

**NM2 - \_\_\_\_\_19\_\_\_\_\_**

**MONITORING  
REPORTS  
YEAR(S):**

**\_\_\_\_2010\_\_\_\_**



801 S. Loop 464  
Monahans, Texas 79756  
432.943.1100 Fax: 432.943.1101  
RECEIVED OGD

2011 FEB 28 P 1:50

February 25, 2011

Mr. Brad Jones  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

Re: Annual Report - 2010  
Southern Union Gas Services  
Southern Union Landfarm - Permit #NM-02-0019  
SE ¼ of the NW ¼ of Section 36, Township 23 South, Range 36 East  
Lea County, New Mexico

Mr. Jones,

Enclosed is the Southern Union Gas Services Landfarm facility "Annual Report - 2010", dated February 18, 2011. The Southern Union Gas Services Landfarm is located in Unit Letter "F", Section 36, Township 23 South, Range 36 East, in rural Lea County, New Mexico.

I have personally reviewed this document, prepared by Basin Environmental Service Technologies on behalf of Southern Union Gas Services, and believe the facts are true and accurate to the best of my knowledge and ability. If you have any questions or comments, please contact me at 575-390-7595 or by email at [curt.stanley@sug.com](mailto:curt.stanley@sug.com).

Respectfully submitted,

A handwritten signature in black ink that reads "Curt D. Stanley". The signature is written in a cursive, flowing style.

Curt D. Stanley  
EHS Compliance Specialist  
Southern Union Gas Services, Ltd  
801 S. Loop 464  
Monahans, Texas 79756  
[curt.stanley@sug.com](mailto:curt.stanley@sug.com)

Cc:  
Edward J. Hansen - NMOCD - Santa Fe, New Mexico  
SUG Environmental Files

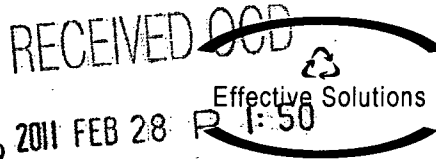
Enclosure



# ***Basin Environmental Service Technologies, LLC***

3100 Plains Highway  
P. O. Box 301  
Lovington, New Mexico 88260  
bjarguijo@basinenv.com  
Office: (575) 396-2378

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## **Annual Report - 2010**

### **SOUTHERN UNION GAS SERVICES**

**Southern Union Landfarm**

**Lea County, New Mexico**

**Permit # NM-02-0019**

**UNIT LTR "F" (SE ¼ of the NW ¼ ), Section 36, Township 23 South, Range 36 East**

Prepared For:

Southern Union Gas Services  
1507 W. 15th Street  
Monahans, TX 79756

Prepared By:

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

**February 2011**

A handwritten signature in black ink, appearing to read "Ben J. Arguijo", written over a horizontal line.

Ben J. Arguijo  
Project Manager

# ***Basin Environmental Service Technologies, LLC***

3100 Plains Highway  
P. O. Box 301  
Lovington, New Mexico 88260  
bjarguijo@basinenv.com  
Office: (575) 396-2378 Fax: (575) 396-1429



February 18, 2011

Mr. Brad Jones  
New Mexico Energy, Minerals and Natural Resources Department  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

Re: Annual Report – 2010  
Southern Union Gas Services  
Southern Union Landfarm – Permit #NM-02-0019  
SE ¼ of the NW ¼ of Section 36, Township 23 South, Range 36 East  
Lea County, New Mexico

Dear Mr. Jones:

Basin Environmental Service Technologies, LLC (Basin), at the request of Southern Union Gas Services (Southern Union), assumed maintenance and reporting responsibilities of the Southern Union Landfarm in December 2009. Basin, on behalf of Southern Union, is submitting the *2010 Annual Report* for the Southern Union Landfarm. The Southern Union Landfarm is operated and maintained in accordance with New Mexico Oil Conservation Division (NMOCD), Natural Resources and Wildlife, Oil and Gas Surface Waste Management Facilities (Title 19 Chapter 15 Part 36). The Landfarm is operated by Southern Union as a “centralized” facility for Southern Union use only. Sample location maps of the Southern Union Landfarm are provided as Figure 1, “Sample Location Map – June 2010”, and Figure 2, “Sample Location Map – December 2010”.

## **DISPOSAL VOLUME**

Receipt of impacted soil began in January 2002. As of December 31, 2010, a total of approximately 65,815 cubic yards (cy) of impacted soil from within the Southern Union gas transportation system have been emplaced in Cell 1 through Cell 15. Approximately 834 cy of impacted soil was transported to the Southern Union Landfarm during the 2010 reporting period.

## **MAINTENANCE**

Within 72-hours of being delivered to the landfarm, soil stockpiles were pushed down and contoured into a treatment lift. Mechanical plowing of the soil contained in the treatment cells occurred every two weeks.

## **TREATMENT ZONE MONITORING**

On June 14, 2010, Basin collected one (1) to five (5) four-point composite treatment zone soil samples from each of the treatment cells (Cells 1 through 15) being utilized. The soil samples were analyzed for concentrations of Total Petroleum Hydrocarbons (TPH) and chloride, using EPA Method SW-846 8015M and EPA Method 300.1, respectively. Analytical results indicated TPH concentrations ranged from 48.4 mg/Kg for soil sample TZ Cell 14 G1 to 5,345 mg/Kg for soil sample TZ Cell 3 G3. Chloride concentrations ranged from 5.37 mg/Kg for soil samples TZ Cell 3 G-4, TZ Cell 5 G-1, TZ Cell 6 G-1, TZ Cell 10 G-1 through G-4, TZ Cell 12 G-1, and TZ Cell 14 G-1 to 469 mg/Kg for soil sample TZ Cell 11 G1. Please reference Table 1, "Concentrations of TPH & Chloride in the Treatment Zone", for additional information.

On November 25 through 26, 2010, as approved by the NMOCD, approximately 1,500 cy of chloride-impacted soil was excavated from the treatment zone of Cell 8 - Grid 1 and transported to Sundance Services, Inc. (NMOCD Permit # NM-01003), for disposal. Remediation activities were summarized in the report entitled "Remediation Summary - Removal of 1,500 cubic yards of Chloride Impacted Soil", dated January 12, 2011.

On December 1, 2010, Basin collected one (1) to five (5) four-point composite treatment zone soil samples from each of the treatment cells (Cells 1 through 15) being utilized, with the exception of Cell 8 - Grid 1. The soil samples were analyzed for concentrations of TPH and chloride. Analytical results indicated TPH concentrations ranged from 55.3 mg/Kg for soil sample TZ Cell 9 G1 to 4,757 mg/Kg for soil sample TZ Cell 3 G2. Chloride concentrations ranged from less than the laboratory Method Detection Limit (MDL) for soil sample TZ Cell 3 G4 to 425 mg/Kg for soil sample TZ Cell 13 G1.

The locations of soil samples collected from the treatment zone of Cells 1 through 15 during the June 2010 and December 2010 sampling events are depicted in Figure 1, "Sample Location Map - June 2010", and Figure 2, "Sample Location Map - December 2010", respectively.

## **VADOSE ZONE MONITORING**

A single soil sample (Landfarm Background) was collected on April 11, 2001, from the vadose zone in an undisturbed location within the Landfarm area to establish background concentrations of NMOCD constituents of concern (COCs) as listed below:

- Total petroleum hydrocarbons (TPH);
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX);
- Anions and cations; and
- RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver).

Analytical results of the background sample indicated the TPH concentration was 134 mg/Kg. Anions, cations, and RCRA metals concentrations of background samples were typical of native undisturbed soil. Please reference Table 2, "Historic Concentrations of Hydrocarbons, Chlorides, Sulfates & Alkalinity in the Vadose Zone", and Table 3, "Historic Concentrations of Metals in the Vadose Zone", for additional information.

On June 15, 2010, Basin collected one (1) to five (5) grab samples from the vadose zone of Cells 1 through 15 at a depth of approximately three (3) to four (4) feet below ground surface (bgs). The soil samples were analyzed for concentrations of BTEX using EPA Method SW-846 8021b, TPH using EPA Method SW-846 8015M, and chloride using EPA Method 300.1. Analytical results indicated benzene,

BTEX, and TPH concentrations were less than the appropriate laboratory MDL for each soil sample submitted. Chloride concentrations ranged from less than the laboratory MDL for soil sample VZ Cell 1 G5, VZ Cell 3 G1, VZ Cell 3 G3, VZ Cell 3 G5, VZ Cell 4 G1 through VZ Cell 4 G5, VZ Cell 5 G1, VZ Cell 6 G1, and VZ Cell 9 G1 through VZ Cell 9 G5 to 71 mg/Kg for soil sample VZ Cell 13 G1. Please reference Table 4, "2010 Concentrations of Benzene, BTEX, TPH & Chloride in the Vadose Zone", for additional information.

On December 1, 2010, Basin collected one (1) to five (5) grab samples from the vadose zone of Cells 1 through 15 at a depth of approximately three (3) to four (4) feet bgs. The soil samples were analyzed for concentrations of BTEX, TPH, and chloride. Analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for each soil sample submitted. Chloride concentrations ranged from less than the laboratory MDL for soil sample VZ Cell 2 G-4, VZ Cell 3 G-1 through VZ Cell 3 G-5, VZ Cell 4 G-1 through VZ Cell 4 G-5, VZ Cell 5 G-1, VZ Cell 6 G-1, VZ Cell 7 G-1, VZ Cell 9 G-1, VZ Cell 9 G-5, VZ Cell 10 G-4, and VZ Cell 14 G-1 to 84.7 mg/Kg for soil sample VZ Cell 1 G3.

The locations of soil samples collected in the vadose zone of Cells 1 through 15 during the June 2010 and December 2010 sampling events are depicted in Figure 1, "Sample Location Map – June 2010", and Figure 2, "Sample Location Map – December 2010", respectively.

## **CONCLUSIONS**

Laboratory analytical results of vadose zone soil sampling indicate soil beneath the Southern Union Landfarm has not been significantly affected above background levels established prior to the construction of the landfarm treatment cells.

Laboratory analytical results indicate hydrocarbon-impacted soil placed in the treatment cells is naturally attenuating within the lifts. Laboratory analytical results from soil samples collected on December 1, 2010, indicated soil samples TZ Cell 2 G-2 and G-4, TZ Cell 5 G-1, TZ Cell 6 G-1 and G-2, TZ Cell 7 G-1, TZ Cell 9 G-1, TZ Cell 9 G-3 through G-5, TZ Cell 10 G-2 and G-3, TZ Cell 11 G-1 and G-2, TZ Cell 12 G-1, TZ Cell 13 G-1, TZ Cell 14 G-1, and TZ Cell 15 G-1 exhibited TPH concentrations less than NMOCD remedial goals (500 mg/Kg).

## **RECOMMENDATIONS**

Based on the analytical results of soil samples collected from Treatment Cells #5, #6, #7, #11, #12 and #15, Basin recommends Southern Union request NMOCD approval to commence activities outlined in Subsection F of 19.15.36.15 New Mexico Administrative code (NMAC), "Treatment Zone Closure Performance Standards". The activities outlined in Subsection F of 19.15.36.15 NMAC are required to demonstrate compliance with the closure performance standards, cease further remediation activities within the individual treatment cell(s), and leave the above referenced soils in place.

Basin, on behalf of Southern Union, proposes to collect one (1) composite soil sample, consisting of four (4) discreet samples from each of the six (6) treatment zones exhibiting benzene, BTEX, TPH, and chloride concentrations less than the treatment zone closure performance standards. The collected soil samples will be submitted to the laboratory and analyzed for concentrations of constituents listed in Subsection F of 19.15.36.15 NMAC. In addition, the soil samples will be analyzed for the concentrations of constituents listed in Subsections A and B of 20.6.2.3103 NMAC.

On receipt and evaluation of the analytical results, Southern Union will forward the analytical results to the New Mexico Energy, Minerals and Natural Resources Department and may request approval to cease remediation activities within individual treatment cells which demonstrate compliance with Subsection F of 19.15.36.15 NMAC and Subsections A and B of 20.6.2.3103 NMAC.

Until otherwise instructed by the Mexico Energy, Minerals and Natural Resources Department, bi-monthly plowing of the treatment zones will continue throughout the 2011 reporting period. Soil samples from the vadose and treatment zones will be collected and submitted to the laboratory for determination of constituent concentrations on a bi-annual schedule. Vadose zone soil samples will be analyzed using EPA Method SW-846 8021b (BTEX), EPA Method SW-846 8015M (TPH), and EPA Method 300.1 (chloride). Treatment zone soil samples will be analyzed using EPA Method SW-846 8015M (TPH) and EPA Method 300.1 (chloride). An Annual Report will be submitted in 2012, documenting the analytical results of the 2011 treatment cell and vadose zone sampling events.

Should you have any questions or concerns, please contact Rose Slade at (432) 940-5147 or me at (575) 396-2378.

Respectfully,

Ben J. Arguijo  
Basin Environmental Service Technologies, LLC

Cc: Ed Hansen, NMOCD-Santa Fe, New Mexico (edwardj.hansen@state.nm.us)  
Rose Slade, Southern Union Gas Services, Monahans, Texas (rose.slade@sug.com)

Enclosures:

**Figures**

Figure 1: Sample Location Map – June 2010

Figure 2: Sample Location Map – December 2010

**Tables**

Table 1: 2010 Concentrations of Benzene, BTEX, TPH & Chloride in the Treatment Zone.

Table 2: Historic Concentrations of Hydrocarbons, Chlorides, Sulfates & Alkalinity in the Vadose Zone.

Table 3: Historic Concentrations of Metals in the Vadose Zone

Table 4: 2010 Concentrations of Benzene, BTEX, TPH & Chloride in the Vadose Zone

**Laboratory Analytical Reports**

**Photographs**

## **LIMITATIONS**

Basin Environmental Service Technologies, LLC has prepared this Southern Union Landfarm Annual Report 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.

# Figures

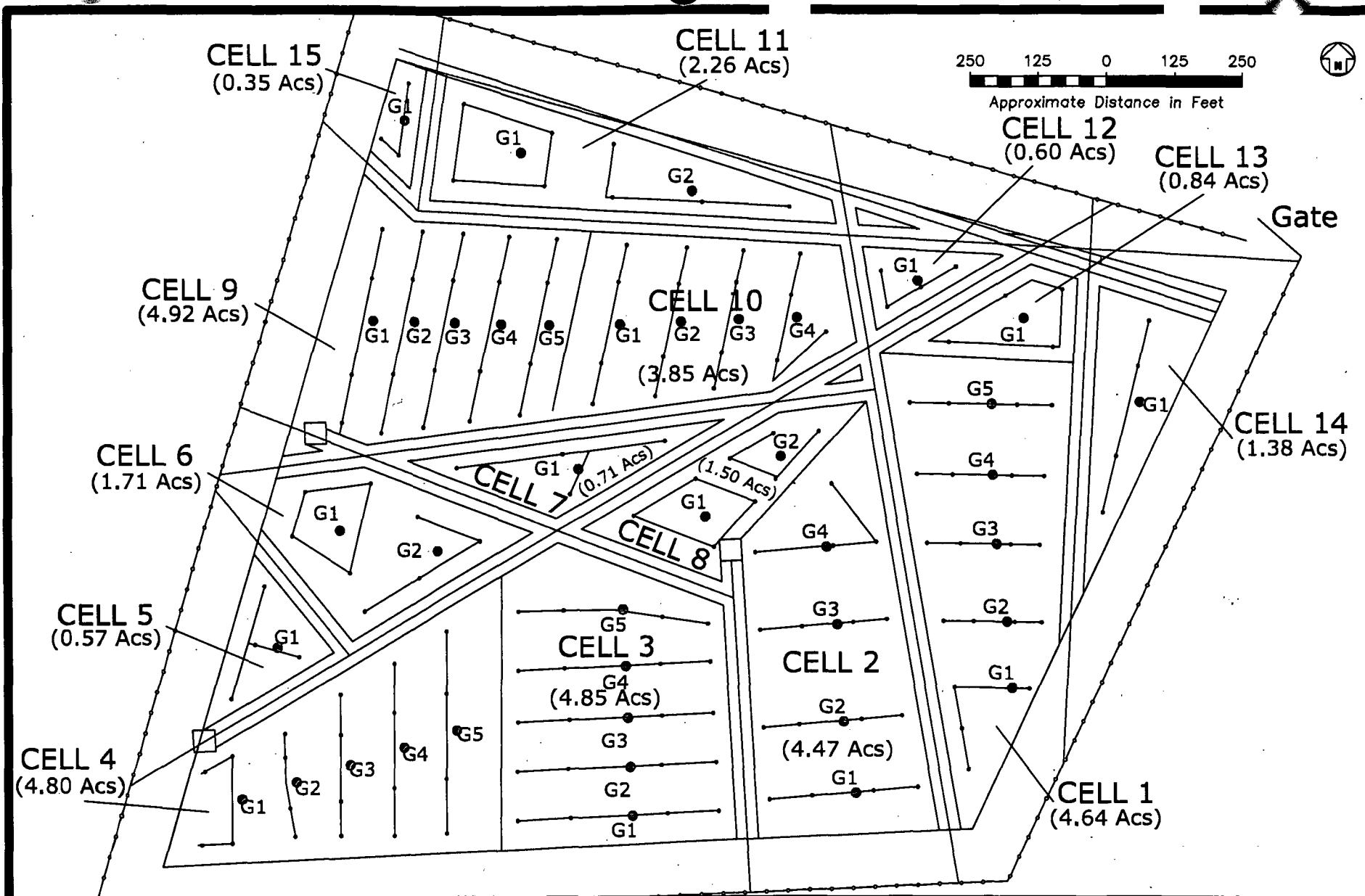


Figure 1  
Sample Location Map - June 2010  
Southern Union Gas Services  
Landfarm  
Lea County, New Mexico  
NMOCD Permit # NM02-0019

