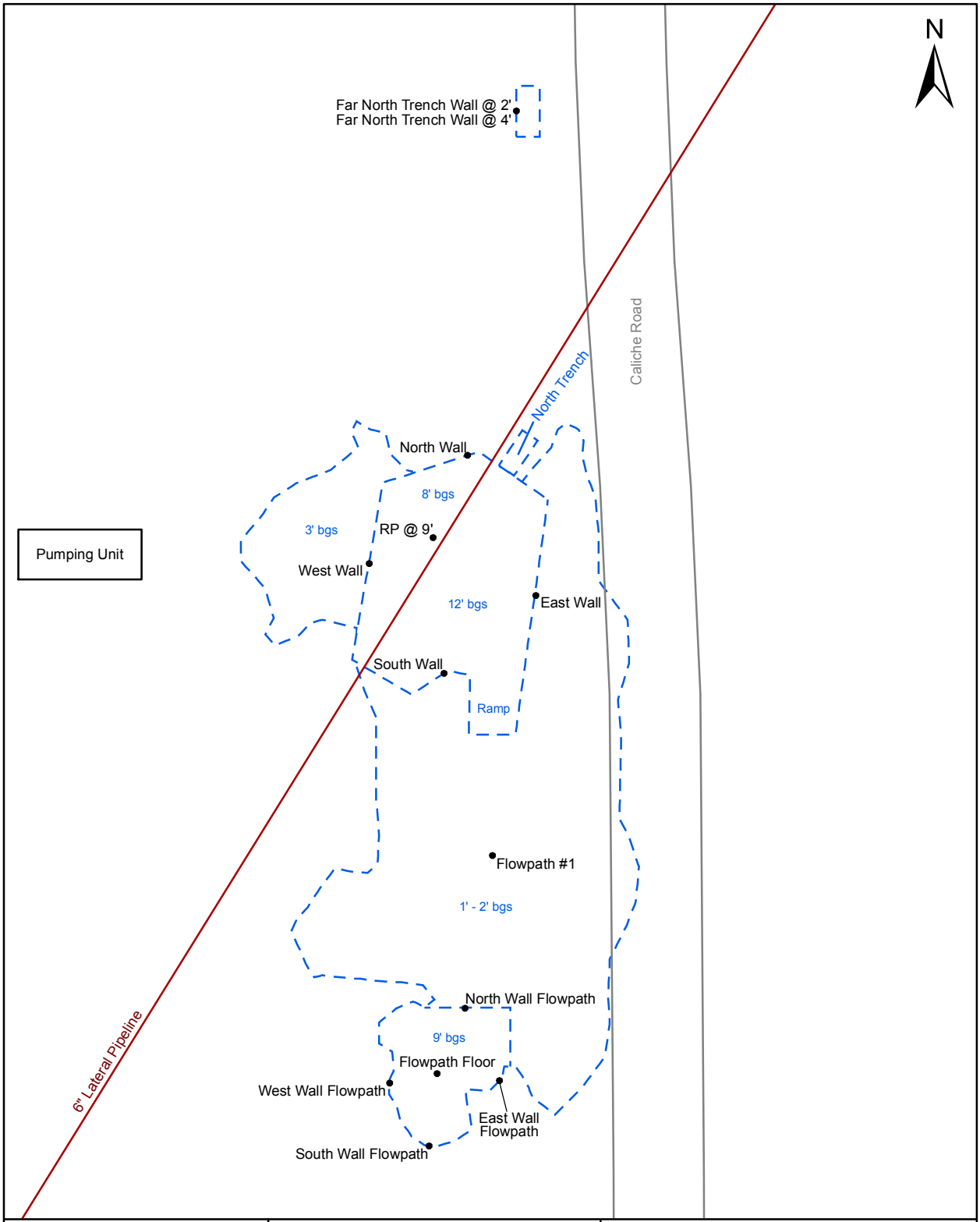


Figure 1
Site Location Map
Southern Union Gas Services
6-Inch Lateral Exxon Mobil
Lea County, New Mexico
NMOCD Ref. #: 1RP-03-11-2690

Basin Environmental Service Technologies
Effective Solutions

Basin Environmental Service Technologies, LLC
3100 Plains Hwy.
Lovington, NM 88260

Drawn By: BJA	Checked By: BRB
December 15, 2011	Scale: 1" = 2000'



Legend:
- Excavation Extent
- Pipeline
- Road
- Sample Location

Figure 2
Site & Sample Location Map
Southern Union Gas Services
6-Inch Lateral Exxon Mobil
Lea County, New Mexico
NMOCD Ref.#: 1RP-03-11-2690

Basin Environmental Service Technologies
3100 Plains Hwy.
Lovington, NM 88260

Drawn By: BJA	Checked By: BRB
April 16, 2012	1" = 24'

Tables

TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES
6-INCH LATERAL EXXON MOBIL
LEA COUNTY, NEW MEXICO
NMOCD REFERENCE #1RP-03-11-2690

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL TPH C_6-C_{35} (mg/Kg)	E 300
				BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M.P. - XYLENES (mg/Kg)	O-XYLENE (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C_6-C_{12} (mg/Kg)	DRO C_{12}-C_{28} (mg/Kg)	ORO C_{28}-C_{35} (mg/Kg)		CHLORIDE (mg/Kg)
RP @ 9' bgs	9'	8/30/2011	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	41.1	<16.5	41.1	178
North Wall	5'	8/30/2011	In-Situ	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	<15.5	<15.5	<15.5	642
South Wall	5'	8/30/2011	In-Situ	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.1	<15.1	<15.1	<15.1	205
East Wall	5'	8/30/2011	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.6	22.5	<15.6	22.5	514
West Wall	5'	8/30/2011	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.4	21.6	<16.4	21.6	288
Flowpath #1	2'	8/30/2011	In-Situ	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.2	<16.2	<16.2	<16.2	28.5
North Wall Flowpath	2'	9/2/2011	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.8	<16.8	<16.8	<16.8	158
South Wall Flowpath	5'	9/2/2011	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	26.0	<16.5	26.0	193
East Wall Flowpath	8'	9/2/2011	In-Situ	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<17.5	<17.5	<17.5	<17.5	87.0
West Wall Flowpath	2'	9/2/2011	In-Situ	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	154
Flowpath Floor @ 9' bgs	9'	9/2/2011	In-Situ	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<16.9	<16.9	<16.9	<16.9	44.5
Far North Trench Wall @ 2'	2'	9/12/2011	In-Situ	-	-	-	-	-	-	-	-	-	-	1,060
Far North Trench Wall @ 4'	4'	9/12/2011	In-Situ	-	-	-	-	-	-	-	-	-	-	644
NMOCD Criteria				**10**					**50**				**1,000**	**500**

- = Not analyzed.