Basin Environmental Service Technologies, LLC

Prep By: BJA

Checked By: BRB

January 5, 2010

Scale: Approximately 1"=100'



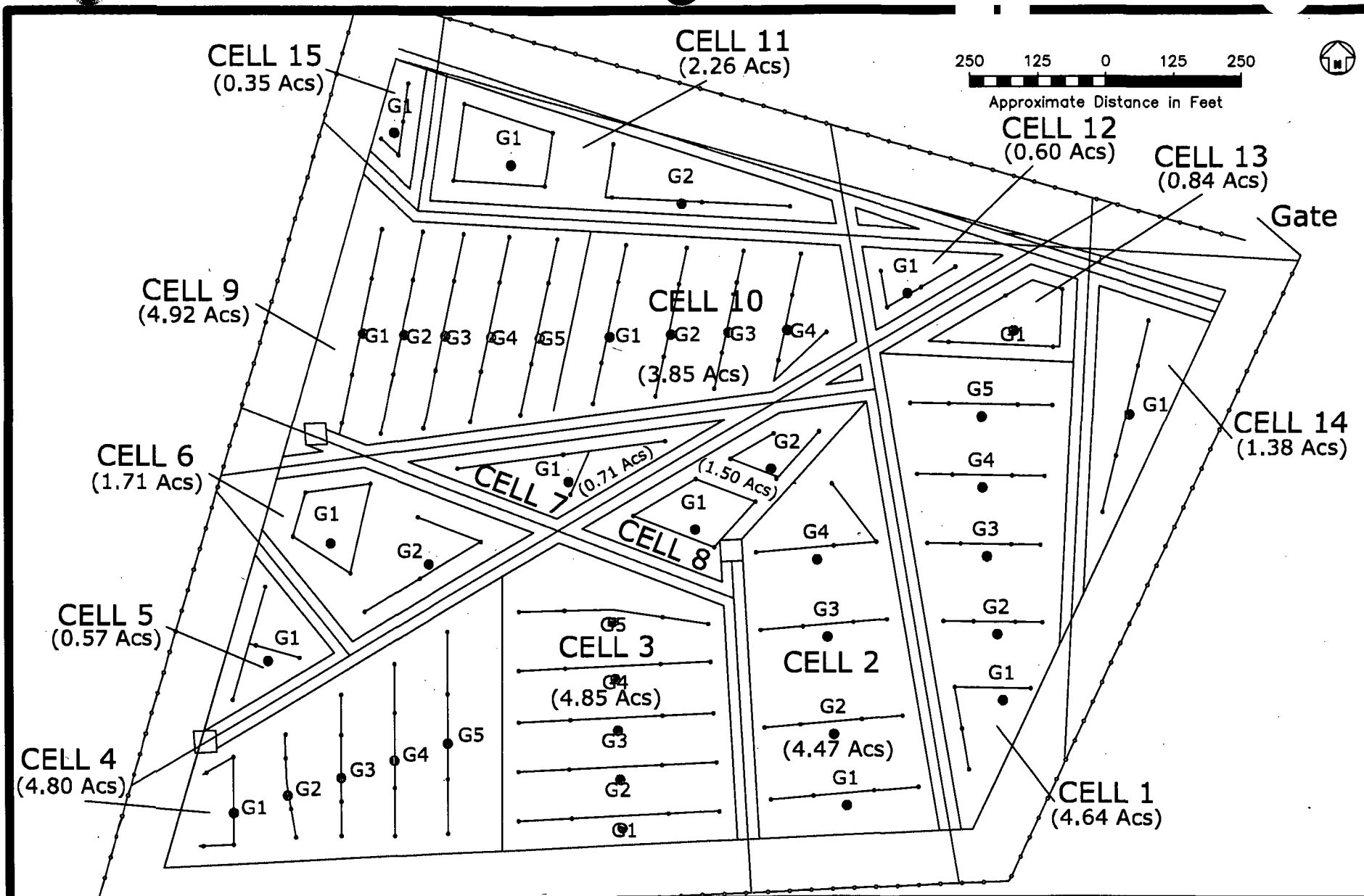


Figure 2

Sample Location Map  
December 2010  
Southern Union Gas Services  
Landfarm  
Lea County, New Mexico  
NMOCD Permit # NM02-0019

Basin Environmental Service Technologies, LLC

Prep By: BJA	Checked By: BRB
February 18, 2011	Scale: Approximately 1"=100'

Legend:

- Pipeline
- Fenceline
- Landfarm Extent
- Individual Cell Extent
- Vadose Zone Sample Location

— Treatment Zone Composite  
● Sample Location

## **Tables**

TABLE 1

## 2010 CONCENTRATIONS OF TPH &amp; CHLORIDE IN THE TREATMENT ZONE

SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO  
NMOCD PERMIT #NM-02-0019

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	EPA 300 Chloride (mg/kg)
			GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)		
TZ Cell 1 G1	-	6/14/2010	<15.9	727	82.2	809	40.9
TZ Cell 1 G2	-	6/14/2010	<15.8	672	89.2	761	83.2
TZ Cell 1 G3	-	6/14/2010	<78.5	1,310	157	1,467	161
TZ Cell 1 G4	-	6/14/2010	<76.5	1,720	253	1,973	186
TZ Cell 1 G5	-	6/14/2010	<16.3	240	30.5	270.5	136
TZ Cell 2 G1	-	6/14/2010	<15.5	1220	189	1,409	24
TZ Cell 2 G2	-	6/14/2010	<15.6	584	92.8	676.8	126
TZ Cell 2 G3	-	6/14/2010	<16.3	154	24.7	178.7	135
TZ Cell 2 G4	-	6/14/2010	<15.6	372	98.7	470.7	152
TZ Cell 3 G1	-	6/14/2010	<154	3,540	373	3,913	21.5
TZ Cell 3 G2	-	6/14/2010	<154	3420	364	3,784	22.7
TZ Cell 3 G3	-	6/14/2010	<159	4,830	515	5,345	26.7
TZ Cell 3 G4	-	6/14/2010	<169	4,440	488	4,928	15.6
TZ Cell 3 G5	-	6/14/2010	<153	4540	506	5,046	15.1
TZ Cell 4 G1	-	6/14/2010	<155	3830	304	4,134	37.7
TZ Cell 4 G2	-	6/14/2010	<154	1,910	<154	1,910	36.1
TZ Cell 4 G3	-	6/14/2010	<160	3460	276	3,736.0	41
TZ Cell 4 G4	-	6/14/2010	<154	2170	167	2,337.0	126
TZ Cell 4 G5	-	6/14/2010	<153	3170	276	3,446.0	75.9
TZ Cell 5 G1	-	6/14/2010	<15.4	73.1	29.4	102.5	12.5
TZ Cell 6 G1	-	6/14/2010	<15.4	286	77.2	363.2	48.9
TZ Cell 6 G2	-	6/14/2010	<15.5	347	68	415	98
TZ Cell 7 G1	-	6/14/2010	<15.8	525	77.9	602.9	15.5
TZ Cell 8 G1	-	6/14/2010	<15.7	650	88.9	739	81.2
TZ Cell 8 G2	-	6/14/2010	<16.3	537	87	624	146
TZ Cell 9 G1	-	6/14/2010	<15.5	238	62.3	300.3	110
TZ Cell 9 G2	-	6/14/2010	<15.4	1250	135	1,385.0	407
TZ Cell 9 G3	-	6/14/2010	<15.5	286	60.7	346.7	229
TZ Cell 9 G4	-	6/14/2010	<15.4	277	78.6	355.6	206
TZ Cell 9 G5	-	6/14/2010	<15.4	164	42	206.0	55.9

TABLE 1

## 2010 CONCENTRATIONS OF TPH &amp; CHLORIDE IN THE TREATMENT ZONE

SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO  
NMOCD PERMIT #NM-02-0019

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	EPA 300 Chloride (mg/kg)
			GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)		
TZ Cell 10 G1	-	6/14/2010	<15.5	600	135	735.0	16.7
TZ Cell 10 G2	-	6/14/2010	<15.5	329	80.5	409.5	11.3
TZ Cell 10 G3	-	6/14/2010	<15.2	200	58.2	258.2	25.7
TZ Cell 10 G4	-	6/14/2010	<15.3	576	137	713.0	44.8
TZ Cell 11 G1	-	6/14/2010	85.9	1510	123	1,718.9	469
TZ Cell 11 G2	-	6/14/2010	<15.4	202	19.9	221.9	169
TZ Cell 12 G1	-	6/14/2010	<15.6	449	78.1	527.1	47.3
TZ Cell 13 G1	-	6/14/2010	<15.7	288	71.6	359.6	347
TZ Cell 14 G1	-	6/14/2010	<16.9	48.4	<16.9	48.4	5.37
TZ Cell 15 G1	-	6/14/2010	<16.2	209	82.2	291	79.7
TZ Cell 1 G-1		12/1/2010	<15.4	724	50.4	774.4	34
TZ Cell 1 G-2		12/1/2010	<15.6	855	85.5	940.5	59
TZ Cell 1 G-3		12/1/2010	<15.5	978	34	1,012.0	187
TZ Cell 1 G-4		12/1/2010	<15.7	826	16.2	842.2	83.2
TZ Cell 1 G-5		12/1/2010	<15.3	962	43.3	1,005.3	113
TZ Cell 2 G-1		12/1/2010	<15.6	733	35.6	768.6	11.2
TZ Cell 2 G-2		12/1/2010	<15.5	387	25.3	412.3	54.3
TZ Cell 2 G-3		12/1/2010	<15.4	481	42.1	523.1	70.5
TZ Cell 2 G-4		12/1/2010	<15.5	319	28	347.0	55.2
TZ Cell 3 G-1		12/1/2010	<15.3	3070	58.9	3,128.9	9.53
TZ Cell 3 G-2		12/1/2010	<15.2	4470	287	4,757.0	9.39
TZ Cell 3 G-3		12/1/2010	<15.1	3490	112	3,602.0	10.6
TZ Cell 3 G-4		12/1/2010	<15.2	4340	220	4,560.0	<8.55
TZ Cell 3 G-5		12/1/2010	<15.4	3830	54.9	3,884.9	10.8
TZ Cell 4 G-1		12/1/2010	<15.3	3120	52.6	3,172.6	32.6
TZ Cell 4 G-2		12/1/2010	<15.4	3240	36.6	3,276.6	33.6
TZ Cell 4 G-3		12/1/2010	<15.3	3180	64.5	3,244.5	43.1
TZ Cell 4 G-4		12/1/2010	<15.4	2330	47.9	2,377.9	80.6
TZ Cell 4 G-5		12/1/2010	<15.3	2470	41.7	2,511.7	74.6
TZ Cell 5 G-1		12/1/2010	<15.1	143	51.6	194.6	<4.26

TABLE 1

## 2010 CONCENTRATIONS OF TPH &amp; CHLORIDE IN THE TREATMENT ZONE

SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO  
NMOCD PERMIT #NM-02-0019

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	EPA 300 Chloride (mg/kg)
			GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)		
TZ Cell 6 G-1		12/1/2010	<15.4	207	24.3	231.3	<17.2
TZ Cell 6 G-2		12/1/2010	<15.3	276	21.1	297.1	81.4
TZ Cell 7 G-1		12/1/2010	<15.8	166	16.2	182.2	5.69
TZ Cell 8 G-2		12/1/2010	<15.5	556	41.1	597.1	24.3
TZ Cell 9 G-1		12/1/2010	<15.3	55.3	<15.3	55.3	84
TZ Cell 9 G-2		12/1/2010	<15.3	689	54.1	743.1	263
TZ Cell 9 G-3		12/1/2010	<15.4	312	41.4	353.4	58.8
TZ Cell 9 G-4		12/1/2010	<15.3	335	40.3	375.3	56.3
TZ Cell 9 G-5		12/1/2010	<15.3	199	22.6	221.6	33.5
TZ Cell 10 G-1		12/1/2010	<15.2	643	76.3	719.3	<4.25
TZ Cell 10 G-2		12/1/2010	<15.3	265	40	305.0	<8.56
TZ Cell 10 G-3		12/1/2010	<15.2	185	27.3	212.3	<8.54
TZ Cell 10 G-4		12/1/2010	<15.3	905	95.3	1,000.3	<8.59
TZ Cell 11 G-1		12/1/2010	<15.3	362	15.3	377.3	215
TZ Cell 11 G-2		12/1/2010	<15.5	181	17.8	198.8	44.1
TZ Cell 12 G-1		12/1/2010	<15.6	374	42.4	416.4	<43.5
TZ Cell 13 G-1		12/1/2010	<15.9	185	16.2	201.2	425
TZ Cell 14 G-1		12/1/2010	<15.3	127	15.6	142.6	<4.27
TZ Cell 15 G-1		12/1/2010	<15.7	218	29.7	247.7	26.2

TABLE 2

## HISTORIC CONCENTRATIONS OF HYDROCARBONS, CHLORIDES, SULFATES &amp; ALKALINITY IN THE VADOSE ZONE

SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M,P-XYLENES (mg/Kg)	O-XYLENES (mg/Kg)	BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)	TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)
Landfarm Background	2' bgs	4/11/2001	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	-	-	134.0

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SODIUM (mg/kg)	CALCIUM (mg/Kg)	MAGNESIUM (mg/Kg)	POTASSIUM (mg/Kg)	CHLORIDE (mg/Kg)	SULFATE (mg/Kg)	CARBONATE (mg/Kg)	BICARBONATE (mg/Kg)
Landfarm Background	2' bgs	4/11/2001	14.4	73.54	8.54	11.24	<10	35.2	<1.0	140

**TABLE 3**

**HISTORIC CONCENTRATIONS OF METALS IN THE VADOSE ZONE**

**SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO**

<b>SAMPLE LOCATION</b>	<b>SAMPLE DEPTH (bgs)</b>	<b>SAMPLE DATE</b>	<b>SILVER (mg/Kg)</b>	<b>ARSENIC (mg/Kg)</b>	<b>BARIUM (mg/Kg)</b>	<b>CADMIUM (mg/Kg)</b>	<b>CHROMIUM (mg/Kg)</b>	<b>MERCURY (mg/Kg)</b>	<b>LEAD (mg/Kg)</b>	<b>SELENIUM (mg/Kg)</b>
Landfarm Background	2' bgs	4/11/2001	ND	0.923	47.92	0.3605	4.21	ND	ND	1.959

TABLE 4

## 2010 CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDE IN THE VADOSE ZONE

SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO  
NMOCD PERMIT #NM-02-0019

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	EPA 300 Chloride (mg/kg)
			BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M,P-XYLENES (mg/Kg)	O-XYLENES (mg/Kg)	BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)		
VZ Cell 1 G1	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.7	<16.7	<16.7	<16.7	24.1
VZ Cell 1 G2	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	11
VZ Cell 1 G3	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.9	<16.9	<16.9	<16.9	10.2
VZ Cell 1 G4	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.1	<16.1	<16.1	<16.1	18
VZ Cell 1 G5	3' - 4'	6/15/2010	<0.0012	<0.0024	<0.0012	<0.0024	<0.0012	<0.0024	<17.7	<17.7	<17.7	<17.7	<4.98
VZ Cell 2 G1	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.8	<15.8	<15.8	<15.8	10.9
VZ Cell 2 G2	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<15.7	<15.7	<15.7	<15.7	6.44
VZ Cell 2 G3	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	9.08
VZ Cell 2 G4	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.8	<15.8	<15.8	<15.8	6.88
VZ Cell 3 G1	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.9	<15.9	<15.9	<15.9	<4.49
VZ Cell 3 G2	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	<15.5	<15.5	<15.5	48
VZ Cell 3 G3	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	<4.42
VZ Cell 3 G4	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	12
VZ Cell 3 G5	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.8	<15.8	<15.8	<15.8	<4.45
VZ Cell 4 G1	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.6	<16.6	<16.6	<16.6	<9.32
VZ Cell 4 G2	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	<15.5	<15.5	<15.5	<4.34
VZ Cell 4 G3	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.4	<16.4	<16.4	<16.4	<4.61
VZ Cell 4 G4	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	<4.38
VZ Cell 4 G5	3' - 4'	6/15/2010	<0.0010	<0.0020	<0.0010	<0.0020	<0.0010	<0.0020	<15.4	<15.4	<15.4	<15.4	<4.34
VZ Cell 5 G1	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	<4.50
VZ Cell 6 G1	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.9	<15.9	<15.9	<15.9	<4.48
VZ Cell 6 G2	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	<16.5	<16.5	<16.5	5.61
VZ Cell 7 G1	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	5.27



TABLE 4

## 2010 CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDE IN THE VADOSE ZONE

SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO  
NMOCD PERMIT #NM-02-0019