Appendices

Appendix A

Photographs

6-Inch Lateral Exxon Mobil - Release Site

6-Inch Lateral Exxon Mobil - Release Site (Prior to Hydro Excavation)

6-Inch Lateral Exxon Mobil - Excavation (Release Point)

6-Inch Lateral Exxon Mobil - Excavation (Release Point)

6-Inch Lateral Exxon Mobil - Excavation (Flowpath)

6-Inch Lateral Exxon Mobil - Excavation (Flowpath)

6-Inch Lateral Exxon Mobil - Excavation (Following Backfill)

6-Inch Lateral Exxon Mobil - Excavation (Following Backfill)

Appendix B

Laboratory Analytical Reports

Analytical Report 426776

for

Southern Union Gas Services- Monahans

Project Manager: Rose Slade

6 Inch Lateral Exxon Mobil

01-SEP-11

Collected By: Client

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

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

01-SEP-11

Project Manager: **Rose Slade**
Southern Union Gas Services- Monahans
1507 W. 15th Street
Monahans, TX 79756

Reference: XENCO Report No: **426776**
6 Inch Lateral Exxon Mobil
Project Address: East of Eunice, New Mexico

Rose Slade:

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 426776. 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. 426776 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 426776

Southern Union Gas Services- Monahans, Monahans, TX

6 Inch Lateral Exxon Mobil

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
RP 9'bgs	S	08-29-11 13:00	- 9 ft	426776-001
East Wall	S	08-30-11 10:30	- 7 ft	426776-002
West Wall	S	08-30-11 10:45	- 7 ft	426776-003
North Wall	S	08-30-11 10:59	- 7 ft	426776-004
South Wall	S	08-30-11 13:45	- 7 ft	426776-005
Flowpath #1	S	08-30-11 16:00		426776-006

CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans
Project Name: 6 Inch Lateral Exxon Mobil

Project ID:
Work Order Number: *426776*

Report Date: *01-SEP-11*
Date Received: *08/31/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 426776

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: 6 Inch Lateral Exxon Mobil

Project Id:
Contact: Rose Slade
Project Location: East of Eunice, New Mexico

Date Received in Lab: Wed Aug-31-11 08:03 am
Report Date: 01-SEP-11
Project Manager: Brent Barron II

Analysis Requested													
	Lab Id:	426776-001		426776-002		426776-003		426776-004		426776-005		426776-006	
	Field Id:	RP 9'bgs		East Wall		West Wall		North Wall		South Wall		Flowpath #1	
	Depth:	9 ft		7 ft		7 ft		7 ft		7 ft			
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Aug-29-11 13:00		Aug-30-11 10:30		Aug-30-11 10:45		Aug-30-11 10:59		Aug-30-11 13:45		Aug-30-11 16:00	
Anions by E300	***Extracted:***												
	Analyzed:	Aug-31-11 18:04		Aug-31-11 18:04		Aug-31-11 18:04		Aug-31-11 18:04		Aug-31-11 18:04		Aug-31-11 18:04	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		178	4.63	514	8.71	288	9.17	642	8.69	205	4.25	28.5	4.50
BTEX by EPA 8021B	***Extracted:***	Aug-31-11 14:00		Aug-31-11 14:00		Aug-31-11 14:00		Aug-31-11 14:00		Aug-31-11 14:00		Aug-31-11 14:00	
	Analyzed:	Aug-31-11 20:45		Aug-31-11 22:38		Aug-31-11 23:01		Aug-31-11 23:24		Aug-31-11 23:47		Sep-01-11 00:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00110	ND	0.00105	ND	0.00110	ND	0.00104	ND	0.00101	ND	0.00107
Toluene		ND	0.00221	ND	0.00209	ND	0.00220	ND	0.00208	ND	0.00203	ND	0.00214
Ethylbenzene		ND	0.00110	ND	0.00105	ND	0.00110	ND	0.00104	ND	0.00101	ND	0.00107
m_p-Xylenes		ND	0.00221	ND	0.00209	ND	0.00220	ND	0.00208	ND	0.00203	ND	0.00214
o-Xylene		ND	0.00110	ND	0.00105	ND	0.00110	ND	0.00104	ND	0.00101	ND	0.00107
Total Xylenes		ND	0.00110	ND	0.00105	ND	0.00110	ND	0.00104	ND	0.00101	ND	0.00107
Total BTEX		ND	0.00110	ND	0.00105	ND	0.00110	ND	0.00104	ND	0.00101	ND	0.00107
Percent Moisture	***Extracted:***												
	Analyzed:	Aug-31-11 11:40		Aug-31-11 11:40		Aug-31-11 11:40		Aug-31-11 11:40		Aug-31-11 11:40		Aug-31-11 11:55	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		9.34	1.00	3.59	1.00	8.41	1.00	3.29	1.00	1.24	1.00	6.70	1.00
TPH By SW8015 Mod	***Extracted:***	Aug-31-11 12:09		Aug-31-11 12:09		Aug-31-11 12:09		Aug-31-11 12:09		Aug-31-11 12:09		Aug-31-11 12:09	
	Analyzed:	Sep-01-11 05:27		Sep-01-11 05:59		Sep-01-11 06:29		Sep-01-11 07:01		Sep-01-11 07:31		Sep-01-11 08:03	
	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	16.5	ND	15.6	ND	16.4	ND	15.5	ND	15.1	ND	16.2
C12-C28 Diesel Range Hydrocarbons		41.1	16.5	22.5	15.6	21.6	16.4	ND	15.5	ND	15.1	ND	16.2
C28-C35 Oil Range Hydrocarbons		ND	16.5	ND	15.6	ND	16.4	ND	15.5	ND	15.1	ND	16.2
Total TPH		41.1	16.5	22.5	15.6	21.6	16.4	ND	15.5	ND	15.1	ND	16.2

Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders 426776,

Project ID:

Lab Batch #: 868952 **Sample:** 426776-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/11 20:45

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0249	0.0300	83	80-120	

Lab Batch #: 868952 **Sample:** 426776-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/11 22:38

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 868952 **Sample:** 426776-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/11 23:01

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0259	0.0300	86	80-120	

Lab Batch #: 868952 **Sample:** 426776-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/11 23:24

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0268	0.0300	89	80-120	

Lab Batch #: 868952 **Sample:** 426776-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/11 23:47

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0280	0.0300	93	80-120	
4-Bromofluorobenzene	0.0257	0.0300	86	80-120	

* 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.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders 426776,

Project ID:

Lab Batch #: 868952 **Sample:** 426776-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 00:09

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 868949 **Sample:** 426776-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 05:27

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.6	100	96	70-135	
o-Terphenyl	47.1	50.0	94	70-135	

Lab Batch #: 868949 **Sample:** 426776-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 05:59

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.7	100	94	70-135	
o-Terphenyl	44.7	50.1	89	70-135	

Lab Batch #: 868949 **Sample:** 426776-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 06:29

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.3	100	98	70-135	
o-Terphenyl	47.5	50.2	95	70-135	

Lab Batch #: 868949 **Sample:** 426776-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 07:01

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.7	99.9	97	70-135	
o-Terphenyl	46.3	50.0	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.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders 426776,

Project ID:

Lab Batch #: 868949 **Sample:** 426776-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 07:31

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.4	99.7	100	70-135	
o-Terphenyl	46.3	49.9	93	70-135	

Lab Batch #: 868949 **Sample:** 426776-006 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 08:03

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.9	101	95	70-135	
o-Terphenyl	46.4	50.3	92	70-135	

Lab Batch #: 868952 **Sample:** 610795-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/31/11 16:56

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0254	0.0300	85	80-120	

Lab Batch #: 868949 **Sample:** 610789-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/11 04:26

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.6	105	70-135	
o-Terphenyl	50.8	49.8	102	70-135	

Lab Batch #: 868952 **Sample:** 610795-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/31/11 15:23

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

* 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.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders 426776,

Project ID:

Lab Batch #: 868949 **Sample:** 610789-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/11 03:25

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.6	99.8	96	70-135	
o-Terphenyl	50.2	49.9	101	70-135	

Lab Batch #: 868952 **Sample:** 610795-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/31/11 15:46

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 868949 **Sample:** 610789-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/01/11 03:55

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.3	100	99	70-135	
o-Terphenyl	51.4	50.2	102	70-135	

Lab Batch #: 868952 **Sample:** 425964-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/11 21:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 868949 **Sample:** 426776-006 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 08:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	100	100	70-135	
o-Terphenyl	53.1	50.2	106	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.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders 426776,

Project ID:

Lab Batch #: 868952 **Sample:** 425964-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/31/11 21:30

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 868949 **Sample:** 426776-006 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/01/11 09:06

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.4	100	95	70-135	
o-Terphenyl	49.9	50.1	100	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.

BS / BSD Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Order #: 426776 **Project ID:**

Analyst: ASA **Date Prepared:** 08/31/2011 **Date Analyzed:** 08/31/2011

Lab Batch ID: 868952 **Sample:** 610795-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.119	119	0.100	0.121	121	2	70-130	35	
Toluene	<0.00200	0.100	0.106	106	0.100	0.108	108	2	70-130	35	
Ethylbenzene	<0.00100	0.100	0.116	116	0.100	0.120	120	3	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.236	118	0.200	0.243	122	3	70-135	35	
o-Xylene	<0.00100	0.100	0.106	106	0.100	0.110	110	4	71-133	35	

Analyst: BRB **Date Prepared:** 08/31/2011 **Date Analyzed:** 08/31/2011

Lab Batch ID: 868916 **Sample:** 868916-1-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	<0.840	20.0	21.8	109	20.0	21.8	109	0	75-125	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

BS / BSD Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Order #: 426776 **Project ID:**

Analyst: ASA **Date Prepared:** 08/31/2011 **Date Analyzed:** 09/01/2011

Lab Batch ID: 868949 **Sample:** 610789-1-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	<15.0	998	827	83	1000	872	87	5	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	998	905	91	1000	960	96	6	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: 6 Inch Lateral Exxon Mobil

Work Order #: 426776
Lab Batch #: 868916
Project ID:
Date Analyzed: 08/31/2011
Date Prepared: 08/31/2011
Analyst: BRB
QC- Sample ID: 426772-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	618	201	811	96	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

Form 3 - MS / MSD Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Order # : 426776 **Project ID:**

Lab Batch ID: 868952 **QC- Sample ID:** 425964-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/31/2011 **Date Prepared:** 08/31/2011 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00102	0.102	0.0973	95	0.102	0.0997	98	2	70-130	35	
Toluene	<0.00204	0.102	0.0857	84	0.102	0.0882	86	3	70-130	35	
Ethylbenzene	<0.00102	0.102	0.0923	90	0.102	0.0952	93	3	71-129	35	
m_p-Xylenes	<0.00204	0.204	0.182	89	0.204	0.189	93	4	70-135	35	
o-Xylene	<0.00102	0.102	0.0841	82	0.102	0.0880	86	5	71-133	35	

Lab Batch ID: 868949 **QC- Sample ID:** 426776-006 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/01/2011 **Date Prepared:** 08/31/2011 **Analyst:** ASA

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	<16.1	1080	934	86	1070	874	82	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.1	1080	1030	95	1070	976	91	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

Sample Duplicate Recovery

Project Name: 6 Inch Lateral Exxon Mobil

Work Order #: 426776

Lab Batch #: 868916 **Project ID:**

Date Analyzed: 08/31/2011 18:04 **Date Prepared:** 08/31/2011 **Analyst:** BRB

QC- Sample ID: 426772-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Anions by E300 Analyte	SAMPLE / SAMPLE DUPLICATE RECOVERY				
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	618	619	0	20	

Lab Batch #: 868906

Date Analyzed: 08/31/2011 11:40 **Date Prepared:** 08/31/2011 **Analyst:** BRB

QC- Sample ID: 426766-001 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	2.32	2.33	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

Environmental Lab of Texas

A Xenco Laboratories Company

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Rose Slade Page 1 of 1

Company Name: Southern Union Gas Services

Company Address: 801 Loop 464

City/State/Zip: Monahans, Texas 79756

Telephone No: 432-940-5147 Fax No:

Sampler Signature: C.H. Fenley for Bobby Blackwood e-mail: rose.slade@sug.com

Project Name: 6 Inch Lateral Exxon Mobil

Project #:

Project Loc: East of Eunice, New Mexico

PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)

ORDER #: 426776

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers: Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 8015M	TOTAL: TPH: 418.1	TPH: TX 1005	TPH: TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chloride E 300		HOLD	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT
001	RP 9' bgs	-	9'	8/29/2011	1300		1	X								Soil	X										X			X				X
002	East Wall	-	7'	8/30/2011	1030		1	X								Soil	X										X			X				X
003	West Wall		7'	8/30/2011	1045		1	X								Soil	X										X			X				X
004	North Wall		7'	8/30/2011	1059		1	X								Soil	X										X			X				X
005	South Wall		7'	8/30/2011	1345		1	X								Soil	X										X			X				X
006	Flowpath #1		-	8/30/2011	1600		1	X								Soil	X										X			X				X