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	EPA 300 Chloride (mg/kg)
			BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M,P-XYLENES (mg/Kg)	O-XYLENES (mg/Kg)	BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)		
VZ Cell 8 G1	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	49.9
VZ Cell 8 G2	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.8	<15.8	<15.8	<15.8	33.4
VZ Cell 9 G1	3' - 4'	6/15/2010	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<17.4	<17.4	<17.4	<17.4	<4.89
VZ Cell 9 G2	3' - 4'	6/15/2010	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<17.1	<17.1	<17.1	<17.1	<4.81
VZ Cell 9 G3	3' - 4'	6/15/2010	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<16.9	<16.9	<16.9	<16.9	<4.75
VZ Cell 9 G4	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.4	<15.4	<15.4	<15.4	<4.33
VZ Cell 9 G5	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	<4.49
VZ Cell 10 G1	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	54.7
VZ Cell 10 G2	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.4	<16.4	<16.4	<16.4	43.3
VZ Cell 10 G3	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	20.6
VZ Cell 10 G4	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	<16.5	<16.5	<16.5	5.73
VZ Cell 11 G1	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	8.67
VZ Cell 11 G2	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.8	<15.8	<15.8	<15.8	15.6
VZ Cell 12 G1	3' - 4'	6/15/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.4	<16.4	<16.4	<16.4	12.4
VZ Cell 13 G1	3' - 4'	6/15/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.8	<15.8	<15.8	<15.8	71
VZ Cell 14 C1	3' - 4'	6/15/2010	<0.0013	<0.0027	<0.0013	<0.0027	<0.0013	<0.0027	<20.1	<20.1	<20.0	<20.1	8.05
VZ Cell 15 G1	3' - 4'	6/15/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.1	<16.1	<16.1	<16.1	28
VZ Cell 1 G-1	3' - 4'	12/1/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.1	<16.1	<16.1	<16.1	10.6
VZ Cell 1 G-2	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.1	<16.1	<16.1	<16.1	34.0
VZ Cell 1 G-3	3' - 4'	12/1/2010	<0.006	<0.0120	<0.006	<0.0120	<0.0060	<0.0120	<18.0	<18.0	<18.0	<18.0	84.7
VZ Cell 1 G-4	3' - 4'	12/1/2010	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<16.9	<16.9	<16.9	<16.9	117
VZ Cell 1 G-5	3' - 4'	12/1/2010	<0.001	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.6	<15.6	<15.6	<15.6	19.3

TABLE 4

## 2010 CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDE IN THE VADOSE ZONE

SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO  
NMOCD PERMIT #NM-02-0019

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	EPA 300 Chloride (mg/kg)
			BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M,P-XYLENES (mg/Kg)	O-XYLENES (mg/Kg)	BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)		
VZ Cell 2 G-1	3' - 4'	12/1/2010	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<17.4	<17.4	<17.4	<17.4	17.7
VZ Cell 2 G-2	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	5.5
VZ Cell 2 G-3	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.3	<16.3	<16.3	<16.3	18.1
VZ Cell 2 G-4	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	<16.5	<16.5	<16.5	<9.24
VZ Cell 3 G-1	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	<16.5	<16.5	<16.5	<9.21
VZ Cell 3 G-2	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.6	<16.6	<16.6	<16.6	<9.29
VZ Cell 3 G-3	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.6	<16.6	<16.6	<16.6	<9.32
VZ Cell 3 G-4	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.3	<16.3	<16.3	<16.3	<9.14
VZ Cell 3 G-5	3' - 4'	12/1/2010	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<16.6	<16.6	<16.6	<16.6	<9.35
VZ Cell 4 G-1	3' - 4'	12/1/2010	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<16.9	<16.9	<16.9	<16.9	<9.51
VZ Cell 4 G-2	3' - 4'	12/1/2010	<0.0011	<0.0023	<0.0011	<0.0023	<0.0011	<0.0023	<16.9	<16.9	<16.9	<16.9	<4.76
VZ Cell 4 G-3	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.7	<16.7	<16.7	<16.7	<9.29
VZ Cell 4 G-4	3' - 4'	12/1/2010	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<17.7	<17.7	<17.7	<17.7	<9.85
VZ Cell 4 G-5	3' - 4'	12/1/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	<8.81
VZ Cell 5 G-1	3' - 4'	12/1/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<15.8	<15.8	<15.8	<15.8	<8.9
VZ Cell 6 G-1	3' - 4'	12/1/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	<4.47
VZ Cell 6 G-2	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	37.0
VZ Cell 7 G-1	3' - 4'	12/1/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.2	<16.2	<16.2	<16.2	<4.51
VZ Cell 8 G-1	3' - 4'	12/1/2010	<0.0109	<0.0218	<0.0109	<0.0218	<0.0109	<0.0218	<16.3	<16.3	<16.3	<16.3	27.6
VZ Cell 8 G-2	3' - 4'	12/1/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	12.3
VZ Cell 9 G-1	3' - 4'	12/1/2010	<0.0012	<0.0023	<0.0012	<0.0023	<0.0012	<0.0023	<17.5	<17.5	<17.5	<17.5	<9.77
VZ Cell 9 G-2	3' - 4'	12/1/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.2	<16.2	<16.2	<16.2	18.3
VZ Cell 9 G-3	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.7	<16.7	<16.7	<16.7	9.9
VZ Cell 9 G-4	3' - 4'	12/1/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.5	<15.5	<15.5	<15.5	10.1
VZ Cell 9 G-5	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.7	<16.7	<16.7	<16.7	<4.7

TABLE 4

## 2010 CONCENTRATIONS OF BENZENE, BTEX, TPH &amp; CHLORIDE IN THE VADOSE ZONE

SOUTHERN UNION GAS SERVICES  
SOUTHERN UNION LAND FARM  
LEA COUNTY, NEW MEXICO  
NMOCD PERMIT #NM-02-0019

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	METHOD: EPA SW 846-8021B, 5030						METHOD: 8015M			TOTAL TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	EPA 300 Chloride (mg/kg)
			BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL-BENZENE (mg/Kg)	M,P-XYLENES (mg/Kg)	O-XYLENES (mg/Kg)	BTEX (mg/Kg)	GRO C <sub>6</sub> -C <sub>12</sub> (mg/Kg)	DRO C <sub>12</sub> -C <sub>28</sub> (mg/Kg)	ORO C <sub>28</sub> -C <sub>35</sub> (mg/Kg)		
VZ Cell 10 G-1	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.2	<16.2	<16.2	<16.2	14.7
VZ Cell 10 G-2	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.7	<16.7	<16.7	<16.7	35.3
VZ Cell 10 G-3	3' - 4'	12/1/2010	<0.0011	<0.0021	<0.0011	<0.0021	<0.0011	<0.0021	<16.0	<16.0	<16.0	<16.0	22.3
VZ Cell 10 G-4	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	<16.5	<16.5	<16.5	<9.25
VZ Cell 11 G-1	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.3	<16.3	<16.3	<16.3	31.1
VZ Cell 11 G-2	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	<16.5	<16.5	<16.5	24.7
VZ Cell 12 G-1	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.4	<16.4	<16.4	<16.4	19.6
VZ Cell 13 G-1	3' - 4'	12/1/2010	<0.0010	<0.0021	<0.0010	<0.0021	<0.0010	<0.0021	<15.7	<15.7	<15.7	<15.7	72.9
VZ Cell 14 G-1	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.8	<16.8	<16.8	<16.8	<9.38
VZ Cell 15 G-1	3' - 4'	12/1/2010	<0.0011	<0.0022	<0.0011	<0.0022	<0.0011	<0.0022	<16.5	<16.5	<16.5	<16.5	10.6

**Laboratory  
Analytical Reports  
(Treatment Zone)**

# Analytical Report 377657

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

22-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
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Lovington, NM 88260

Reference: XENCO Report No: **377657**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377657. 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. 377657 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377657



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 1 G-1	S	Jun-14-10 08:10		377657-001
TZ Cell 1 G-2	S	Jun-14-10 08:20		377657-002
TZ Cell 1 G-3	S	Jun-14-10 08:30		377657-003
TZ Cell 1 G-4	S	Jun-14-10 08:40		377657-004
TZ Cell 1 G-5	S	Jun-14-10 08:50		377657-005



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377657*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811178 Percent Moisture

None

Batch: LBA-811425 Inorganic Anions by EPA 300

None

Batch: LBA-811568 TPH By SW8015 Mod

SW8015MOD\_NM

Batch 811568, C12-C28 Diesel Range Hydrocarbons RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 377657-001, -003, -004, -005, -002.





# Certificate of Analysis Summary 377657

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377657-001	377657-002	377657-003	377657-004	377657-005	
	<i>Field Id:</i>	TZ Cell 1 G-1	TZ Cell 1 G-2	TZ Cell 1 G-3	TZ Cell 1 G-4	TZ Cell 1 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-14-10 08:10	Jun-14-10 08:20	Jun-14-10 08:30	Jun-14-10 08:40	Jun-14-10 08:50	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		40.9 8.89	83.2 8.89	161 8.79	186 8.60	136 9.12	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		5.56 1.00	5.50 1.00	4.43 1.00	2.36 1.00	7.88 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	
	<i>Analyzed:</i>	Jun-19-10 14:42	Jun-19-10 15:09	Jun-19-10 15:37	Jun-19-10 16:05	Jun-19-10 16:32	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 15.9	ND 15.8	ND 78.5	ND 76.5	ND 16.3	
C12-C28 Diesel Range Hydrocarbons		727 15.9	672 15.8	1310 78.5	1720 76.5	240 16.3	
C28-C35 Oil Range Hydrocarbons		82.2 15.9	89.2 15.8	157 78.5	253 76.5	30.5 16.3	
Total TPH		809 15.9	761 15.8	1467 78.5	1973 76.5	271 16.3	

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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 9701 Harry Hines Blvd , Dallas, TX 75220  
 5332 Blackberry Drive, San Antonio TX 78238  
 2505 North Falkenburg Rd, Tampa, FL 33619  
 5757 NW 158th St, Miami Lakes, FL 33014  
 12600 West I-20 East, Odessa, TX 79765  
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377657,

Project ID:

Lab Batch #: 811568

Sample: 566290-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	45.6	50.0	91	70-135	

Lab Batch #: 811568

Sample: 566290-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:47

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.7	122	70-135	
o-Terphenyl	46.6	49.9	93	70-135	

Lab Batch #: 811568

Sample: 566290-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:14

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	49.6	50.1	99	70-135	

Lab Batch #: 811568

Sample: 377657-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 14:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.9	100	98	70-135	
o-Terphenyl	45.9	50.1	92	70-135	

Lab Batch #: 811568

Sample: 377657-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 15:09

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.7	99.7	98	70-135	
o-Terphenyl	45.7	49.9	92	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] =  $100 * A / B$

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

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377657,

Project ID:

Lab Batch #: 811568

Sample: 377657-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 15:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	94.5	100	95	70-135	
o-Terphenyl	48.1	50.0	96	70-135	

Lab Batch #: 811568

Sample: 377657-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 16:05

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.6	99.6	92	70-135	
o-Terphenyl	45.0	49.8	90	70-135	

Lab Batch #: 811568

Sample: 377657-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 16:32

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	213	200	107	70-135	
o-Terphenyl	101	100	101	70-135	

Lab Batch #: 811568

Sample: 377657-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 07:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	221	200	111	70-135	
o-Terphenyl	103	100	103	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] =  $100 \times A / B$

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



## BS / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377657

Analyst: LATCOR

Date Prepared: 06/18/2010

Project ID:

Date Analyzed: 06/18/2010

Lab Batch ID: 811425

Sample: 811425-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.96	100	10	9.96	100	0	75-125	20	

Analyst: BEV

Date Prepared: 06/18/2010

Date Analyzed: 06/19/2010

Lab Batch ID: 811568

Sample: 566290-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1180	118	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	846	85	997	870	87	3	70-135	35	

Relative Percent Difference RPD =  $200 * [(C-F)/(C+F)]$

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377657

Lab Batch #: 811425

Date Analyzed: 06/18/2010

QC- Sample ID: 377603-001 S

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	413	227	648	104	75-125	

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

BRL - Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377657

Lab Batch #: 811425

Date Analyzed: 06/18/2010

QC- Sample ID: 377603-001 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	413	439	6	20	

Lab Batch #: 811178

Date Analyzed: 06/18/2010

QC- Sample ID: 377654-001 D

Reporting Units: %

Date Prepared: 06/18/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.51	1.45	4	20	

Lab Batch #: 811568

Date Analyzed: 06/21/2010

QC- Sample ID: 377657-005 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Analyst: BEV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	16.7	NC	35	
C12-C28 Diesel Range Hydrocarbons	240	503	71	35	F
C28-C35 Oil Range Hydrocarbons	30.5	29.5	3	35	

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

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

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

**Project Manager: Camille Bryant**

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Consulting, LLC**

Project #:

**Company Address: P.O. Box 381**

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (575) 605-7210

**Fax No: (505) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

**e-mail:** [cibryant@basin-consulting.com](mailto:cibryant@basin-consulting.com)

(lab use only)

ORDER #: 377657

[illegible]

**Special Instructions:**

Laboratory Comments:

Relinquished by: <i>Annelle Buzant</i>	Date <i>6/17</i>	Time <i>9:00</i>	Received by: <i>SOOT lower</i>	Date <i>6/17</i>	Time <i>7:00</i>
Relinquished by: <i>SOOT lower</i>	Date <i>6/17</i>	Time <i>1170</i>	Received by:	Date	Time
Relinquished by:	Date	Time	Received by ELOT: <i>Andrew Sam</i>	Date <i>6-17-10</i>	Time <i>11:20</i>

VOCs Free of Headspace?	Y	N
Custody seals on container(s)	Y	N
Sample Hand Delivered	Y	N
by Sampler/Client Rep. ?		N
by Courier? UPS DHL FedEx Lone Star		N
Temperature Upon Receipt:	36	°C





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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377657  
Initials: AL

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

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

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

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

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.6.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

# Analytical Report 377666

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

22-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377666**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377666. 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.

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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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

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## Sample Cross Reference 377666



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 2 G-1	S	Jun-14-10 09:10		377666-001
TZ Cell 2 G-2	S	Jun-14-10 09:20		377666-002
TZ Cell 2 G-3	S	Jun-14-10 09:40		377666-003
TZ Cell 2 G-4	S	Jun-14-10 09:50		377666-004



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377666*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



**Certificate of Analysis Summary 377666**  
**Basin Environmental Consulting, LLC, Lovington, NM**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Camille Bryant

**Project Location:** Lea County, NM

**Date Received in Lab:** Thu Jun-17-10 11:20 am

**Report Date:** 22-JUN-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377666-001	377666-002	377666-003	377666-004		
	<i>Field Id:</i>	TZ Cell 2 G-1	TZ Cell 2 G-2	TZ Cell 2 G-3	TZ Cell 2 G-4		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jun-14-10 09:10	Jun-14-10 09:20	Jun-14-10 09:40	Jun-14-10 09:50		
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 20:38	Jun-18-10 20:38	Jun-18-10 20:38	Jun-18-10 20:38		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		24.0 4.35	126 13.1	135 9.13	152 17.5		
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30		
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL		
Percent Moisture		3.53 1.00	3.47 1.00	8.01 1.00	3.80 1.00		
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 11:05	Jun-18-10 11:05	Jun-18-10 11:05	Jun-18-10 11:05		
	<i>Analyzed:</i>	Jun-19-10 02:57	Jun-19-10 03:24	Jun-19-10 03:51	Jun-19-10 04:18		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 15.5	ND 15.6	ND 16.3	ND 15.6		
C12-C28 Diesel Range Hydrocarbons		1220 15.5	584 15.6	154 16.3	372 15.6		
C28-C35 Oil Range Hydrocarbons		189 15.5	92.8 15.6	24.7 16.3	98.7 15.6		
Total TPH		1409 15.5	677 15.6	179 16.3	471 15.6		

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

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**Brent Barron, II**  
Odessa Laboratory Manager

## Flagging Criteria

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

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 5332 Blackberry Drive, San Antonio TX 78238  
 2505 North Falkenburg Rd, Tampa, FL 33619  
 5757 NW 158th St, Miami Lakes, FL 33014  
 12600 West I-20 East, Odessa, TX 79765  
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(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377666,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377666-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 02:57

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.9	110	70-135	
o-Terphenyl	50.8	50.0	102	70-135	

Lab Batch #: 811327

Sample: 377666-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 03:24

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	100	122	70-135	
o-Terphenyl	55.4	50.2	110	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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





## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377666,

Project ID:

Lab Batch #: 811327

Sample: 377666-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 03:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.5	99.7	96	70-135	
o-Terphenyl	45.8	49.9	92	70-135	

Lab Batch #: 811327

Sample: 377666-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 04:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	97.1	99.8	97	70-135	
o-Terphenyl	45.8	49.9	92	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377666**

**Analyst: LATCOR**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811430**

**Sample: 811430-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	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
<b>Analytes</b>											
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811327**

**Sample: 566133-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377666

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 S

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	55.9	206	270	104	75-125	

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

BRL - Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377666

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: JLG

QC- Sample ID: 377662-005 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

Date Prepared: 06/18/2010

Analyst: BEV

QC- Sample ID: 377669-002 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

### 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: Camille Bryant**

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Consulting, LLC**

Project #:

**Company Address: P.O. Box 381**

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO#:

Telephone No: (575)605-7210

**Fax No: (505) 398-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Emilio Buzant

**e-mail:** [cibryant@basin-consulting.com](mailto:cibryant@basin-consulting.com)

(lab use only)

ORDER #: 377446

ORDER #:		LAB # (lab use only)	
	377666		
FIELD CODE	Beginning Depth	Ending Depth	Date Sampled
Time Sampled	Field Filtered	Total #. of Containers	Preservation & # of Containers
			Matrix
			DW - Drilling Water SL - Sludge GW - Groundwater S - Solids NP - Non-Portable Specify Other
			TPH: 418.1 80159
			TPH: TX 1006 TX 1006
			Cations (Ca, Mg, Na, K)
			Anions (Cl, SO <sub>4</sub> , Alkalinity)
			SAR / ESP / CEC
			Metals: As Ag Ba Cd Cr Pb Hg Se
			Volatiles
			Semivolatiles
			BTEX 8021B/5030 or BTEX 8280
			RCI
			N.O.R.M.
			Chlorides 3300
			RUSH TAT (Pre-Schedule) 24, 48, 72
			Standard TAT 4 DAY
TZ Cell 2 G-1			SOIL X
TZ Cell 2 G-2			SOIL X
TZ Cell 2 G-3			SOIL X
TZ Cell 2 G-4			SOIL X

**Special Instructions:****Laboratory Comments:**

Relinquished by: <i>Camille Beagut</i>	Date <i>6/17</i>	Time <i>7:00</i>	Received by: <i>Sgt. Lowery</i>	Date <i>6/17</i>	Time <i>7:00</i>	Voice Mail Message ( ) Custody seals on container(s) ( ) Sample Hand Delivered by Sampler/Client Rep. ? by Courier? <input checked="" type="checkbox"/> UPS <input type="checkbox"/> DHL <input type="checkbox"/> FedEx <input type="checkbox"/> Lone Star <i>40291955</i> Temperature Upon Receipt: <i>3.6</i> °C
Relinquished by: <i>Sgt. Lowery</i>	Date <i>6/17</i>	Time <i>1120</i>	Received by:	Date	Time	
Relinquished by:	Date	Time	Received by ELOT:	Date	Time	
			<i>Andrew Sam</i>	<i>6-17-10</i>	<i>11:20</i>	



XENCO Laboratories  
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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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377666  
Initials: AL

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

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

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

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

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

# Analytical Report 377660

for

**Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant**

**Sothorn Union Gas Landfarm**

**22-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377660**  
**Sothorn Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377660. 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. 377660 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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## Sample Cross Reference 377660



Basin Environmental Consulting, LLC, Lovington, NM  
Sothorn Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 3 G-1	S	Jun-14-10 10:10		377660-001
TZ Cell 3 G-2	S	Jun-14-10 10:20		377660-002
TZ Cell 3 G-3	S	Jun-14-10 10:30		377660-003
TZ Cell 3 G-4	S	Jun-14-10 10:40		377660-004
TZ Cell 3 G-5	S	Jun-14-10 10:50		377660-005



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Sothern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377660*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811178 Percent Moisture

None

Batch: LBA-811425 Inorganic Anions by EPA 300

None

Batch: LBA-811568 TPH By SW8015 Mod

SW8015MOD\_NM

Batch 811568, C12-C28 Diesel Range Hydrocarbons RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 377660-004, -003, -001, -005, -002.



# Certificate of Analysis Summary 377660

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Sothorn Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377660-001	377660-002	377660-003	377660-004	377660-005	
	<i>Field Id:</i>	TZ Cell 3 G-1	TZ Cell 3 G-2	TZ Cell 3 G-3	TZ Cell 3 G-4	TZ Cell 3 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-14-10 10:10	Jun-14-10 10:20	Jun-14-10 10:30	Jun-14-10 10:40	Jun-14-10 10:50	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		21.5 4.31	22.7 4.31	26.7 8.92	15.6 4.73	15.1 4.31	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		2.62 1.00	2.53 1.00	5.85 1.00	11.2 1.00	2.51 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	
	<i>Analyzed:</i>	Jun-21-10 08:16	Jun-21-10 08:43	Jun-21-10 09:10	Jun-21-10 09:37	Jun-21-10 10:04	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 154	ND 154	ND 159	ND 169	ND 153	
C12-C28 Diesel Range Hydrocarbons		3540 154	3420 154	4830 159	4440 169	4540 153	
C28-C35 Oil Range Hydrocarbons		373 154	364 154	515 159	488 169	506 153	
Total TPH		3913 154	3784 154	5345 159	4928 169	5046 153	

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Sothorn Union Gas Landfarm

Work Orders : 377660,

Project ID:

Lab Batch #: 811568

Sample: 566290-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	45.6	50.0	91	70-135	

Lab Batch #: 811568

Sample: 566290-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:47

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.7	122	70-135	
o-Terphenyl	46.6	49.9	93	70-135	

Lab Batch #: 811568

Sample: 566290-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:14

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	49.6	50.1	99	70-135	

Lab Batch #: 811568

Sample: 377657-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 07:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	221	200	111	70-135	
o-Terphenyl	103	100	103	70-135	

Lab Batch #: 811568

Sample: 377660-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 08:16

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.9	100	83	70-135	
o-Terphenyl	42.1	50.1	84	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] =  $100 * A / B$

† Results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Sothorn Union Gas Landfarm

Work Orders : 377660,

Project ID:

Lab Batch #: 811568

Sample: 377660-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 08:43

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	73.4	99.9	73	70-135	
o-Terphenyl	36.9	50.0	74	70-135	

Lab Batch #: 811568

Sample: 377660-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 09:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	91.1	99.7	91	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 811568

Sample: 377660-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 09:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	83.0	100	83	70-135	
o-Terphenyl	40.7	50.0	81	70-135	

Lab Batch #: 811568

Sample: 377660-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 10:04

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.6	99.5	90	70-135	
o-Terphenyl	44.6	49.8	90	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 / BSL Recoveries



**Project Name:** Sothern Union Gas Landfarm

**Work Order #:** 377660

**Analyst:** LATCOR

**Date Prepared:** 06/18/2010

**Project ID:**

**Date Analyzed:** 06/18/2010

**Lab Batch ID:** 811425

**Sample:** 811425-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.96	100	10	9.96	100	0	75-125	20	

**Analyst:** BEV

**Date Prepared:** 06/18/2010

**Date Analyzed:** 06/19/2010

**Lab Batch ID:** 811568

**Sample:** 566290-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1180	118	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	846	85	997	870	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries

Project Name: Sothern Union Gas Landfarm



Work Order #: 377660

Lab Batch #: 811425

Date Analyzed: 06/18/2010

QC- Sample ID: 377603-001 S

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

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	413	227	648	104	75-125	

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

BRL - Below Reporting Limit





## Sample Duplicate Recovery



Project Name: Sothern Union Gas Landfarm

Work Order #: 377660

Lab Batch #: 811425

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377603-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	413	439	6	20	

Lab Batch #: 811178

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: JLG

QC- Sample ID: 377654-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.51	1.45	4	20	

Lab Batch #: 811568

Date Analyzed: 06/21/2010

Date Prepared: 06/18/2010

Analyst: BEV

QC- Sample ID: 377657-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	16.7	NC	35	
C12-C28 Diesel Range Hydrocarbons	240	503	71	35	F
C28-C35 Oil Range Hydrocarbons	30.5	29.5	3	35	

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

### 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:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Consulting, LLC

Project #:

**Company Address: P.O. Box 381**

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (575)605-7210

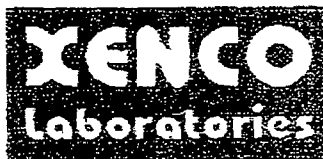
Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377660  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 3.6 °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 377661**  
**for**  
**Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant**  
**Southern Union Gas Landfarm**

**21-FEB-11**



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**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

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

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



21-FEB-11

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377661**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377661. 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. 377661 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377661



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 4 G-1	S	Jun-14-10 11:00		377661-001
TZ Cell 4 G-2	S	Jun-14-10 11:10		377661-002
TZ Cell 4 G-3	S	Jun-14-10 11:20		377661-003
TZ Cell 4 G-4	S	Jun-14-10 11:30		377661-004
TZ Cell 4 G-5	S	Jun-14-10 11:40		377661-005



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377661*

*Report Date: 21-FEB-11*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811568 TPH By SW8015 Mod

SW8015MOD\_NM

Batch 811568, C12-C28 Diesel Range Hydrocarbons RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 377661-001, -003, -005, -004, -002.



# Certificate of Analysis Summary 377661

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 21-FEB-11

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377661-001	377661-002	377661-003	377661-004	377661-005	
	<i>Field Id:</i>	TZ Cell 4 G-1	TZ Cell 4 G-2	TZ Cell 4 G-3	TZ Cell 4 G-4	TZ Cell 4 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-14-10 11:00	Jun-14-10 11:10	Jun-14-10 11:20	Jun-14-10 11:30	Jun-14-10 11:40	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		37.7 4.36	36.1 4.32	41.0 4.49	126 8.67	75.9 8.60	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		3.70 1.00	2.69 1.00	6.38 1.00	3.08 1.00	2.34 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	
	<i>Analyzed:</i>	Jun-21-10 10:59	Jun-21-10 11:26	Jun-21-10 11:53	Jun-21-10 12:21	Jun-21-10 12:48	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 155	ND 154	ND 160	ND 154	ND 153	
C12-C28 Diesel Range Hydrocarbons		3830 155	1910 154	3460 160	2170 154	3170 153	
C28-C35 Oil Range Hydrocarbons		304 155	ND 154	276 160	167 154	276 153	
Total TPH		4134 155	1910 154	3736 160	2337 154	3446 153	

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

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Brent Barron, II  
Odessa Laboratory Manager



## Flagging Criteria

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

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## BS / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377661**

**Analyst: LATCOR**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811425**

**Sample: 811425-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.96	100	10.0	9.96	100	0	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811568**

**Sample: 566290-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1180	118	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	846	85	997	870	87	2	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: Southern Union Gas Landfarm

Work Order #: 377661

Lab Batch #: 811425

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377603-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300		MATRIX / MATRIX SPIKE RECOVERY STUDY				
Analytes		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R
Chloride		413	227	648	104	75-125

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

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377661**

**Lab Batch #: 811425**

**Date Analyzed: 06/18/2010 10:48**

**Date Prepared: 06/18/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 377603-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	413	439	6	20	

**Lab Batch #: 811178**

**Date Analyzed: 06/18/2010 08:30**

**Date Prepared: 06/18/2010**

**Analyst: JLG**

**QC- Sample ID: 377654-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.51	1.45	4	20	

**Lab Batch #: 811568**

**Date Analyzed: 06/21/2010 07:50**

**Date Prepared: 06/18/2010**

**Analyst: BEV**

**QC- Sample ID: 377657-005 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	16.7	NC	35	
C12-C28 Diesel Range Hydrocarbons	240	503	71	35	F
C28-C35 Oil Range Hydrocarbons	30.5	29.5	3	35	

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

## 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: Camille Bryant

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Consulting, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: \_\_\_\_\_

Telephone No: (575) 605-7210

Fax No: (505) 396-1428

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cibryant@basin-consulting.com

(lab use only)

ORDER #: 377661

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>	None	Other (Specify)	DW - Drinking Water SL - Sludge GW - Groundwater S - Soil/Sed NP - Non-Potable Specify Other	TPH: 418.1 8015B 8015C	TPH: TX 1005 TX 1008	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Si Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	NORM	Chlorides 2300	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY	
	TZ Cell 4 G-1			6/14/10	1100		1	X								SOIL	X											X		X
	TZ Cell 4 G-2			6/14/10	1110		1	X								SOIL	X											X		X
	TZ Cell 4 G-3			6/14/10	1120		1	X								SOIL	X											X		X
	TZ Cell 4 G-4			6/14/10	1130		1	X								SOIL	X											X		X
	TZ Cell 4 G-5			6/14/10	1140		1	X								SOIL	X											X		X
													</																	

Special Instructions:

Relinquished by: <u>Camille Bryant</u>	Date: <u>6/17</u>	Time: <u>7:00</u>	Received by: <u>SOPR Lowery</u>	Date: <u>6/17</u>	Time: <u>7:00</u>
Relinquished by: <u>SOPR Lowery</u>	Date: <u>6/17</u>	Time: <u>11:20</u>	Received by: _____	Date: _____	Time: _____
Relinquished by: _____	Date: _____	Time: _____	Received by: <u>Andrea Lam</u>	Date: <u>6.17.10</u>	Time: <u>11:20</u>

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? ☒ N  
by UPS ☒ N  
by DHL ☒ N  
by FedEx ☒ N  
by Lone Star ☒ N  
Temperature Upon Receipt: 40.7 g/1955 3.6 °C

**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: 8/1/2010 Page 1 of 1

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

Client: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377661  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 3.6 °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 377674

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

22-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377674**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377674. 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. 377674 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377674



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
TZ Cell 5 G-1	S	Jun-14-10 11:50		377674-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377674*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



# Certificate of Analysis Summary 377674

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 377674-001					
	<b>Field Id:</b> TZ Cell 5 G-1					
	<b>Depth:</b>					
	<b>Matrix:</b> SOIL					
	<b>Sampled:</b> Jun-14-10 11:50					
<b>Anions by E300</b>	<b>Extracted:</b>					
	<b>Analyzed:</b> Jun-18-10 20:38					
	<b>Units/RL:</b> mg/kg RL					
Chloride	12.5 4.28					
<b>Percent Moisture</b>	<b>Extracted:</b>					
	<b>Analyzed:</b> Jun-18-10 08:30					
	<b>Units/RL:</b> % RL					
Percent Moisture	1.98 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Jun-18-10 11:05					
	<b>Analyzed:</b> Jun-19-10 08:46					
	<b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.4					
C12-C28 Diesel Range Hydrocarbons	73.1 15.4					
C28-C35 Oil Range Hydrocarbons	29.4 15.4					
Total TPH	102.5 15.4					

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Brent Barron, II  
Odessa Laboratory Manager

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- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
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- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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 5332 Blackberry Drive, San Antonio TX 78238  
 2505 North Falkenburg Rd, Tampa, FL 33619  
 5757 NW 158th St, Miami Lakes, FL 33014  
 12600 West I-20 East, Odessa, TX 79765  
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377674,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 811327

Sample: 377674-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 08:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	101	106	70-135	
o-Terphenyl	49.4	50.3	98	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] =  $100 \times A / B$

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



## BS / BSD Recoveries



**Project Name:** Southern Union Gas Landfarm

**Work Order #:** 377674

**Analyst:** LATCOR

**Date Prepared:** 06/18/2010

**Project ID:**

**Date Analyzed:** 06/18/2010

**Lab Batch ID:** 811430

**Sample:** 811430-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

**Analyst:** BEV

**Date Prepared:** 06/18/2010

**Date Analyzed:** 06/18/2010

**Lab Batch ID:** 811327

**Sample:** 566133-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377674

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377662-005 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	55.9	206	270	104	75-125	

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

Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377674

Lab Batch #: 811430

Project ID:

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 81180

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: JLG

QC- Sample ID: 377662-005 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

Date Prepared: 06/18/2010

Analyst: BEV

QC- Sample ID: 377669-002 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

### 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:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Consulting, LLC

Project #:

**Company Address: P.O. Box 381**

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO#:** \_\_\_\_\_

Telephone No: (575) 605-7210

**Fax No: (505) 398-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Emilio Gonzalez

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 371674  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377668

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

22-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377668**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377668. 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. 377668 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 377668



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 6 G-1	S	Jun-14-10 12:00		377668-001
TZ Cell 6 G-2	S	Jun-14-10 12:10		377668-002



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377668*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



# Certificate of Analysis Summary 377668

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377668-001	377668-002				
	<b>Field Id:</b>	TZ Cell 6 G-1	TZ Cell 6 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Jun-14-10 12:00	Jun-14-10 12:10				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 20:38	Jun-18-10 20:38				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		48.9 17.3	98.0 8.69				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 08:30	Jun-18-10 08:30				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		2.72 1.00	3.38 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 11:05	Jun-18-10 11:05				
	<b>Analyzed:</b>	Jun-19-10 04:45	Jun-19-10 05:12				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.4	ND 15.5				
C12-C28 Diesel Range Hydrocarbons		286 15.4	347 15.5				
C28-C35 Oil Range Hydrocarbons		77.2 15.4	68.0 15.5				
Total TPH		363 15.4	415 15.5				

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

  
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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116





## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377668,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377668-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 04:45

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	99.7	108	70-135	
o-Terphenyl	49.1	49.9	98	70-135	

Lab Batch #: 811327

Sample: 377668-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 05:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	99.7	104	70-135	
o-Terphenyl	49.0	49.9	98	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: Southern Union Gas Landfarm

Work Orders : 377668,

Lab Batch #: 811327

Sample: 377669-002 D / MD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	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 / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377668

Analyst: LATCOR

Date Prepared: 06/18/2010

Project ID:

Date Analyzed: 06/18/2010

Lab Batch ID: 811430

Sample: 811430-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

Analyst: BEV

Date Prepared: 06/18/2010

Date Analyzed: 06/18/2010

Lab Batch ID: 811327

Sample: 566133-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377668

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 S

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

Inorganic Anions by EPA 300		MATRIX / MATRIX SPIKE RECOVERY STUDY				
Analytes		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R
Chloride		55.9	206	270	104	75-125

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

BRL - Below Reporting Limit

**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377668**

**Lab Batch #: 811430**

**Date Analyzed: 06/18/2010**

**QC- Sample ID: 377662-005 D**

**Reporting Units: mg/kg**

**Project ID:**

**Analyst: LATCOR**

**Matrix: Soil**

**Date Prepared: 06/18/2010**

**Batch #: 1**

## SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

**Lab Batch #: 811180**

**Date Analyzed: 06/18/2010**

**QC- Sample ID: 377662-005 D**

**Reporting Units: %**

**Date Prepared: 06/18/2010**

**Batch #: 1**

**Analyst: JLG**

**Matrix: Soil**

## SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

**Lab Batch #: 811327**

**Date Analyzed: 06/19/2010**

**QC- Sample ID: 377669-002 D**

**Reporting Units: mg/kg**

**Date Prepared: 06/18/2010**

**Batch #: 1**

**Analyst: BEV**

**Matrix: Soil**

## SAMPLE / SAMPLE DUPLICATE RECOVERY

TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

Spike Relative Difference  $RPD = 200 * |(B-A)/(B+A)|$

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

BRL - Below Reporting Limit

Final Ver. 1.000

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

**Project Manager:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Consulting, LLC

Project #: \_\_\_\_\_

**Company Address: P.O. Box 381**

Project Loc: Lea County, NM

City/State/Zip: Lowington, NM 88260

PO #: \_\_\_\_\_

Telephone No: (575) 805-7210

**Fax No:** (505) 398-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: G. M. O. Bennett

**e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)**

[illegible]



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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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377608  
Initials: AL

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

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

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

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

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

# Analytical Report 377670

for

**Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**22-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)





22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377670**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377670. 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. 377670 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 377670