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
C.H. Fenley	8/31/11	0803			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				8/31/11	0803

Laboratory Comments:

Sample Containers Intact?	N
VOCs Free of Headspace?	N
Labels on container(s)	N
Custody seals on container(s)	N
Custody seals on cooler(s)	N
Sample Hand Delivered by Sampler/Client Rep. ?	N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 4.6 °C

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: Southern Union Gas

Date/Time: 8-31-11 8:03

Lab ID # : 426776

Initials: AM

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	4.6 °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 427106

for

Southern Union Gas Services- Monahans

Project Manager: Rose Slade

6 Inch Lateral Exxon Mobil

08-SEP-11

Collected By: Client

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

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

08-SEP-11

Project Manager: **Rose Slade**
Southern Union Gas Services- Monahans
1507 W. 15th Street
Monahans, TX 79756

Reference: XENCO Report No: **427106**
6 Inch Lateral Exxon Mobil
Project Address: East of Eunice, New Mexico

Rose Slade:

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 427106. 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. 427106 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 427106

Southern Union Gas Services- Monahans, Monahans, TX

6 Inch Lateral Exxon Mobil

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
East Wall Flowpath	S	09-02-11 10:45		427106-001
West Wall Flowpath	S	09-02-11 11:20		427106-002
North Wall Flowpath	S	09-02-11 13:45		427106-003
South Wall Flowpath	S	09-02-11 14:15		427106-004
Flowpath Floor @ 9' bgs	S	09-02-11 15:00		427106-005

CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans
Project Name: 6 Inch Lateral Exxon Mobil

Project ID:
Work Order Number: *427106*

Report Date: *08-SEP-11*
Date Received: *09/07/2011*

Sample receipt non conformances and comments:
None

Sample receipt non conformances and comments per sample:

None

Analytical non nonformances and comments:

Batch: LBA-869392 BTEX by EPA 8021B
SW8021BM

Batch 869392, Toluene recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate.
Samples affected are: 427106-001, -003, -005, -002, -004.
The Laboratory Control Sample for Toluene is within laboratory Control Limits

Certificate of Analysis Summary 427106

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: 6 Inch Lateral Exxon Mobil

Project Id:
Contact: Rose Slade
Project Location: East of Eunice, New Mexico

Date Received in Lab: Wed Sep-07-11 09:34 am
Report Date: 08-SEP-11
Project Manager: Brent Barron II

Analysis Requested											
	Lab Id:	427106-001		427106-002		427106-003		427106-004		427106-005	
	Field Id:	East Wall Flowpath		West Wall Flowpath		North Wall Flowpath		South Wall Flowpath		Flowpath Floor @ 9' bgs	
	Depth:										
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Sep-02-11 10:45		Sep-02-11 11:20		Sep-02-11 13:45		Sep-02-11 14:15		Sep-02-11 15:00	
Anions by E300	***Extracted:***										
	Analyzed:	Sep-07-11 19:40		Sep-07-11 19:40		Sep-07-11 19:40		Sep-07-11 19:40		Sep-07-11 19:40	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		87.0	4.91	154	4.55	158	4.72	193	4.62	44.5	4.76
BTEX by EPA 8021B	***Extracted:***	Sep-07-11 11:35		Sep-07-11 11:35		Sep-07-11 11:35		Sep-07-11 11:35		Sep-07-11 11:35	
	Analyzed:	Sep-07-11 20:55		Sep-07-11 21:18		Sep-07-11 21:41		Sep-07-11 22:03		Sep-07-11 22:27	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Benzene		ND	0.00116	ND	0.00107	ND	0.00112	ND	0.00110	ND	0.00113
Toluene		ND	0.00232	ND	0.00215	ND	0.00224	ND	0.00220	ND	0.00227
Ethylbenzene		ND	0.00116	ND	0.00107	ND	0.00112	ND	0.00110	ND	0.00113
m_p-Xylenes		ND	0.00232	ND	0.00215	ND	0.00224	ND	0.00220	ND	0.00227
o-Xylene		ND	0.00116	ND	0.00107	ND	0.00112	ND	0.00110	ND	0.00113
Total Xylenes		ND	0.00116	ND	0.00107	ND	0.00112	ND	0.00110	ND	0.00113
Total BTEX		ND	0.00116	ND	0.00107	ND	0.00112	ND	0.00110	ND	0.00113
Percent Moisture	***Extracted:***										
	Analyzed:	Sep-07-11 11:20		Sep-07-11 11:20		Sep-07-11 11:20		Sep-07-11 11:20		Sep-07-11 11:20	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL
Percent Moisture		14.5	1.00	7.77	1.00	11.1	1.00	9.03	1.00	11.7	1.00
TPH By SW8015 Mod	***Extracted:***	Sep-07-11 11:05		Sep-07-11 11:05		Sep-07-11 11:05		Sep-07-11 11:05		Sep-07-11 11:05	
	Analyzed:	Sep-07-11 23:08		Sep-07-11 23:40		Sep-08-11 00:09		Sep-08-11 00:41		Sep-08-11 01:12	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
C6-C12 Gasoline Range Hydrocarbons		ND	17.5	ND	16.2	ND	16.8	ND	16.5	ND	16.9
C12-C28 Diesel Range Hydrocarbons		ND	17.5	ND	16.2	ND	16.8	26.0	16.5	ND	16.9
C28-C35 Oil Range Hydrocarbons		ND	17.5	ND	16.2	ND	16.8	ND	16.5	ND	16.9
Total TPH		ND	17.5	ND	16.2	ND	16.8	26.0	16.5	ND	16.9

Brent Barron II
Odessa Laboratory Manager

Final 1.000

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders : 427106,

Project ID:

Lab Batch #: 869392 **Sample:** 427106-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 20:55

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 869392 **Sample:** 427106-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 21:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 869392 **Sample:** 427106-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 21:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

Lab Batch #: 869392 **Sample:** 427106-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 22:03

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 869392 **Sample:** 427106-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 22:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0278	0.0300	93	80-120	
4-Bromofluorobenzene	0.0277	0.0300	92	80-120	

* 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.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders : 427106,

Project ID:

Lab Batch #: 869404 **Sample:** 427106-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 23:08

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.9	94	70-135	
o-Terphenyl	45.9	50.0	92	70-135	

Lab Batch #: 869404 **Sample:** 427106-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 23:40

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.0	99.7	97	70-135	
o-Terphenyl	47.9	49.9	96	70-135	

Lab Batch #: 869404 **Sample:** 427106-003 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/08/11 00:09