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 7 G-1	S	Jun-14-10 12:20		377670-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377670*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



**Certificate of Analysis Summary 377670**  
**Basin Environmental Consulting, LLC, Lovington, NM**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Camille Bryant

**Project Location:** Lea County, NM

**Date Received in Lab:** Thu Jun-17-10 11:20 am


**Report Date:** 22-JUN-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 377670-001 <b>Field Id:</b> TZ Cell 7 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Jun-14-10 12:20					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-18-10 20:38 <b>Units/RL:</b> mg/kg RL					
Chloride	15.5 4.41					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-18-10 08:30 <b>Units/RL:</b> % RL					
Percent Moisture	4.81 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Jun-18-10 11:05 <b>Analyzed:</b> Jun-19-10 07:26 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.8					
C12-C28 Diesel Range Hydrocarbons	525 15.8					
C28-C35 Oil Range Hydrocarbons	77.9 15.8					
Total TPH	603 15.8					

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

  
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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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9701 Harry Hines Blvd, Dallas, TX 75220  
5332 Blackberry Drive, San Antonio TX 78238  
2505 North Falkenburg Rd, Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
12600 West I-20 East, Odessa, TX 79765  
842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377670,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 811327

Sample: 377670-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 07:26

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.2	100	98	70-135	
o-Terphenyl	47.1	50.0	94	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: Southern Union Gas Landfarm

Work Order #: 377670

Analyst: LATCOR

Date Prepared: 06/18/2010

Project ID:

Date Analyzed: 06/18/2010

Lab Batch ID: 811430

Sample: 811430-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

Analyst: BEV

Date Prepared: 06/18/2010

Date Analyzed: 06/18/2010

Lab Batch ID: 811327

Sample: 566133-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377670

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377662-005 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	55.9	206	270	104	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit





## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377670

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: mg/kg

Project ID:

Analyst: LATCOR

Date Prepared: 06/18/2010

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: %

Date Prepared: 06/18/2010

Analyst: JLG

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

QC- Sample ID: 377669-002 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Analyst: BEV

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

### 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:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO#:**

**Telephone No: (575) 805-7210**

**Fax No: (505) 398-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377670  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377672

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

22-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377672**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377672. 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. 377672 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377672



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 8 G-1	S	Jun-14-10 12:30		377672-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377672*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



**Certificate of Analysis Summary 377672**  
**Basin Environmental Consulting, LLC, Lovington, NM**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Camille Bryant

**Project Location:** Lea County, NM

**Date Received in Lab:** Thu Jun-17-10 11:20 am

**Report Date:** 22-JUN-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377672-001					
	<b>Field Id:</b>	TZ Cell 8 G-1					
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Jun-14-10 12:30					
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 20:38					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		81.2 8.84					
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 08:30					
	<b>Units/RL:</b>	% RL					
Percent Moisture		4.99 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 11:05					
	<b>Analyzed:</b>	Jun-19-10 07:52					
	<b>Units/RL:</b>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 15.7					
C12-C28 Diesel Range Hydrocarbons		650 15.7					
C28-C35 Oil Range Hydrocarbons		88.9 15.7					
Total TPH		739 15.7					

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

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Brent Barron, II  
Odessa Laboratory Manager



## Flagging Criteria

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

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2505 North Falkenburg Rd, Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
12600 West I-20 East, Odessa, TX 79765  
842 Cantwell Lane, Corpus Christi, TX 78408

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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377672,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 811327

Sample: 377672-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 07:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.7	103	70-135	
o-Terphenyl	49.0	49.9	98	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] =  $100 * A / B$

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



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377672**

**Analyst: LATCOR**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811430**

**Sample: 811430-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	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
<b>Analytes</b>											
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811327**

**Sample: 566133-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377672

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377662-005 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	55.9	206	270	104	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377672

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: %

Date Prepared: 06/18/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

QC- Sample ID: 377669-002 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Analyst: BEV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12800 West I-20 East  
Odessa, Texas 79765

Phone: 432-583-1800  
Fax: 432-583-1713

Project Manager: Camille Bryant

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Consulting, LLC

Project #:

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (575)605-7210

Fax No: (505) 398-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cjbryant@basin-consulting.com

(lab use only)		Analyze For:	
ORDER #:	377672	TCLP:	TOTAL:
LAB # (lab use only)		TX 1005	TX 1006
FIELD CODE	TZ Cell 8 G-1	Ca (Ca, Mg, Na, K)	As (As, Cd, Cr, Pb, Hg, Se)
Beginning Depth		Ar (Ar, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC
Ending Depth		Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles
Date Sampled	6/14/10	Semivolatiles	BTEX 80218/9030 or BTEX 8280
Time Sampled	1230	RCI	NORM
Field Filled			
Total # of Containers	1		
Is	X		
HNO <sub>3</sub>			
HCl			
H <sub>2</sub> SO <sub>4</sub>			
NaOH			
Na <sub>2</sub> S <sub>2</sub> O <sub>8</sub>			
None			
Other (Specify)			
DW - Drinking Water St - Surface			
GW - Groundwater S - Soil/Sol			
NP - Non-Potable Specify ODT			
TPH: 418.1 (8015M) 8015B			
TPH: TX 1005			
Ca (Ca, Mg, Na, K)			
As (As, Cd, Cr, Pb, Hg, Se)			
SAR / ESP / CEC			
Metals: As Ag Ba Cd Cr Pb Hg Se			
Volatiles			
Semivolatiles			
BTEX 80218/9030 or BTEX 8280			
RCI			
NORM			
Chlorides E300			
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs			
Standard TAT 4 DAY			

Special Instructions:				Laboratory Comments:			
Relinquished by:	Date	Time	Received by:	Date	Time	VOCs Free of Headspace?	
Camille Bryant	6/17	7:00	SOER Lowrey	6/17	7:00	Y N	
Relinquished by:	Date	Time	Received by:	Date	Time	Custody seals on container(s)	
SOER Lowrey	6/17	1120				Y N	
Relinquished by:	Date	Time	Received by ELOT:	Date	Time	Sample Hand Delivered	
			Andrew Lamm	6-17-10	11:20	Y N	
				by Sampler/Client Rep. ?			
				by Courier? UPS DHL FedEx Lone Star			
				4 oz glass			
				Temperature Upon Receipt: 3.6 °C			

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377672  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377673

for

**Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**22-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)





22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377673**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377673. 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. 377673 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377673



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 8 G-2	S	Jun-14-10 12:40		377673-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377673*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



# Certificate of Analysis Summary 377673

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 377673-001 <b>Field Id:</b> TZ Cell 8 G-2 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Jun-14-10 12:40					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-18-10 20:38 <b>Units/RL:</b> mg/kg RL					
Chloride	146 9.13					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-18-10 08:30 <b>Units/RL:</b> % RL					
Percent Moisture	7.96 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Jun-18-10 11:05 <b>Analyzed:</b> Jun-19-10 08:19 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 16.3					
C12-C28 Diesel Range Hydrocarbons	537 16.3					
C28-C35 Oil Range Hydrocarbons	87.0 16.3					
Total TPH	624 16.3					

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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12600 West I-20 East, Odessa, TX 79765  
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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377673,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 811327

Sample: 377673-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 08:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.8	106	70-135	
o-Terphenyl	49.3	49.9	99	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: Southern Union Gas Landfarm**

**Work Order #: 377673**

**Analyst: LATCOR**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811430**

**Sample: 811430-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811327**

**Sample: 566133-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377673

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 S

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### 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	55.9	206	270	104	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit





## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377673

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: mg/kg

Project ID:

Date Prepared: 06/18/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: %

Date Prepared: 06/18/2010

Analyst: JLG

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

QC- Sample ID: 377669-002 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Analyst: BEV

Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

**Phone: 432-583-1800**  
**Fax: 432-583-1713**

**Project Manager: Camille Bryant**

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO#:**

**Telephone No:** (575) 805-7210

**Fax No: (505) 398-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377673  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377662

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Sothorn Union Gas Landfarm

22-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377662**  
**Sothorn Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377662. 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. 377662 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377662



Basin Environmental Consulting, LLC, Lovington, NM  
Sothorn Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 9 G-1	S	Jun-14-10 12:50		377662-001
TZ Cell 9 G-2	S	Jun-14-10 13:00		377662-002
TZ Cell 9 G-3	S	Jun-14-10 13:10		377662-003
TZ Cell 9 G-4	S	Jun-14-10 13:20		377662-004
TZ Cell 9 G-5	S	Jun-14-10 13:30		377662-005



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Sothorn Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377662*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811178 Percent Moisture

None

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811425 Inorganic Anions by EPA 300

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None

Batch: LBA-811568 TPH By SW8015 Mod

SW8015MOD\_NM

Batch 811568, C12-C28 Diesel Range Hydrocarbons RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 377662-003, -004, -002, -001, -005.



# Certificate of Analysis Summary 377662

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Sothorn Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377662-001	377662-002	377662-003	377662-004	377662-005	
	<i>Field Id:</i>	TZ Cell 9 G-1	TZ Cell 9 G-2	TZ Cell 9 G-3	TZ Cell 9 G-4	TZ Cell 9 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-14-10 12:50	Jun-14-10 13:00	Jun-14-10 13:10	Jun-14-10 13:20	Jun-14-10 13:30	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 10:48	Jun-18-10 20:38	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		110 8.70	407 17.2	229 17.3	206 21.7	55.9 8.64	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		3.42 1.00	2.48 1.00	2.68 1.00	3.24 1.00	2.78 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	Jun-18-10 10:55	
	<i>Analyzed:</i>	Jun-21-10 13:16	Jun-21-10 13:44	Jun-21-10 14:12	Jun-21-10 14:39	Jun-21-10 15:07	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 15.5	ND 15.4	ND 15.5	ND 15.4	ND 15.4	
C12-C28 Diesel Range Hydrocarbons		238 15.5	1250 15.4	286 15.5	277 15.4	164 15.4	
C28-C35 Oil Range Hydrocarbons		62.3 15.5	135 15.4	60.7 15.5	78.6 15.4	42.0 15.4	
Total TPH		300 15.5	1385 15.4	347 15.5	356 15.4	206 15.4	

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

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Brent Barron, II  
Odessa Laboratory Manager



## Flagging Criteria

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

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4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Sothorn Union Gas Landfarm

Work Orders : 377662,

Lab Batch #: 811568

Sample: 566290-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	119	100	119	70-135	
o-Terphenyl	45.6	50.0	91	70-135	

Lab Batch #: 811568

Sample: 566290-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:47

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.7	122	70-135	
o-Terphenyl	46.6	49.9	93	70-135	

Lab Batch #: 811568

Sample: 566290-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:14

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	104	100	104	70-135	
o-Terphenyl	49.6	50.1	99	70-135	

Lab Batch #: 811568

Sample: 377657-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 07:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	221	200	111	70-135	
o-Terphenyl	103	100	103	70-135	

Lab Batch #: 811568

Sample: 377662-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 13:16

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.0	99.9	99	70-135	
o-Terphenyl	46.8	50.0	94	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] =  $100 \times A / B$

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

## Form 2 - Surrogate Recoveries

**Project Name: Sothorn Union Gas Landfarm**

**Work Orders :** 377662,

**Project ID:**

**Lab Batch #:** 811568

**Sample:** 377662-002 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 06/21/10 13:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	98.0	99.8	98	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

**Lab Batch #:** 811568

**Sample:** 377662-003 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 06/21/10 14:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.7	101	75	70-135	
o-Terphenyl	36.7	50.3	73	70-135	

**Lab Batch #:** 811568

**Sample:** 377662-004 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 06/21/10 14:39

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	76.4	99.5	77	70-135	
o-Terphenyl	37.6	49.8	76	70-135	

**Lab Batch #:** 811568

**Sample:** 377662-005 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 06/21/10 15:07

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	77.0	99.5	77	70-135	
o-Terphenyl	38.1	49.8	77	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 / BSL Recoveries



Project Name: Sothern Union Gas Landfarm

Work Order #: 377662

Analyst: LATCOR

Date Prepared: 06/18/2010

Project ID:

Date Analyzed: 06/18/2010

Lab Batch ID: 811425

Sample: 811425-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	9.96	100	10	9.96	100	0	75-125	20	

Analyst: LATCOR

Date Prepared: 06/18/2010

Date Analyzed: 06/18/2010

Lab Batch ID: 811430

Sample: 811430-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

Analyst: BEV

Date Prepared: 06/18/2010

Date Analyzed: 06/19/2010

Lab Batch ID: 811568

Sample: 566290-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1180	118	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	846	85	997	870	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries

Project Name: Sothorn Union Gas Landfarm



Work Order #: 377662

Lab Batch #: 811425

Date Analyzed: 06/18/2010

QC- Sample ID: 377603-001 S

Reporting Units: mg/kg

Project ID:

Analyst: LATCOR

Date Prepared: 06/18/2010

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	413	227	648	104	75-125	

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 S

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	55.9	206	270	104	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit

**Project Name: Sothern Union Gas Landfarm**

**Work Order #: 377662**

**Lab Batch #: 811425**

**Date Analyzed: 06/18/2010**

**QC- Sample ID: 377603-001 D**

**Reporting Units: mg/kg**

**Project ID:**

**Date Prepared: 06/18/2010**

**Analyst: LATCOR**

**Batch #: 1**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	413	439	6	20	

**Lab Batch #: 811430**

**Date Analyzed: 06/18/2010**

**QC- Sample ID: 377662-005 D**

**Reporting Units: mg/kg**

**Date Prepared: 06/18/2010**

**Analyst: LATCOR**

**Batch #: 1**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

**Lab Batch #: 811178**

**Date Analyzed: 06/18/2010**

**QC- Sample ID: 377654-001 D**

**Reporting Units: %**

**Date Prepared: 06/18/2010**

**Analyst: JLG**

**Batch #: 1**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.51	1.45	4	20	

**Lab Batch #: 811180**

**Date Analyzed: 06/18/2010**

**QC- Sample ID: 377662-005 D**

**Reporting Units: %**

**Date Prepared: 06/18/2010**

**Analyst: JLG**

**Batch #: 1**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	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



## Sample Duplicate Recovery



**Project Name: Sothern Union Gas Landfarm**

**Work Order #: 377662**

**Lab Batch #: 811568**

**Date Analyzed: 06/21/2010**

**QC- Sample ID: 377657-005 D**

**Reporting Units: mg/kg**

**Date Prepared: 06/18/2010**

**Batch #: 1**

**Project ID:**

**Analyst: BEV**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	16.7	NC	35	
C12-C28 Diesel Range Hydrocarbons	240	503	71	35	F
C28-C35 Oil Range Hydrocarbons	30.5	29.5	3	35	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

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

BRL - Below Reporting Limit





**XENCO Laboratories**

Atlanta, Boca Raton, Corpus Christi, Dallas

Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

Revision/Date: No. 01, 5/27/2010

Effective Date: 6/1/2010 Page 1 of 1

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

Client:

Basin Env.

Date/Time:

6-17-10 11:20

Lab ID #:

377662

Initials:

AL

**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 3.6 °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 377663**

**for**

**Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant**

**Sothorn Union Gas Landfarm**

**22-JUN-10**



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

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

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

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL00449):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377663**  
**Sothorn Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377663. 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. 377663 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377663



Basin Environmental Consulting, LLC, Lovington, NM  
Sothorn Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 10 G-1	S	Jun-14-10 13:40		377663-001
TZ Cell 10 G-2	S	Jun-14-10 13:50		377663-002
TZ Cell 10 G-3	S	Jun-14-10 14:00		377663-003
TZ Cell 10 G-4	S	Jun-14-10 14:10		377663-004



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Sothern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377663*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



# Certificate of Analysis Summary 377663

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Sothorn Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377663-001	377663-002	377663-003	377663-004		
	<i>Field Id:</i>	TZ Cell 10 G-1	TZ Cell 10 G-2	TZ Cell 10 G-3	TZ Cell 10 G-4		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jun-14-10 13:40	Jun-14-10 13:50	Jun-14-10 14:00	Jun-14-10 14:10		
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-18-10 20:38	Jun-18-10 20:38	Jun-18-10 20:38	Jun-18-10 20:38		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		16.7 4.32	11.3 4.35	25.7 8.58	44.8 8.61		
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 11:05	Jun-18-10 11:05	Jun-18-10 11:05	Jun-18-10 11:05		
	<i>Analyzed:</i>	Jun-19-10 01:11	Jun-19-10 01:38	Jun-19-10 02:04	Jun-19-10 02:31		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 15.5	ND 15.5	ND 15.2	ND 15.3		
C12-C28 Diesel Range Hydrocarbons		600 15.5	329 15.5	200 15.2	576 15.3		
C28-C35 Oil Range Hydrocarbons		135 15.5	80.5 15.5	58.2 15.2	137 15.3		
Total TPH		735 15.5	410 15.5	258 15.2	713 15.3		

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

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Brent Barron, II  
Odessa Laboratory Manager



**Certificate of Analysis Summary 377663**  
**Basin Environmental Consulting, LLC, Lovington, NM**  
**Project Name: Sothern Union Gas Landfarm**



**Project Id:**

**Contact:** Camille Bryant

**Project Location:** Lea County, NM

**Date Received in Lab:** Thu Jun-17-10 11:20 am


**Report Date:** 22-JUN-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377663-001	377663-002	377663-003	377663-004		
	<b>Field Id:</b>	TZ Cell 10 G-1	TZ Cell 10 G-2	TZ Cell 10 G-3	TZ Cell 10 G-4		
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL	SOIL	SOIL		
<b>Percent Moisture</b>	<b>Sampled:</b>	Jun-14-10 13:40	Jun-14-10 13:50	Jun-14-10 14:00	Jun-14-10 14:10		
	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30	Jun-18-10 08:30		
	<b>Units/RL:</b>	% RL	% RL	% RL	% RL		
Percent Moisture		2.78 1.00	3.53 1.00	2.11 1.00	2.42 1.00		

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

\* Outside XENCO's scope of NELAC Accreditation.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116





## Form 2 - Surrogate Recoveries

Project Name: Sothorn Union Gas Landfarm

Work Orders : 377663,

Project ID:

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377663-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 01:11

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	109	101	108	70-135	
o-Terphenyl	49.6	50.3	99	70-135	

Lab Batch #: 811327

Sample: 377663-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 01:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	213	200	107	70-135	
o-Terphenyl	99.0	100	99	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: Sothern Union Gas Landfarm

Work Orders : 377663,

Lab Batch #: 811327

Sample: 377663-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 02:04

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.9	99.5	100	70-135	
o-Terphenyl	45.8	49.8	92	70-135	

Lab Batch #: 811327

Sample: 377663-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 02:31

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	99.5	106	70-135	
o-Terphenyl	47.9	49.8	96	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	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: Sothern Union Gas Landfarm

Work Order #: 377663

Analyst: LATCOR

Date Prepared: 06/18/2010

Project ID:

Date Analyzed: 06/18/2010

Lab Batch ID: 811430

Sample: 811430-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

Analyst: BEV

Date Prepared: 06/18/2010

Date Analyzed: 06/18/2010

Lab Batch ID: 811327

Sample: 566133-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Sothern Union Gas Landfarm

Work Order #: 377663

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377662-005 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent	Spike	Spiked Sample	%R	Control	Flag
	Sample	Added	Result	[D]	Limits	
Analytes	Result	[B]	[C]		%R	
	[A]					
Chloride	55.9	206	270	104	75-125	

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

Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Sothorn Union Gas Landfarm

Work Order #: 377663

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: mg/kg

Project ID:

Date Prepared: 06/18/2010

Batch #: 1

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: %

Date Prepared: 06/18/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

QC- Sample ID: 377669-002 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Analyst: BEV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

### 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:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Consulting, LLC

**Project #:**

**Company Address:** P.O. Box 381

**Project Loc:** Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #:**

**Telephone No:** (575)605-7210

Fax No: (505) 398-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

**e-mail: cjbryant@basin-consulting.com**

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377663  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377669

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

22-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)





22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377669**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377669. 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. 377669 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377669



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 11 G-1	S	Jun-14-10 14:20		377669-001
TZ Cell 11 G-2	S	Jun-14-10 14:30		377669-002



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377669*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



# Certificate of Analysis Summary 377669

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377669-001	377669-002				
	<b>Field Id:</b>	TZ Cell 11 G-1	TZ Cell 11 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Jun-14-10 14:20	Jun-14-10 14:30				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 20:38	Jun-18-10 20:38				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		469 43.4	169 21.6				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 08:30	Jun-18-10 08:30				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		3.28 1.00	2.79 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 11:05	Jun-18-10 11:05				
	<b>Analyzed:</b>	Jun-19-10 06:06	Jun-19-10 06:32				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		85.9 15.4	ND 15.4				
C12-C28 Diesel Range Hydrocarbons		1510 15.4	202 15.4				
C28-C35 Oil Range Hydrocarbons		123 15.4	19.9 15.4				
Total TPH		1719 15.4	222 15.4				

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

  
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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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2505 North Falkenburg Rd, Tampa, FL 33619  
5757 NW 158th St, Miami Lakes, FL 33014  
12600 West I-20 East, Odessa, TX 79765  
842 Cantwell Lane, Corpus Christi, TX 78408

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377669,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.6	109	70-135	
o-Terphenyl	54.6	49.8	110	70-135	

Lab Batch #: 811327

Sample: 377669-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:32

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.6	107	70-135	
o-Terphenyl	49.3	49.8	99	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] =  $100 * A / B$

^If results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377669,

Lab Batch #: 811327

Sample: 377669-002 D / MD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377669**

**Analyst: LATCOR**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811430**

**Sample: 811430-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	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
<b>Analytes</b>											
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811327**

**Sample: 566133-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377669

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 S

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Inorganic Anions by EPA 300		MATRIX / MATRIX SPIKE RECOVERY STUDY				
Analytes		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R
Chloride		55.9	206	270	104	75-125

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

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377669

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: JLG

QC- Sample ID: 377662-005 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

Date Prepared: 06/18/2010

Analyst: BEV

QC- Sample ID: 377669-002 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

## Page 12 of 13

Final Ver. 1.000

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

**Project Name: Southern Union Gas Landfarm**

**Project #:**

Project Loc: Lea County, NM

**PO #:**

**Fax No: (505) 398-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377669  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377676

for

**Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**22-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377676**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377676. 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. 377676 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377676



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 12 G-1	S	Jun-14-10 14:40		377676-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377676*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None





# Certificate of Analy. Summary 377676

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377676-001					
	<b>Field Id:</b>	TZ Cell 12 G-1					
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Jun-14-10 14:40					
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 20:38					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		47.3 21.8					
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 08:30					
	<b>Units/RL:</b>	% RL					
Percent Moisture		3.79 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 11:05					
	<b>Analyzed:</b>	Jun-19-10 09:40					
	<b>Units/RL:</b>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 15.6					
C12-C28 Diesel Range Hydrocarbons		449 15.6					
C28-C35 Oil Range Hydrocarbons		78.1 15.6					
Total TPH		527 15.6					

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377676,

Project ID:

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 811327

Sample: 377676-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 09:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	117	99.8	117	70-135	
o-Terphenyl	53.5	49.9	107	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: Southern Union Gas Landfarm**

**Work Order #: 377676**

**Analyst: LATCOR**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811430**

**Sample: 811430-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811327**

**Sample: 566133-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377676

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 S

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	55.9	206	270	104	75-125	

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

Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377676

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: %

Date Prepared: 06/18/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

QC- Sample ID: 377669-002 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Analyst: BEV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

### 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:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO #:**

**Telephone No:** (575) 605-7210

**Fax No: (505) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377674  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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



# Analytical Report 377677

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**22-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377677**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377677. 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.

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377677



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id.	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 13 G-1	S	Jun-14-10 14:50		377677-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377677*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None



# Certificate of Analysis Summary 377677

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 377677-001 <b>Field Id:</b> TZ Cell 13 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Jun-14-10 14:50					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-18-10 20:38 <b>Units/RL:</b> mg/kg RL					
Chloride	347 22.0					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-18-10 08:30 <b>Units/RL:</b> % RL					
Percent Moisture	4.66 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Jun-18-10 11:05 <b>Analyzed:</b> Jun-19-10 10:07 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.7					
C12-C28 Diesel Range Hydrocarbons	288 15.7					
C28-C35 Oil Range Hydrocarbons	71.6 15.7					
Total TPH	360 15.7					

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377677,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 811327

Sample: 377677-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 10:07

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.5	103	70-135	
o-Terphenyl	48.4	49.8	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] =  $100 * A / B$

\* If results are based on MDL and validated for QC purposes.



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377677**

**Analyst: LATCOR**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811430**

**Sample: 811430-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811327**

**Sample: 566133-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377677

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377662-005 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	55.9	206	270	104	75-125	

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

Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377677

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: %

Date Prepared: 06/18/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

QC- Sample ID: 377669-002 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Analyst: BEV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

**12800 West I-20 East  
Odessa, Texas 79785**

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

**Project Manager: Camille Bryant**

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc:** Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #:**

Telephone No: (575) 805-7210

**Fax No: (505) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377677  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377675

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**22-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377675**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377675. 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. 377675 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377675



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 14 G-1	S	Jun-14-10 08:00		377675-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377675*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811180 Percent Moisture

None

Batch: LBA-811327 TPH By SW8015 Mod

None

Batch: LBA-811430 Inorganic Anions by EPA 300

None





# Certificate of Analysis Summary 377675

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377675-001					
	<b>Field Id:</b>	TZ Cell 14 G-1					
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Jun-14-10 08:00					
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 20:38					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		5.37 4.75					
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 08:30					
	<b>Units/RL:</b>	% RL					
Percent Moisture		11.5 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 11:05					
	<b>Analyzed:</b>	Jun-19-10 09:13					
	<b>Units/RL:</b>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 16.9					
C12-C28 Diesel Range Hydrocarbons		48.4 16.9					
C28-C35 Oil Range Hydrocarbons		ND 16.9					
Total TPH		48.4 16.9					

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377675,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 811327

Sample: 377675-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 09:13

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	110	99.8	110	70-135	
o-Terphenyl	52.5	49.9	105	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] =  $100 * A / B$

\*\* If results are based on MDL and validated for QC purposes.



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377675**

**Analyst: LATCOR**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811430**

**Sample: 811430-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/18/2010**

**Lab Batch ID: 811327**

**Sample: 566133-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377675

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377662-005 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	55.9	206	270	104	75-125	

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

Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377675

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	55.9	48.5	14	20	

Lab Batch #: 811180

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 D

Reporting Units: %

Date Prepared: 06/18/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	2.78	2.51	10	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

QC- Sample ID: 377669-002 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Analyst: BEV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

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

BRL - Below Reporting Limit

## Page 11 of 12

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

**Project Name: Southern Union Gas Landfarm**

**Project #:**

**Project Loc:** Lea County, NM

**PO #:**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

Final Ver. 1.000

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377675  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs 3.6 °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 377678

for

**Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**22-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



22-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377678**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377678. 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. 377678 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377678



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 15 G-1	S	Jun-14-10 15:10		377678-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377678*

*Report Date: 22-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

*None*

---

**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-811182 Percent Moisture*

*None*

*Batch: LBA-811327 TPH By SW8015 Mod*

*None*

*Batch: LBA-811435 Inorganic Anions by EPA 300*

*E300MI*

*Batch 811435, Chloride RPD is outside the QC limit. This is most likely due to sample non-homogeneity.*

*Samples affected are: 377678-001.*



# Certificate of Analysis Summary 377678

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 22-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377678-001					
	<b>Field Id:</b>	TZ Cell 15 G-1					
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Jun-14-10 15:10					
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-19-10 06:27					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		79.7 45.3					
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-18-10 08:30					
	<b>Units/RL:</b>	% RL					
Percent Moisture		7.28 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 11:05					
	<b>Analyzed:</b>	Jun-19-10 10:34					
	<b>Units/RL:</b>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 16.2					
C12-C28 Diesel Range Hydrocarbons		209 16.2					
C28-C35 Oil Range Hydrocarbons		82.2 16.2					
Total TPH		291 16.2					

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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 5332 Blackberry Drive, San Antonio TX 78238  
 2505 North Falkenburg Rd, Tampa, FL 33619  
 5757 NW 158th St, Miami Lakes, FL 33014  
 12600 West I-20 East, Odessa, TX 79765  
 842 Cantwell Lane, Corpus Christi, TX 78408

Phone	Fax
(281) 240-4200	(281) 240-4280
(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377678,

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/18/10 23:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	

Lab Batch #: 811327

Sample: 566133-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:18

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	126	99.7	126	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 00:44

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	98	70-135	

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 06:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	111	99.6	111	70-135	
o-Terphenyl	51.7	49.8	104	70-135	

Lab Batch #: 811327

Sample: 377678-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 10:34

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	48.3	50.1	96	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] =  $100 * A / B$

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



## BS / BSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377678

Analyst: LATCOR

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811435

Sample: 811435-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.4	104	10	10.3	103	1	75-125	20	

Analyst: BEV

Date Prepared: 06/18/2010

Date Analyzed: 06/18/2010

Lab Batch ID: 811327

Sample: 566133-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	842	84	997	815	82	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377678

Lab Batch #: 811435

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377678-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	79.7	1080	1180	102	75-125	

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

Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377678

Lab Batch #: 811435

Date Analyzed: 06/19/2010

QC- Sample ID: 377678-001 D

Reporting Units: mg/kg

Project ID:

Date Prepared: 06/19/2010

Batch #: 1

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	79.7	60.3	28	20	F

Lab Batch #: 81182

Date Analyzed: 06/18/2010

QC- Sample ID: 377678-001 D

Reporting Units: %

Date Prepared: 06/18/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	7.28	7.31	0	20	

Lab Batch #: 811327

Date Analyzed: 06/19/2010

QC- Sample ID: 377669-002 D

Reporting Units: mg/kg

Date Prepared: 06/18/2010

Batch #: 1

Analyst: BEV

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	202	207	2	35	
C28-C35 Oil Range Hydrocarbons	19.9	21.9	10	35	

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

### 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:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO #:**

**Telephone No: (575) 805-7210**

**Fax No: (505) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377678  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

**Analytical Report 399299**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



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**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

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

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



10-DEC-10

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

Reference: XENCO Report No: **399299**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399299. 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. 399299 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399299



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 1 G-1	S	Dec-01-10 09:10		399299-001
TZ Cell 1 G-2	S	Dec-01-10 09:15		399299-002
TZ Cell 1 G-3	S	Dec-01-10 09:20		399299-003
TZ Cell 1 G-4	S	Dec-01-10 09:25		399299-004
TZ Cell 1 G-5	S	Dec-01-10 09:30		399299-005



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399299*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

*None*

---

**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-834805 TPH By SW8015 Mod*

*Batch: LBA-834901 TPH By SW8015 Mod*





# Certificate of Analysis Summary 399299

## Southern Union Gas Services- Monahans, Monahans, TX



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399299-001	399299-002	399299-003	399299-004	399299-005	
	<i>Field Id:</i>	TZ Cell 1 G-1	TZ Cell 1 G-2	TZ Cell 1 G-3	TZ Cell 1 G-4	TZ Cell 1 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-01-10 09:10	Dec-01-10 09:15	Dec-01-10 09:20	Dec-01-10 09:25	Dec-01-10 09:30	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-07-10 15:43	Dec-07-10 15:43	Dec-07-10 15:43	Dec-07-10 15:43	Dec-07-10 15:43	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		34.0 8.68	59.0 8.76	187 8.68	83.2 8.83	113 8.63	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		3.20 1.00	4.14 1.00	3.22 1.00	4.90 1.00	2.68 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	
	<i>Analyzed:</i>	Dec-07-10 14:51	Dec-07-10 15:20	Dec-07-10 07:12	Dec-07-10 07:32	Dec-07-10 07:50	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 15.4	ND 15.6	ND 15.5	ND 15.7	ND 15.3	
C12-C28 Diesel Range Hydrocarbons		724 15.4	855 15.6	978 15.5	826 15.7	962 15.3	
C28-C35 Oil Range Hydrocarbons		50.4 15.4	85.5 15.6	34.0 15.5	16.2 15.7	43.3 15.3	
Total TPH		774 15.4	941 15.6	1012 15.5	842 15.7	1005 15.3	

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399299,

Lab Batch #: 834805

Sample: 590552-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 06:14

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.2	100	79	70-135	
o-Terphenyl	39.3	50.1	78	70-135	

Lab Batch #: 834805

Sample: 590552-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 06:33

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.3	100	80	70-135	
o-Terphenyl	38.9	50.1	78	70-135	

Lab Batch #: 834805

Sample: 590552-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 06:53

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	84.3	100	84	70-135	
o-Terphenyl	43.0	50.1	86	70-135	

Lab Batch #: 834805

Sample: 399299-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 07:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	79.1	100	79	70-135	
o-Terphenyl	40.4	50.1	81	70-135	

Lab Batch #: 834805

Sample: 399299-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 07:32

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	99.5	79	70-135	
o-Terphenyl	42.2	49.8	85	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] =  $100 * A / B$

\*\* If results are based on MDL and validated for QC purposes.