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.6	102	70-135	
o-Terphenyl	50.1	49.8	101	70-135	

Lab Batch #: 869404 **Sample:** 427106-004 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/08/11 00:41

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	51.4	50.1	103	70-135	

Lab Batch #: 869404 **Sample:** 427106-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/08/11 01:12

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.7	100	70-135	
o-Terphenyl	48.6	49.9	97	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.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders : 427106,

Project ID:

Lab Batch #: 869392 **Sample:** 611048-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/07/11 20:32

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0245	0.0300	82	80-120	

Lab Batch #: 869404 **Sample:** 611049-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/07/11 22:37

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	101	101	70-135	
o-Terphenyl	49.8	50.3	99	70-135	

Lab Batch #: 869392 **Sample:** 611048-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/07/11 19:00

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 869404 **Sample:** 611049-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/07/11 21:35

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	133	100	133	70-135	
o-Terphenyl	55.3	50.1	110	70-135	

Lab Batch #: 869392 **Sample:** 611048-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/07/11 19:23

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0300	0.0300	100	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

* 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.

Form 2 - Surrogate Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Orders : 427106,

Project ID:

Lab Batch #: 869404 **Sample:** 611049-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 09/07/11 22:07

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.9	111	70-135	
o-Terphenyl	45.4	50.0	91	70-135	

Lab Batch #: 869392 **Sample:** 427106-002 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 23:13

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0281	0.0300	94	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 869404 **Sample:** 427106-003 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/08/11 02:44

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	118	100	118	70-135	
o-Terphenyl	47.6	50.0	95	70-135	

Lab Batch #: 869392 **Sample:** 427106-002 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/07/11 23:36

BTEX by EPA 8021B Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 869404 **Sample:** 427106-003 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 09/08/11 03:16

TPH By SW8015 Mod Analytes	SURROGATE RECOVERY STUDY Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	46.6	50.1	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.

Final 1.000

BS / BSD Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Order #: 427106 **Project ID:**

Analyst: ASA **Date Prepared:** 09/07/2011 **Date Analyzed:** 09/07/2011

Lab Batch ID: 869392 **Sample:** 611048-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.111	111	0.100	0.115	115	4	70-130	35	
Toluene	<0.00200	0.100	0.100	100	0.100	0.101	101	1	70-130	35	
Ethylbenzene	<0.00100	0.100	0.107	107	0.100	0.110	110	3	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.214	107	0.200	0.220	110	3	70-135	35	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.101	101	1	71-133	35	

Analyst: BRB **Date Prepared:** 09/07/2011 **Date Analyzed:** 09/07/2011

Lab Batch ID: 869363 **Sample:** 869363-1-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	<0.840	20.0	21.1	106	20.0	21.0	105	0	75-125	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

BS / BSD Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Order #: 427106 **Project ID:**

Analyst: BBH **Date Prepared:** 09/07/2011 **Date Analyzed:** 09/07/2011

Lab Batch ID: 869404 **Sample:** 611049-1-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	<15.0	1000	817	82	999	732	73	11	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<15.0	1000	932	93	999	736	74	24	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: 6 Inch Lateral Exxon Mobil

Work Order #: 427106
Lab Batch #: 869363
Project ID:
Date Analyzed: 09/07/2011
Date Prepared: 09/07/2011
Analyst: BRB
QC- Sample ID: 427106-001 S
Batch #: 1
Matrix: Soil
Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	87.0	100	184	97	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

Form 3 - MS / MSD Recoveries

Project Name: 6 Inch Lateral Exxon Mobil

Work Order # : 427106 **Project ID:**

Lab Batch ID: 869392 **QC- Sample ID:** 427106-002 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/07/2011 **Date Prepared:** 09/07/2011 **Analyst:** ASA

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
Benzene	<0.00109	0.109	0.138	127	0.108	0.116	107	17	70-130	35	
Toluene	<0.00218	0.109	0.197	181	0.108	0.141	131	33	70-130	35	X
Ethylbenzene	<0.00109	0.109	0.0955	88	0.108	0.0910	84	5	71-129	35	
m_p-Xylenes	<0.00218	0.218	0.244	112	0.216	0.207	96	16	70-135	35	
o-Xylene	<0.00109	0.109	0.104	95	0.108	0.0902	84	14	71-133	35	

Lab Batch ID: 869404 **QC- Sample ID:** 427106-003 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 09/08/2011 **Date Prepared:** 09/07/2011 **Analyst:** BBH

Reporting Units: mg/kg

TPH By SW8015 Mod Analytes	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
	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
C6-C12 Gasoline Range Hydrocarbons	<16.9	1120	790	71	1130	806	71	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<16.9	1120	897	80	1130	873	77	3	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

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

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

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

Sample Duplicate Recovery

Project Name: 6 Inch Lateral Exxon Mobil

Work Order #: 427106

Lab Batch #: 869363 **Project ID:**

Date Analyzed: 09/07/2011 19:40 **Date Prepared:** 09/07/2011 **Analyst:** BRB

QC- Sample ID: 426979-006 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300 **Analyte**	**Parent Sample Result [A]**	**Sample Duplicate Result [B]**	**RPD**	**Control Limits %RPD**	**Flag**
Chloride	13200	13000	2	20	

Lab Batch #: 869363

Date Analyzed: 09/07/2011 19:40 **Date Prepared:** 09/07/2011 **Analyst:** BRB

QC- Sample ID: 427106-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300 **Analyte**	**Parent Sample Result [A]**	**Sample Duplicate Result [B]**	**RPD**	**Control Limits %RPD**	**Flag**
Chloride	87.0	76.3	13	20	

Lab Batch #: 869394

Date Analyzed: 09/07/2011 11:20 **Date Prepared:** 09/07/2011 **Analyst:** BRB

QC- Sample ID: 427106-001 D **Batch #:** 1 **Matrix:** Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture **Analyte**	**Parent Sample Result [A]**	**Sample Duplicate Result [B]**	**RPD**	**Control Limits %RPD**	**Flag**
Percent Moisture	14.5	15.0	3	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

Environmental Lab of Texas

A Xenco Laboratories Company

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: Rose Slade Page 1 of 1

Company Name: Southern Union Gas Services

Company Address: 801 Loop 464

City/State/Zip: Monahans, Texas 79756

Telephone No: 432-940-5147 Fax No:

Sampler Signature: Bobby Blackwood e-mail: rose.slade@sug.com

Project Name: 6 Inch Lateral Exxon Mobil

Project #:

Project Loc: East of Eunice, New Mexico

PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)

ORDER #: 427106

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge GW = Groundwater S=Soil/Solid NP=Non-Potable Specify Other	Analyze For: TPH: 418.1	TPH: 8015M	TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	Chloride E.300	HOLD	RUSH TAT (Pre-Schedule) (24, 48, 72 hrs)	Standard TAT
																	TCLP:										TOTAL:						
																	8015M		TX 1006								X						
001	East Wall Flowpath			9/2/2011	1045		1	X								Soil	X										X			X		X	
002	West Wall Flowpath			9/2/2011	1120		1	X								Soil	X										X			X		X	
003	North Wall Flowpath			9/2/2011	1345		1	X								Soil	X										X			X		X	
004	South Wall Flowpath			9/2/2011	1415		1	X								Soil	X										X			X		X	
005	Flowpath Floor @ 9' bgs			9/2/2011	1500		1	X								Soil	X										X			X		X	

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	9/7/11	0934			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: Andrea Ellam	Date 9.7.11	Time 9:34

Laboratory Comments:

Sample Containers Intact?	Y	N
VOCs Free of Headspace?	Y	N
Labels on container(s)	Y	N
Custody seals on container(s)	Y	N
Custody seals on cooler(s)	Y	(N)
Sample Hand Delivered	(Y)	N
by Sampler/Client Rep. ?	(Y)	N

by Courier? UPS DHL FedEx Lone Star

4029GLASS

Temperature Upon Receipt: 3.1 °C

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: SUGS

Date/Time: 9.7.11 9:34

Lab ID # : 427106

Initials:

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	3.1 °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 427499

for

Southern Union Gas Services- Monahans

Project Manager: Rose Slade

6" Lateral Exxon-Mobil

20-SEP-11

Collected By: Client

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

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)
Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)

20-SEP-11

Project Manager: **Rose Slade**
Southern Union Gas Services- Monahans
1507 W. 15th Street
Monahans, TX 79756

Reference: XENCO Report No: **427499**
6" Lateral Exxon-Mobil
Project Address:

Rose Slade:

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 427499. 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. 427499 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 427499

Southern Union Gas Services- Monahans, Monahans, TX

6" Lateral Exxon-Mobil

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Far North Trench Wall	S	09-12-11 09:45	- 2 ft	427499-001
Far North Trench Wall	S	09-12-11 10:00	- 4 ft	427499-002

CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans
Project Name: 6" Lateral Exxon-Mobil

Project ID:
Work Order Number: 427499

Report Date: 20-SEP-11
Date Received: 09/13/2011

Sample receipt non conformances and comments:
These two samples were originally analyzed on 09/13/11. A request for reanalysis was made on 09/19/11. The reanalysis showed that the orignal results for sample 427499-001 were comparible, however, the second analysis for 427499-002 showed Chlorides at a level of 644 mg/Kg which was comparable to the field results but was not comparable to the initial analysis. Corrective action notice ODE092011-001 has been initiated and root cause analysis has begun to investigate the nature of this discrepancy.

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 427499

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: 6" Lateral Exxon-Mobil

Project Id:

Contact: Rose Slade

Project Location:

Date Received in Lab: Tue Sep-13-11 08:20 am

Report Date: 20-SEP-11

Project Manager: Brent Barron II

Analysis Requested							
	Lab Id:	427499-001		427499-002			
	Field Id:	Far North Trench Wall		Far North Trench Wall			
	Depth:	2 ft		4 ft			
	Matrix:	SOIL		SOIL			
	Sampled:	Sep-12-11 09:45		Sep-12-11 10:00			
Inorganic Anions by EPA 300/300.1	***Extracted:***						
	Analyzed:	Sep-19-11 17:22		Sep-19-11 17:22			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		1060	21.2	644	10.3		
Percent Moisture	***Extracted:***						
	Analyzed:	Sep-13-11 12:25		Sep-13-11 12:25			
	Units/RL:	%	RL	%	RL		
Percent Moisture		5.78	1.00	2.97	1.00		

Brent Barron II
Odessa Laboratory Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantiation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

BRL Below Reporting Limit.

RL Reporting Limit

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

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

DL Method Detection Limit

NC Non-Calculable

+ Outside XENCO's scope of NELAC Accreditation.

BS / BSD Recoveries

Project Name: 6" Lateral Exxon-Mobil

Work Order #: 427499
Analyst: BRB
Date Prepared: 09/19/2011
Project ID:
Date Analyzed: 09/19/2011
Lab Batch ID: 870354
Sample: 870354-1-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	<1.00	20.0	22.0	110	20.0	21.8	109	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

Form 3 - MS Recoveries

Project Name: 6" Lateral Exxon-Mobil

Work Order #: 427499

Lab Batch #: 870354 **Project ID:**

Date Analyzed: 09/19/2011 **Date Prepared:** 09/19/2011 **Analyst:** BRB

QC- Sample ID: 427727-004 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	5240	2000	7310	104	80-120	

Lab Batch #: 870354

Date Analyzed: 09/19/2011 **Date Prepared:** 09/19/2011 **Analyst:** BRB

QC- Sample ID: 427760-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Chloride	5.60	100	104	98	80-120	

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

BRL - Below Reporting Limit

Sample Duplicate Recovery

Project Name: 6" Lateral Exxon-Mobil

Work Order #: 427499

Lab Batch #: 870354 **Project ID:**

Date Analyzed: 09/19/2011 17:22 **Date Prepared:** 09/19/2011 **Analyst:** BRB

QC- Sample ID: 427760-001 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	5.60	<5.00	NC	20	U

Lab Batch #: 869871

Date Analyzed: 09/13/2011 12:25 **Date Prepared:** 09/13/2011 **Analyst:** BRB

QC- Sample ID: 427495-001 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	4.39	4.90	11	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

The Environmental Lab of Texas

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East
Odessa, Texas 79765

Phone: 432-563-1800
Fax: 432-563-1713

Project Manager: ROSE SLADE

Company Name: SOUTHERN UNION GAS SERVICES

Company Address: 801 S. LOOP 464

City/State/Zip: MONAHANS, TX 79756

Telephone No: 432-940-5747 Fax No:

Sampler Signature: for BOBBY BLACKBURN e-mail:

Project Name: 6" LATERAL EXXON-MOBIL

Project #:

Project Loc:

PO #:

Report Format: [X] Standard [ ] TRRP [ ] NPDES

(lab use only)