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399299,

Project ID:

Lab Batch #: 834805

Sample: 399299-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 07:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	81.1	99.5	82	70-135	
o-Terphenyl	40.2	49.8	81	70-135	

Lab Batch #: 834805

Sample: 399422-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 13:31

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	79.2	100	79	70-135	
o-Terphenyl	38.7	50.1	77	70-135	

Lab Batch #: 834805

Sample: 399422-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 13:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	82.5	101	82	70-135	
o-Terphenyl	41.9	50.3	83	70-135	

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	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] =  $100 \times A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399299,

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 05:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399299-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 14:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	96.2	99.5	97	70-135	
o-Terphenyl	46.2	49.8	93	70-135	

Lab Batch #: 834901

Sample: 399299-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:20

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	105	100	105	70-135	
o-Terphenyl	51.2	50.0	102	70-135	

Lab Batch #: 834901

Sample: 399298-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	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: Southern Union Gas Landfarm**

**Work Order #: 399299**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834926**

**Sample: 834926-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.4	104	10	8.54	85	20	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834805**

**Sample: 590552-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	925	93	1000	966	97	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	828	83	1000	914	91	10	70-135	35	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834901**

**Sample: 590595-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	861	86	1000	848	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	876	88	1000	865	87	1	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: Southern Union Gas Landfarm



Work Order #: 399299

Lab Batch #: 834926

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399299-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes							
Chloride		34.0	207	212	86	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399299

Project ID:

Lab Batch ID: 834805

QC- Sample ID: 399422-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1010	950	94	1010	987	98	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	66.2	1010	959	88	1010	938	86	2	70-135	35	

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

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

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



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399299**

**Lab Batch #: 834926**

**Date Analyzed: 12/07/2010 15:43**

**Date Prepared: 12/07/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399299-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	34.0	28.4	18	20	

**Lab Batch #: 834637**

**Date Analyzed: 12/06/2010 15:35**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399299-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	3.20	3.21	0	20	

**Lab Batch #: 834901**

**Date Analyzed: 12/07/2010 15:48**

**Date Prepared: 12/06/2010**

**Analyst: BEV**

**QC- Sample ID: 399298-005 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	199	171	15	35	
C28-C35 Oil Range Hydrocarbons	22.6	16.8	29	35	

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

### 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:** Ben Arguijo

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies, LLC

Project #:

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: **21787**

Telephone No.: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *[Signature]*

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399299  
Initials: AM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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

**Analytical Report 399293**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

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

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



10-DEC-10

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

Reference: XENCO Report No: **399293**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399293. 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. 399293 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 399293



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 2 G-1	S	Dec-01-10 09:40		399293-001
TZ Cell 2 G-2	S	Dec-01-10 09:45		399293-002
TZ Cell 2 G-3	S	Dec-01-10 09:50		399293-003
TZ Cell 2 G-4	S	Dec-01-10 09:55		399293-004



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399293*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834901 TPH By SW8015 Mod



**Certificate of Analysis Summary 399293**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<i><b>Analysis Requested</b></i>	<i><b>Lab Id:</b></i>	399293-001	399293-002	399293-003	399293-004		
	<i><b>Field Id:</b></i>	TZ Cell 2 G-1	TZ Cell 2 G-2	TZ Cell 2 G-3	TZ Cell 2 G-4		
	<i><b>Depth:</b></i>						
	<i><b>Matrix:</b></i>	SOIL	SOIL	SOIL	SOIL		
	<i><b>Sampled:</b></i>	Dec-01-10 09:40	Dec-01-10 09:45	Dec-01-10 09:50	Dec-01-10 09:55		
<b>Anions by E300</b>	<i><b>Extracted:</b></i>						
	<i><b>Analyzed:</b></i>	Dec-07-10 09:53	Dec-07-10 09:53	Dec-07-10 09:53	Dec-07-10 09:53		
	<i><b>Units/RL:</b></i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		11.2 8.75	54.3 8.67	70.5 17.3	55.2 8.71		
<b>Percent Moisture</b>	<i><b>Extracted:</b></i>						
	<i><b>Analyzed:</b></i>	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35		
	<i><b>Units/RL:</b></i>	% RL	% RL	% RL	% RL		
Percent Moisture		3.95 1.00	3.09 1.00	2.92 1.00	3.51 1.00		
<b>TPH By SW8015 Mod</b>	<i><b>Extracted:</b></i>	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00		
	<i><b>Analyzed:</b></i>	Dec-07-10 06:06	Dec-07-10 06:36	Dec-07-10 07:06	Dec-07-10 07:36		
	<i><b>Units/RL:</b></i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 15.6	ND 15.5	ND 15.4	ND 15.5		
C12-C28 Diesel Range Hydrocarbons		733 15.6	387 15.5	481 15.4	319 15.5		
C28-C35 Oil Range Hydrocarbons		35.6 15.6	25.3 15.5	42.1 15.4	28.0 15.5		
Total TPH		769 15.6	412 15.5	523 15.4	347 15.5		

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

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Brent Barron, II  
Odessa Laboratory Manager



## Flagging Criteria

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399293,

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	50.1	93	70-135	

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 05:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399293-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 06:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	49.8	50.0	100	70-135	

Lab Batch #: 834901

Sample: 399293-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 06:36

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	77.8	99.9	78	70-135	
o-Terphenyl	36.7	50.0	73	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] =  $100 * A / B$

\* If results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399293,

Project ID:

Lab Batch #: 834901

Sample: 399293-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 07:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	84.1	99.6	84	70-135	
o-Terphenyl	39.6	49.8	80	70-135	

Lab Batch #: 834901

Sample: 399293-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 07:36

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	86.6	99.7	87	70-135	
o-Terphenyl	41.2	49.9	83	70-135	

Lab Batch #: 834901

Sample: 399298-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	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 / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399293

Analyst: LATCOR

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834922

Sample: 834922-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.6	106	10	11.7	117	10	75-125	20	

Analyst: BEV

Date Prepared: 12/06/2010

Date Analyzed: 12/07/2010

Lab Batch ID: 834901

Sample: 590595-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	861	86	1000	848	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	876	88	1000	865	87	1	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: Southern Union Gas Landfarm

Work Order #: 399293

Lab Batch #: 834922

Date Analyzed: 12/07/2010

QC- Sample ID: 399292-003 S

Date Prepared: 12/07/2010

Batch #: 1

Project ID:

Analyst: LATCOR

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	10.6	203	239	113	75-125	

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

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399293

Lab Batch #: 834633

Date Analyzed: 12/06/2010 15:35

Date Prepared: 12/06/2010

Project ID:

Analyst: JLG

QC- Sample ID: 399292-003 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.39	1.35	3	20	

Lab Batch #: 834901

Date Analyzed: 12/07/2010 15:48

Date Prepared: 12/06/2010

Analyst: BEV

QC- Sample ID: 399298-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	199	171	15	35	
C28-C35 Oil Range Hydrocarbons	22.6	16.8	29	35	

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

### 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:** Ben Arguijo

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575)396-2378 Fax No: (575) 396-1429

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Joe Lowery e-mail: pm@basinenv.com

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]

**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: Basin EnvironmentalDate/Time: 12/3/10 1:45Lab ID #: 399293Initials: AM**Sample Receipt Checklist**

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

**Nonconformance Documentation**

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

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

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

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



**Analytical Report 399292**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

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Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
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Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

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Xenco-Boca Raton (EPA Lab Code: FL01273):

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Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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



10-DEC-10

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

Reference: XENCO Report No: **399292**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399292. 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. 399292 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399292



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 3 G-1	S	Dec-01-10 10:05		399292-001
TZ Cell 3 G-2	S	Dec-01-10 10:10		399292-002
TZ Cell 3 G-3	S	Dec-01-10 10:15		399292-003
TZ Cell 3 G-4	S	Dec-01-10 10:20		399292-004
TZ Cell 3 G-5	S	Dec-01-10 10:25		399292-005



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 399292*

*Report Date: 10-DEC-10*  
*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834718 TPH By SW8015 Mod

Batch: LBA-834901 TPH By SW8015 Mod



**Certificate of Analysis Summary 399292**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399292-001	399292-002	399292-003	399292-004	399292-005	
	<i>Field Id:</i>	TZ Cell 3 G-1	TZ Cell 3 G-2	TZ Cell 3 G-3	TZ Cell 3 G-4	TZ Cell 3 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-01-10 10:05	Dec-01-10 10:10	Dec-01-10 10:15	Dec-01-10 10:20	Dec-01-10 10:25	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-07-10 01:22	Dec-07-10 01:22	Dec-07-10 09:53	Dec-07-10 09:53	Dec-07-10 09:53	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		9.53 8.55	9.39 8.55	10.6 8.52	ND 8.55	10.8 8.62	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		1.74 1.00	1.81 1.00	1.39 1.00	1.73 1.00	2.50 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	
	<i>Analyzed:</i>	Dec-07-10 03:02	Dec-07-10 03:20	Dec-07-10 03:40	Dec-07-10 03:58	Dec-07-10 05:38	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 15.3	ND 15.2	ND 15.1	ND 15.2	ND 15.4	
C12-C28 Diesel Range Hydrocarbons		3070 15.3	4470 15.2	3490 15.1	4340 15.2	3830 15.4	
C28-C35 Oil Range Hydrocarbons		58.9 15.3	287 15.2	112 15.1	220 15.2	54.9 15.4	
Total TPH		3129 15.3	4757 15.2	3602 15.1	4560 15.2	3885 15.4	

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

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**Brent Barron, II**  
Odessa Laboratory Manager

## Flagging Criteria

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

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399292,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399292-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 03:02

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.3	101	75	70-135	
o-Terphenyl	38.3	50.3	76	70-135	

Lab Batch #: 834718

Sample: 399292-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 03:20

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.6	99.7	76	70-135	
o-Terphenyl	40.7	49.9	82	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] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399292,

Project ID:

Lab Batch #: 834718

Sample: 399292-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 03:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	72.8	99.5	73	70-135	
o-Terphenyl	35.1	49.8	70	70-135	

Lab Batch #: 834718

Sample: 399292-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 03:58

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.2	99.8	75	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	50.1	93	70-135	

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 05:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	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.





## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399292,

Lab Batch #: 834901

Sample: 399292-005 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 05:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.8	99.8	87	70-135	
o-Terphenyl	37.6	49.9	75	70-135	

Lab Batch #: 834901

Sample: 399298-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	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: Southern Union Gas Landfarm

Work Order #: 399292

Analyst: LATCOR

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834917

Sample: 834917-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

Analyst: LATCOR

Date Prepared: 12/07/2010

Date Analyzed: 12/07/2010

Lab Batch ID: 834922

Sample: 834922-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.6	106	10	11.7	117	10	75-125	20	

Analyst: BEV

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834718

Sample: 590499-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## BS / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399292**

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834901**

**Sample: 590595-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	997	861	86	1000	848	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	876	88	1000	865	87	1	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: Southern Union Gas Landfarm



Work Order #: 399292

Lab Batch #: 834917

Date Analyzed: 12/07/2010

QC- Sample ID: 399258-004 S

Reporting Units: mg/kg

Project ID:

Analyst: LATCOR

Date Prepared: 12/07/2010

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	117	227	350	103	75-125	

Lab Batch #: 834922

Date Analyzed: 12/07/2010

QC- Sample ID: 399292-003 S

Reporting Units: mg/kg

Date Prepared: 12/07/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	10.6	203	239	113	75-125	

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

BRL - Below Reporting Limit

**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399292**

**Lab Batch #: 834917**

**Date Analyzed: 12/07/2010 01:22**

**Date Prepared: 12/07/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

**Lab Batch #: 834604**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	20	

**Lab Batch #: 834633**

**Date Analyzed: 12/06/2010 15:35**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399292-003 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.39	1.35	3	20	

**Lab Batch #: 834901**

**Date Analyzed: 12/07/2010 15:48**

**Date Prepared: 12/06/2010**

**Analyst: BEV**

**QC- Sample ID: 399298-005 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	199	171	15	35	
C28-C35 Oil Range Hydrocarbons	22.6	16.8	29	35	

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

## 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: Ben Arguljo

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Southern

e-mail: pm@basinenv.com

(lab use only)

ORDER #:

399292

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW - Drinking Water SL - Sludge CW - Groundwater S - Soil/Soil NP - Non-Potable Specify Other	TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	Volatiles	Semivolatiles	BTX 8014/8140/30.0 or BTX 826	RCI	N.O.R.M.	Cl- E300																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														</
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Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
<u>Southern</u>	<u>12/3/10</u>	<u>9:00</u>	<u>Mike</u>	<u>12/3/10</u>	<u>9:00</u>
Relinquished by:	Date	Time	Received by:	Date	Time
<u>Mike</u>	<u>12/3/10</u>	<u>1:45</u>	<u>Lisa</u>	<u>12/3/10</u>	<u>1:45</u>

Laboratory Comments:

Sample Containers Intact? ☒ N  
VOCs Free of Headspace? ☒ NA  
Labels on container(s) ☒ N  
Custody seals on container(s) ☒ N  
Custody seals on cooler(s) ☒ N  
Sample Hand Delivered ☒ N  
by Sampler/Client Rep. ? ☒  
by Courier? UPS DHL FedEx Lone Star  
Temperature Upon Receipt: 40.2 glass °C



**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: Basin Environmental  
 Date/Time: 12/3/10 1:45  
 Lab ID #: 399292  
 Initials: AM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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

**Analytical Report 399290**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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





10-DEC-10

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

Reference: XENCO Report No: **399290**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399290. 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. 399290 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399290



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 4 G-1	S	Dec-01-10 11:00		399290-001
TZ Cell 4 G-2	S	Dec-01-10 10:55		399290-002
TZ Cell 4 G-3	S	Dec-01-10 10:50		399290-003
TZ Cell 4 G-4	S	Dec-01-10 10:45		399290-004
TZ Cell 4 G-5	S	Dec-01-10 10:45		399290-005



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399290*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834718 TPH By SW8015 Mod



**Certificate of Analysis Summary 399290**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399290-001	399290-002	399290-003	399290-004	399290-005	
	<i>Field Id:</i>	TZ Cell 4 G-1	TZ Cell 4 G-2	TZ Cell 4 G-3	TZ Cell 4 G-4	TZ Cell 4 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-01-10 11:00	Dec-01-10 10:55	Dec-01-10 10:50	Dec-01-10 10:45	Dec-01-10 10:45	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-07-10 01:22	Dec-07-10 01:22	Dec-07-10 01:22	Dec-07-10 01:22	Dec-07-10 01:22	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		32.6 8.58	33.6 8.61	43.1 8.58	80.6 8.62	74.6 8.58	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		2.12 1.00	2.44 1.00	2.13 1.00	2.50 1.00	2.09 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	
	<i>Analyzed:</i>	Dec-07-10 01:07	Dec-07-10 01:26	Dec-07-10 01:46	Dec-07-10 02:05	Dec-07-10 02:23	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 15.3	ND 15.4	ND 15.3	ND 15.4	ND 15.3	
C12-C28 Diesel Range Hydrocarbons		3120 15.3	3240 15.4	3180 15.3	2330 15.4	2470 15.3	
C28-C35 Oil Range Hydrocarbons		52.6 15.3	36.6 15.4	64.5 15.3	47.9 15.4	41.7 15.3	
Total TPH		3173 15.3	3277 15.4	3245 15.3	2378 15.4	2512 15.3	

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

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**Brent Barron, II**  
 Odessa Laboratory Manager

## Flagging Criteria

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

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399290,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399290-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 01:07

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.5	99.7	71	70-135	
o-Terphenyl	37.8	49.9	76	70-135	

Lab Batch #: 834718

Sample: 399290-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 01:26

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.0	100	74	70-135	
o-Terphenyl	36.5	50.0	73	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: Southern Union Gas Landfarm

Work Orders : 399290,

Project ID:

Lab Batch #: 834718

Sample: 399290-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 01:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	74.0	100	74	70-135	
o-Terphenyl	37.8	50.0	76	70-135	

Lab Batch #: 834718

Sample: 399290-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 02:05

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	74.2	99.8	74	70-135	
o-Terphenyl	37.8	49.9	76	70-135	

Lab Batch #: 834718

Sample: 399290-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 02:23

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	76.9	99.9	77	70-135	
o-Terphenyl	37.7	50.0	75	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] =  $100 \times A / B$

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



## BS / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399290

Analyst: LATCOR

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834917

Sample: 834917-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

Analyst: BEV

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834718

Sample: 590499-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

Relative Percent Difference RPD =  $200 * [(C-F)/(C+F)]$

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 399290

Lab Batch #: 834917

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 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	117	227	350	103	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399290

Lab Batch #: 834917

Date Analyzed: 12/07/2010 01:22

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

Lab Batch #: 834604

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399258-004 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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

## 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: Ben Arguljo  
Company Name: Basin Environmental Services Technologies, LLC  
Company Address: P.O. Box 301  
City/State/Zip: Lovington, NM 88260  
Telephone No: (575) 396-2378  
Sampler Signature: Soor Lowry

Project Name: Southern Union Gas Landfarm  
Project #: \_\_\_\_\_  
Project Loc: Lea County, NM  
PO #: 91787  
Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Fax No: (575) 396-1429  
e-mail: pm@basinenv.com

(lab use only)		Analyze For:	
LAB # (lab use only)	FIELD CODE	TCLP:	TOTAL:
ORDER #: 399290			
LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth
LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled
LAB # (lab use only)	FIELD CODE	Field Filtered	Total # of Containers
LAB # (lab use only)	FIELD CODE	Ice	HNO <sub>3</sub>
LAB # (lab use only)	FIELD CODE	HCl	H <sub>2</sub> SO <sub>4</sub>
LAB # (lab use only)	FIELD CODE	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
LAB # (lab use only)	FIELD CODE	None	Other (Specify)
LAB # (lab use only)	FIELD CODE	DW - Drinking Water SL - Sludge	GW - Groundwater S - Soil/Sol
LAB # (lab use only)	FIELD CODE	NP - Non-potable	Specify Other
LAB # (lab use only)	FIELD CODE	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006
LAB # (lab use only)	FIELD CODE	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)
LAB # (lab use only)	FIELD CODE	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se
LAB # (lab use only)	FIELD CODE	Volatiles	Semivolatiles
LAB # (lab use only)	FIELD CODE	BTEX 8027B5030 or BTEX 8260	RCI
LAB # (lab use only)	FIELD CODE	NORM	CL- E300
LAB # (lab use only)	FIELD CODE	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY

### Special Instructions:

Relinquished by:	Date	Time	Received by:	Date	Time
<u>Soor Lowry</u>	<u>12/3/10</u>	<u>9:00</u>	<u>M. J. [Signature]</u>	<u>12/3/10</u>	<u>9:00</u>
Relinquished by:	Date	Time	Received by:	Date	Time
<u>M. J. [Signature]</u>	<u>12/3/10</u>	<u>1:45</u>	<u>Disc Murdoch</u>	<u>12/3/10</u>	<u>1:45</u>

### Laboratory Comments:

Sample Containers Intact?  
VOCs Free of Headspace?  
Labels on container(s)  
Custody seals on container(s)  
Custody seals on cooler(s)  
Sample Hand Delivered  
by Sampler/Client Rep.?  
by Courier? UPS DHL FedEx Lone Star  
Temperature Upon Receipt: 402 glass °C



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399290  
Initials: DM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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

**Analytical Report 399285**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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



10-DEC-10

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

Reference: XENCO Report No: **399285**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399285. 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. 399285 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399285



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
TZ Cell 5 G-1	S	Dec-01-10 11:10		399285-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399285*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

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***Sample receipt non conformances and Comments:***

*None*

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***Sample receipt Non Conformances and Comments per Sample:***

*None*

***Analytical Non Conformances and Comments:***

*Batch: LBA-834718 TPH By SW8015 Mod*





**Certificate of Analysis Summary 399285**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399285-001 <b>Field Id:</b> TZ Cell 5 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 11:10					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-07-10 01:22 <b>Units/RL:</b> mg/kg RL					
Chloride	ND 4.26					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 12:55 <b>Units/RL:</b> % RL					
Percent Moisture	1.46 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 11:00 <b>Analyzed:</b> Dec-06-10 22:52 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.1					
C12-C28 Diesel Range Hydrocarbons	143 15.1					
C28-C35 Oil Range Hydrocarbons	51.6 15.1					
Total TPH	195 15.1					

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

  
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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399285,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399285-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 22:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.6	99.5	74	70-135	
o-Terphenyl	35.1	49.8	70	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] =  $100 * A / B$

†† If results are based on MDL and validated for QC purposes.