ORDER #: 427499

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers: Ice	HNO_3	HCl	H_2SO_4	NaOH	$Na_2S_2O_3$	None	Other (Specify)	Matrix: DW=Drinking Water SL=Sludge; GW = Groundwater S=Soil/Solid; NP=Non-Potable Specify Other	Analyze For: TCLP: TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	TOTAL: Chlorides 8260		RUSH TAT (Pre-Scheduled 24, 48, 72 hrs)	Standard TAT
01	FAR NORTH TRENCH WALL		2'	09/12/2011	0945		1							X		SOIL											X	X		X	
02	FAR NORTH TRENCH WALL		4'	09/12	1000		1							X		SOIL											X	X		X	

Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
	9/13/11	0820			
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT:	Date	Time
				9/13/11	0820

Laboratory Comments:

Sample Containers Intact? Y N

VOCs Free of Headspace? Y N

Labels on container(s) Y N

Custody seals on container(s) Y N

Custody seals on cooler(s) Y N

Sample Hand Delivered by Sampler/Client Rep. ? Y N

by Courier? UPS DHL FedEx Lone Star

Temperature Upon Receipt: 2.2 °C

9/13

Final 1.001

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:	SUGS
Date/Time:	9.13.11 8:20
Lab ID # :	427499
Initials:	BB / 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	22 °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

Appendix C

Soil Disposal Manifests

SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231
(575) 394-2511

TICKET No. 178302

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME: 6" Federal Exxon Mobil Pad

TRANSPORTER COMPANY: Basin Environ | TIME [illegible] AM/PM

DATE: 8-29-2011 VEHICLE NO: 9 GENERATOR COMPANY MAN'S NAME: [illegible]

CHARGE TO: SUG | RIG NAME AND NUMBER

TYPE OF MATERIAL

[ ] Production Water [ ] Drilling Fluids [ ] Rinsate
[ ] Tank Bottoms [X] Contaminated Soil [ ] Jet Out
[ ] Solids [ ] BS&W Content: [ ] Call Out

Description: c/d

RRC or API # C-133#

VOLUME OF MATERIAL [ ] BBLS. ______ : [X] YARD 12 : [ ] ______

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET. TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

THIS WILL CERTIFY *that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.*

DRIVER: [signature]
(SIGNATURE)

FACILITY REPRESENTATIVE: [signature]
(SIGNATURE)

White - Sundance Canary - Sundance Acct #1 Pink - Transporter

SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231
(575) 394-2511

TICKET No. 178572

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME:

TRANSPORTER COMPANY: Basin

TIME AM/PM

DATE: VEHICLE NO: GENERATOR COMPANY MAN'S NAME:

CHARGE TO: SUG

RIG NAME AND NUMBER

TYPE OF MATERIAL

[ ] Production Water [ ] Drilling Fluids [ ] Rinsate

[ ] Tank Bottoms [X] Contaminated Soil [ ] Jet Out

[ ] Solids [ ] BS&W Content: [ ] Call Out

Description:

RRC or API # C-133#

VOLUME OF MATERIAL [ ] BBLS. : [X] YARD 12 : [ ]

AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET, OPERATOR/SHIPPER REPRESENTS AND WARRANTS THAT THE WASTE MATERIAL SHIPPED HEREWITH IS MATERIAL EXEMPT FROM THE RESOURCE, CONSERVATION AND RECOVERY ACT OF 1976, AS AMENDED FROM TIME TO TIME, 40 U.S.C. § 6901, et seq., THE NM HEALTH AND SAF. CODE § 361.001 et seq., AND REGULATIONS RELATED THERETO, BY VIRTUE OF THE EXEMPTION AFFORDED DRILLING FLUIDS, PRODUCED WATERS, AND OTHER WASTE ASSOCIATED WITH THE EXPLORATION, DEVELOPMENT OR PRODUCTION OF CRUDE OIL OR NATURAL GAS OR GEOTHERMAL ENERGY.

ALSO AS A CONDITION TO SUNDANCE SERVICES, INC.'S ACCEPTANCE OF THE MATERIALS SHIPPED WITH THIS JOB TICKET. TRANSPORTER REPRESENTS AND WARRANTS THAT ONLY THE MATERIAL DELIVERED BY OPERATOR/SHIPPER TO TRANSPORTER IS NOW DELIVERED BY TRANSPORTER TO SUNDANCE SERVICES, INC.'S FACILITY FOR DISPOSAL.

***THIS WILL CERTIFY** that the above Transporter loaded the material represented by this Transporter Statement at the above described location, and that it was tendered by the above described shipper. This will certify that no additional materials were added to this load, and that the material was delivered without incident.*

DRIVER: ______________________
(SIGNATURE)

FACILITY REPRESENTATIVE: ______________________
(SIGNATURE)

White - Sundance Canary - Sundance Acct #1 Pink - Transporter

SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231
(575) 394-2511

TICKET No. 178615

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME: 6" Lateral Eddy Mabel Pad

TRANSPORTER COMPANY: Basin Enviro TIME 9:48 AM/PM

DATE: 8-31-2017 VEHICLE NO: 9 GENERATOR COMPANY MAN'S NAME: Curt Stanley

CHARGE TO: SUG RIG NAME AND NUMBER

TYPE OF MATERIAL

[ ] Production Water [ ] Drilling Fluids [ ] Rinsate

[ ] Tank Bottoms [x] Contaminated Soil [ ] Jet Out

[ ] Solids [ ] BS&W Content: [ ] Call Out

Description: C/S

RRC or API # C-133#

VOLUME OF MATERIAL [ ] BBLS. ______ : [x] YARD 12 : [ ] ______

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DRIVER: [signature]
(SIGNATURE)

FACILITY REPRESENTATIVE: [signature]
(SIGNATURE)

White - Sundance Canary - Sundance Acct #1 Pink - Transporter

SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231
(575) 394-2511

TICKET No. 178847

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME: 6" Vertical Exxon Mobil Pad

TRANSPORTER COMPANY: Basin Equip. | **TIME** 11:30 AM/PM

DATE: 9/6/11 **VEHICLE NO:** 9 | **GENERATOR COMPANY MAN'S NAME:** A. Stanley

CHARGE TO: SUG | **RIG NAME AND NUMBER**

TYPE OF MATERIAL

[ ] Production Water	[ ] Drilling Fluids	[ ] Rinsate
[ ] Tank Bottoms	[X] Contaminated Soil	[ ] Jet Out
[ ] Solids	[ ] BS&W Content:	[ ] Call Out

Description: OD

RRC or API # **C-133#**

VOLUME OF MATERIAL [ ] **BBLS.** : [X] **YARD** 12 : [ ]

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DRIVER: _____
(SIGNATURE)

FACILITY REPRESENTATIVE: A. Sta Cruz
(SIGNATURE)

White - Sundance Canary - Sundance Acct #1 Pink - Transporter

SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231
(575) 394-2511

TICKET No. 179245

LEASE OPERATOR/SHIPPER/COMPANY: SUG

LEASE NAME: 6" Jal Gas Mobil Rd.

TRANSPORTER COMPANY: Basin Enviro. | **TIME** 4:30 AM/PM

DATE: 9/6/11 **VEHICLE NO:** 9 | **GENERATOR COMPANY MAN'S NAME:** C. Stanley

CHARGE TO: SUG | **RIG NAME AND NUMBER**

TYPE OF MATERIAL

[ ] Production Water	[ ] Drilling Fluids	[ ] Rinsate
[ ] Tank Bottoms	[X] Contaminated Soil	[ ] Jet Out
[ ] Solids	[ ] BS&W Content:	[ ] Call Out

Description: OIL

RRC or API # **C-133#**

VOLUME OF MATERIAL [ ] **BBLS.** _____ : [X] **YARD** 12 : [ ] _____

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DRIVER: _____
(SIGNATURE)

FACILITY REPRESENTATIVE: _____
(SIGNATURE)

White - Sundance Canary - Sundance Acct #1 Pink - Transporter

SUNDANCE SERVICES, Inc.

P.O. Box 1737 Eunice, New Mexico 88231
(575) 394-2511

TICKET No. 1141

LEASE OPERATOR/SHIPPER/COMPANY: SIG

LEASE NAME: 6" Natural Expenditure Pass Line

TRANSPORTER COMPANY: | **TIME** 12:57 AM/PM

DATE: 9-22-11 **VEHICLE NO:** 9 | **GENERATOR COMPANY MAN'S NAME:** A. Smiley

CHARGE TO: SIG | **RIG NAME AND NUMBER**

TYPE OF MATERIAL

[ ] Production Water	[ ] Drilling Fluids	[ ] Rinsate
[ ] Tank Bottoms	[X] Contaminated Soil	[ ] Jet Out
[ ] Solids	[ ] BS&W Content:	[ ] Call Out

Description: OIL

RRC or API # **C-133#**

VOLUME OF MATERIAL [ ] **BBLS.** : [X] **YARD** 12 : [ ]

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DRIVER: _____
(SIGNATURE)

FACILITY REPRESENTATIVE: _____
(SIGNATURE)

White - Sundance Canary - Sundance Acct #1 Pink - Transporter

Appendix D

Release Notification & Corrective Action (Form C-141)

District I
1625 N. French Dr., Hobbs, NM 88240
District II
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

State of New Mexico
Energy Minerals and Natural Resources

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

RECEIVED
MAR 08 2011
HOBBSOCD

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	Southern Union Gas Services	Contact	Curt Stanley
Address	801 S. Loop 464, Monahans, TX 79756	Telephone No.	575-390-7595
Facility Name	6 inch Lateral	Facility Type	Natural Gas Pipeline

Surface Owner State of New Mexico		Lease No. 30-025-38822

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	2	22S	37E					Lea

Latitude 32 degrees 25.341' North **Longitude** 103 degrees 08.405 West

NATURE OF RELEASE

Type of Release Natural Gas, Crude Oil and Produced Water	Volume of Release 7 BBLS	Volume Recovered None
Source of Release Natural Gas Pipeline	Date and Hour of Occurrence February 23, 2011 – Time Unknown	Date and Hour of Discovery February 23, 2011 – 0700 hours
Was Immediate Notice Given? ☒ Yes ☐ No ☒ Not Required	If YES, To Whom? Geoffrey Leking – NMOCD Hobbs District Office	
By Whom? Curt Stanley	Date and Hour February 23, 2011 – 1554 hours	
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.*
A six (6)-inch low pressure natural gas pipeline developed a leak due to internal corrosion of the pipeline, resulting in a release of natural gas, crude oil and produced water. During initial response activities the pipeline was fitted with a temporary pipeline clamp to mitigate the release. Following initial response activities, the affected pipeline segment will be slip lined.

Describe Area Affected and Cleanup Action Taken.*
The affected area is approximately 1,500 square feet and occupies a caliche well pad. The release will be remediated according to NMOCD regulatory guidelines.

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: Curt D. Stanley

Printed Name: Curt D. Stanley

Title: EHS Compliance Specialist

E-mail Address: curt.stanley@sug.com

Date: February 28, 2011 Phone: 575-390-7595

OIL CONSERVATION DIVISION

Approved by ~~District Supervisor:~~ ENVENGINEER: Geoffrey Leking

Approval Date: 03/08/11 Expiration Date: 05/08/11

Conditions of Approval: SUBMIT FINAL C-141 BY 05/08/11.

Attached ☐
IRP-03-11-2690

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
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

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	Southern Union Gas Services, Ltd.	Contact	Crystal Callaway
Address	801 S. Loop 464, Monahans, TX, 79756	Telephone No.	(817) 302-9407
Facility Name	6 inch Lateral	Facility Type	Natural Gas Pipeline

Surface Owner State of New Mexico		Lease No. 30-025-38822

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	2	22S	37E					Lea

Latitude 32 degrees 25.341' Longitude 103 degrees 08.405'

NATURE OF RELEASE

Type of Release Natural Gas, Crude Oil and Produced water	Volume of Release 7 bbls	Volume Recovered None
Source of Release Natural Gas Pipeline	Date and Hour of Occurrence February 23, 2011 – Time Unknown	Date and Hour of Discovery February 23, 2011 – 0700 hours
Was Immediate Notice Given? ☒ Yes ☐ No ☒ Not Required	If YES, To Whom? Geoffrey Leking – NMOCD Hobbs District Office	
By Whom? Curt Stanley	Date and Hour: February 23, 2011 – 1554 hours	
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:
A six (6)-inch low pressure natural gas pipeline developed a leak due to internal corrosion of the pipeline, resulting in the release of natural gas, crude oil and produced water. During initial response activities the pipeline was fitted with a temporary pipeline clamp to mitigate the release. The pipeline has since been repaired.

Describe Area Affected and Cleanup Action Taken. The affected area is approximately 1,500 square feet and occupies a caliche well pad. The release was remediated in accordance with NMOCD regulatory guidelines.

Please see the attached Basin Environmental Services Technologies *Remediation Summary and Site Closure Request* for details of remedial activities and laboratory analytical reports from confirmation soil samples.

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: Crystal Callaway	OIL CONSERVATION DIVISION
Printed Name: Crystal Callaway	Approved by District Supervisor:
Title: Senior Environmental Remediation Specialist	Approval Date: / Expiration Date:
E-mail Address: Crystal.Callaway@Regencygas.com	Conditions of Approval:
Date: ~~10/28/14~~ 11/3/14 Phone: (817) 302-9407	