## BS / BSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399285

Analyst: LATCOR

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834917

Sample: 834917-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

Analyst: BEV

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834718

Sample: 590499-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399285

Lab Batch #: 834917

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300		MATRIX / MATRIX SPIKE RECOVERY STUDY				
Analytes		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R
Chloride		117	227	350	103	75-125

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399285**

**Lab Batch #: 834917**

**Date Analyzed: 12/07/2010 01:22**

**Date Prepared: 12/07/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

**Lab Batch #: 834604**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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

### 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: Ben Arguijo**

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies, LLC

**Project #:**

**Company Address: P.O. Box 301**

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378

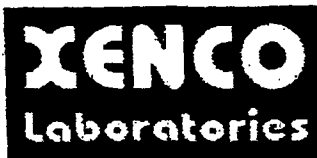
**Fax No: (575) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *30pt lower*

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



**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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399285  
Initials: DM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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



**Analytical Report 399287**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco.Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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



10-DEC-10

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

Reference: XENCO Report No: **399287**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399287. 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. 399287 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 399287



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
TZ Cell 6 G-1	S	Dec-01-10 11:20		399287-001
TZ Cell 6 G-2	S	Dec-01-10 11:25		399287-002



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399287*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834718 TPH By SW8015 Mod



**Certificate of Analysis Summary 399287**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399287-001	399287-002				
	<b>Field Id:</b>	TZ Cell 6 G-1	TZ Cell 6 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Dec-01-10 11:20	Dec-01-10 11:25				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-07-10 01:22	Dec-07-10 01:22				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		ND 17.2	81.4 8.63				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 12:55	Dec-06-10 12:55				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		2.45 1.00	2.61 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-06-10 11:00	Dec-06-10 11:00				
	<b>Analyzed:</b>	Dec-06-10 23:31	Dec-06-10 23:49				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.4	ND 15.3				
C12-C28 Diesel Range Hydrocarbons		207 15.4	276 15.3				
C28-C35 Oil Range Hydrocarbons		24.3 15.4	21.1 15.3				
Total TPH		231 15.4	297 15.3				

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

**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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399287,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399287-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 23:31

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	74.6	100	75	70-135	
o-Terphenyl	37.0	50.1	74	70-135	

Lab Batch #: 834718

Sample: 399287-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 23:49

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	72.7	99.5	73	70-135	
o-Terphenyl	36.7	49.8	74	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: Southern Union Gas Landfarm**

**Work Order #: 399287**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834917**

**Sample: 834917-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834718**

**Sample: 590499-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399287

Lab Batch #: 834917

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 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	117	227	350	103	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399287**

**Lab Batch #: 834917**

**Project ID: .**

**Date Analyzed: 12/07/2010 01:22**

**Date Prepared: 12/07/2010**

**Analyst: LATCOR**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

**Lab Batch #: 834604**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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

### 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: Ben Arguijo

Project Name: Southern Union Gas Landfarm

**Company Name** Basin Environmental Consulting, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575)396-2378 Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: 3042 lower e-mail: pm@basinenv.com

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399287  
Initials: DM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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

**Analytical Report 399288**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**

**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

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

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



10-DEC-10

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

Reference: XENCO Report No: **399288**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399288. 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. 399288 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399288



**Southern Union Gas Services- Monahans, Monahans, TX**

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 7 G-1	S	Dec-01-10 12:55		399288-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399288*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834718 TPH By SW8015 Mod





**Certificate of Analysis Summary 399288**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399288-001 <b>Field Id:</b> TZ Cell 7 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 12:55					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-07-10 01:22 <b>Units/RL:</b> mg/kg RL					
Chloride	5.69 4.41					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 12:55 <b>Units/RL:</b> % RL					
Percent Moisture	4.84 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 11:00 <b>Analyzed:</b> Dec-07-10 00:08 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.8					
C12-C28 Diesel Range Hydrocarbons	166 15.8					
C28-C35 Oil Range Hydrocarbons	16.2 15.8					
Total TPH	182 15.8					

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399288,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399288-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.4	100	73	70-135	
o-Terphenyl	35.5	50.0	71	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: Southern Union Gas Landfarm**

**Work Order #: 399288**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834917**

**Sample: 834917-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834718**

**Sample: 590499-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399288

Lab Batch #: 834917

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 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	117	227	350	103	75-125	

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

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Sample Duplicate Recovery



**Project Name:** Southern Union Gas Landfarm

**Work Order #:** 399288

**Lab Batch #:** 834917

**Date Analyzed:** 12/07/2010 01:22

**Date Prepared:** 12/07/2010

**Project ID:**

**Analyst:** LATCOR

**QC- Sample ID:** 399258-004 D

**Batch #:** 1

**Matrix:** Soil

**Reporting Units:** mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

**Lab Batch #:** 834604

**Date Analyzed:** 12/06/2010 12:55

**Date Prepared:** 12/06/2010

**Analyst:** JLG

**QC- Sample ID:** 399258-004 D

**Batch #:** 1

**Matrix:** Soil

**Reporting Units:** %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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**  
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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399288  
Initials: AM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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



**Analytical Report 399289**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



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**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 (AAL11), West Virginia (362), Kentucky (85)**  
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**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

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

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

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

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



10-DEC-10

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

Reference: XENCO Report No: **399289**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399289. 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.

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Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399289



Southern Union Gas Services- Monahans, Monahans, TX  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 8 G-2	S	Dec-01-10 12:45		399289-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 399289*

*Report Date: 10-DEC-10*  
*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834718 TPH By SW8015 Mod



**Certificate of Analysis Summary 399289**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399289-001 <b>Field Id:</b> TZ Cell 8 G-2 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 12:45					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-07-10 01:22 <b>Units/RL:</b> mg/kg RL					
Chloride	24.3 17.4					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 12:55 <b>Units/RL:</b> % RL					
Percent Moisture	3.23 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 11:00 <b>Analyzed:</b> Dec-07-10 00:28 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.5					
C12-C28 Diesel Range Hydrocarbons	556 15.5					
C28-C35 Oil Range Hydrocarbons	41.1 15.5					
Total TPH	597 15.5					

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399289,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399289-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	72.0	100	72	70-135	
o-Terphenyl	35.3	50.1	70	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] =  $100 * A / B$

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



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399289**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834917**

**Sample: 834917-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834718**

**Sample: 590499-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399289

Lab Batch #: 834917

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 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	117	227	350	103	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399289

Lab Batch #: 834917

Date Analyzed: 12/07/2010 01:22

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

Lab Batch #: 834604

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399258-004 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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

## Page 11 of 12

## Final 1.001

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

**Project Name: Southern Union Gas Landfarm**

Project #: \_\_\_\_\_

Project Loc: Lea County, NM

PO #: 91787

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: pm@basinenv.com

[illegible]

**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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399289  
Initials: DM

**Sample Receipt Checklist**

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

**Nonconformance Documentation**

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

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

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

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

**Analytical Report 399298**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
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Louisiana (04176), USDA (P330-07-00105)

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

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10-DEC-10

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

Reference: XENCO Report No: **399298**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399298. 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. 399298 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399298



**Southern Union Gas Services- Monahans, Monahans, TX**

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 9 G-1	S	Dec-01-10 12:05		399298-001
TZ Cell 9 G-2	S	Dec-01-10 12:10		399298-002
TZ Cell 9 G-3	S	Dec-01-10 12:10		399298-003
TZ Cell 9 G-4	S	Dec-01-10 12:15		399298-004
TZ Cell 9 G-5	S	Dec-01-10 12:20		399298-005



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399298*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834901 TPH By SW8015 Mod





# Certificate of Analysis Summary 399298

## Southern Union Gas Services- Monahans, Monahans, TX



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399298-001	399298-002	399298-003	399298-004	399298-005	
	<i>Field Id:</i>	TZ Cell 9 G-1	TZ Cell 9 G-2	TZ Cell 9 G-3	TZ Cell 9 G-4	TZ Cell 9 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-01-10 12:05	Dec-01-10 12:10	Dec-01-10 12:10	Dec-01-10 12:15	Dec-01-10 12:20	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-07-10 09:53	Dec-07-10 09:53	Dec-07-10 09:53	Dec-07-10 09:53	Dec-07-10 09:53	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		84.0 8.60	263 21.5	58.8 21.5	56.3 17.2	33.5 8.62	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		2.32 1.00	2.16 1.00	2.52 1.00	2.36 1.00	2.54 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	
	<i>Analyzed:</i>	Dec-07-10 12:25	Dec-07-10 12:53	Dec-07-10 13:21	Dec-07-10 13:51	Dec-07-10 14:21	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 15.3	ND 15.3	ND 15.4	ND 15.3	ND 15.3	
C12-C28 Diesel Range Hydrocarbons		55.3 15.3	689 15.3	312 15.4	335 15.3	199 15.3	
C28-C35 Oil Range Hydrocarbons		ND 15.3	54.1 15.3	41.4 15.4	40.3 15.3	22.6 15.3	
Total TPH		55.3 15.3	743 15.3	353 15.4	375 15.3	222 15.3	

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399298,

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	50.1	93	70-135	

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 05:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399298-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 12:25

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	111	99.5	112	70-135	
o-Terphenyl	54.3	49.8	109	70-135	

Lab Batch #: 834901

Sample: 399298-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 12:53

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	108	99.7	108	70-135	
o-Terphenyl	51.4	49.9	103	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] =  $100 * A / B$

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

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399298,

Project ID:

Lab Batch #: 834901

Sample: 399298-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 13:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	99.8	105	70-135	
o-Terphenyl	50.2	49.9	101	70-135	

Lab Batch #: 834901

Sample: 399298-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 13:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	105	99.9	105	70-135	
o-Terphenyl	48.7	50.0	97	70-135	

Lab Batch #: 834901

Sample: 399298-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 14:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	126	99.5	127	70-135	
o-Terphenyl	59.6	49.8	120	70-135	

Lab Batch #: 834901

Sample: 399298-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399298**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834922**

**Sample: 834922-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.6	106	10	11.7	117	10	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834901**

**Sample: 590595-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	861	86	1000	848	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	876	88	1000	865	87	1	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: Southern Union Gas Landfarm



Work Order #: 399298

Lab Batch #: 834922

Date Analyzed: 12/07/2010

QC- Sample ID: 399292-003 S

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	10.6	203	239	113	75-125	

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

BRL - Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399298

Lab Batch #: 834633

Project ID:

Date Analyzed: 12/06/2010 15:35

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399292-003 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.39	1.35	3	20	

Lab Batch #: 834901

Date Analyzed: 12/07/2010 15:48

Date Prepared: 12/06/2010

Analyst: BEV

QC- Sample ID: 399298-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	199	171	15	35	
C28-C35 Oil Range Hydrocarbons	22.6	16.8	29	35	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

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

BRL - Below Reporting Limit

## Page 12 of 13

## Final 1.001

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

**Project Name: Southern Union Gas Landfarm**

Project #: \_\_\_\_\_

**Project Loc: Lea County, NM**

PO #: 91787

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]





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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399298  
Initials: AM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.6.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

**Analytical Report 399297**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

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

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



10-DEC-10

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

Reference: XENCO Report No: **399297**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399297. 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. 399297 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399297



### Southern Union Gas Services- Monahans, Monahans, TX Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 10 G-1	S	Dec-01-10 12:25		399297-001
TZ Cell 10 G-2	S	Dec-01-10 12:25		399297-002
TZ Cell 10 G-3	S	Dec-01-10 12:30		399297-003
TZ Cell 10 G-4	S	Dec-01-10 12:30		399297-004



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 399297*

*Report Date: 10-DEC-10*  
*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834901 TPH By SW8015 Mod



**Certificate of Analysis Summary 399297**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399297-001	399297-002	399297-003	399297-004		
	<b>Field Id:</b>	TZ Cell 10 G-1	TZ Cell 10 G-2	TZ Cell 10 G-3	TZ Cell 10 G-4		
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL	SOIL	SOIL		
	<b>Sampled:</b>	Dec-01-10 12:25	Dec-01-10 12:25	Dec-01-10 12:30	Dec-01-10 12:30		
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-07-10 09:53	Dec-07-10 09:53	Dec-07-10 09:53	Dec-07-10 09:53		
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		ND 4.25	ND 8.56	ND 8.54	ND 8.59		
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35	Dec-06-10 15:35		
	<b>Units/RL:</b>	% RL	% RL	% RL	% RL		
Percent Moisture		1.22 1.00	1.89 1.00	1.62 1.00	2.21 1.00		
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00		
	<b>Analyzed:</b>	Dec-07-10 10:02	Dec-07-10 11:00	Dec-07-10 11:29	Dec-07-10 11:57		
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 15.2	ND 15.3	ND 15.2	ND 15.3		
C12-C28 Diesel Range Hydrocarbons		643 15.2	265 15.3	185 15.2	905 15.3		
C28-C35 Oil Range Hydrocarbons		76.3 15.2	40.0 15.3	27.3 15.2	95.3 15.3		
Total TPH		719 15.2	305 15.3	212 15.2	1000 15.3		

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399297,

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	50.1	93	70-135	

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 05:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399297-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 10:02

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.8	100	70-135	
o-Terphenyl	47.1	49.9	94	70-135	

Lab Batch #: 834901

Sample: 399297-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 11:00

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.8	95	70-135	
o-Terphenyl	45.0	49.9	90	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: Southern Union Gas Landfarm

Work Orders : 399297,

Project ID:

Lab Batch #: 834901

Sample: 399297-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 11:29

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.6	99.5	90	70-135	
o-Terphenyl	40.6	49.8	82	70-135	

Lab Batch #: 834901

Sample: 399297-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 11:57

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	47.8	50.0	96	70-135	

Lab Batch #: 834901

Sample: 399298-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399297**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834922**

**Sample: 834922-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.6	106	10	11.7	117	10	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834901**

**Sample: 590595-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	861	86	1000	848	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	876	88	1000	865	87	1	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: Southern Union Gas Landfarm



Work Order #: 399297

Lab Batch #: 834922

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399292-003 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	10.6	203	239	113	75-125	

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

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399297

Lab Batch #: 834633

Project ID:

Date Analyzed: 12/06/2010 15:35

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399292-003 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.39	1.35	3	20	

Lab Batch #: 834901

Date Analyzed: 12/07/2010 15:48

Date Prepared: 12/06/2010

Analyst: BEV

QC- Sample ID: 399298-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	199	171	15	35	
C28-C35 Oil Range Hydrocarbons	22.6	16.8	29	35	

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

### 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:** Ben Arguijo

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies, LLC

Project #:

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: **(575) 396-2376.**

**Fax No: (505) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: 3002 Lowry

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]**Special Instructions:**

Relinquished by: <i>5002 Loures</i>	Date <i>12/3/10</i>	Time <i>9:00</i>	Received by: <i>Mik Jones</i>	Date <i>12/3/10</i>	Time <i>9:00</i>
Relinquished by:	Date	Time	Received by:	Date	Time
Relinquished by: <i>M. Jones</i>	Date <i>12/3/10</i>	Time <i>1:45</i>	Received by ELOT: <i>Lisa Muddick</i>	Date <i>12/3/10</i>	Time <i>1:45</i>

Laboratory Comments:

### Sample Containers Intact?

### VOCs Free of Headspace?

Labels on container(s)

**Custody seals on containers**

### Custody seals on cooler

**Sample Hand Delivered**

by Courier? ☒ URS ☐ DHL ☐ FedEx ☐ Lone Star

by Courier: UPS DHL FedEx Home Star  
403 213-5555

Temperature Upon Receipt: 90°C

Y  
Y  
Y  
Y  
Y  
Y  
Y

N  
N  
N  
N  
N  
N  
N

FedEx Lone Star

5 °C



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399297  
Initials: DM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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

**Analytical Report 399296**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



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

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**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 (AAL11), 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)**

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**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

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

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



10-DEC-10

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

Reference: XENCO Report No: **399296**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399296. 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. 399296 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399296



**Southern Union Gas Services- Monahans, Monahans, TX**

**Southern Union Gas Landfarm**

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
TZ Cell 11 G-1	S	Dec-01-10 13:10		399296-001
TZ Cell 11 G-2	S	Dec-01-10 13:15		399296-002



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399296*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

*None*

---

**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-834901 TPH By SW8015 Mod*



**Certificate of Analysis Summary 399296**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

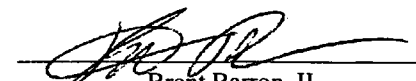
**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399296-001	399296-002				
	<b>Field Id:</b>	TZ Cell 11 G-1	TZ Cell 11 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Dec-01-10 13:10	Dec-01-10 13:15				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-07-10 09:53	Dec-07-10 09:53				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		215 43.1	44.1 21.6				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 15:35	Dec-06-10 15:35				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		2.60 1.00	2.64 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-06-10 11:00	Dec-06-10 11:00				
	<b>Analyzed:</b>	Dec-07-10 09:06	Dec-07-10 09:34				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.3	ND 15.5				
C12-C28 Diesel Range Hydrocarbons		362 15.3	181 15.5				
C28-C35 Oil Range Hydrocarbons		15.3 15.3	17.8 15.5				
Total TPH		377 15.3	199 15.5				

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399296,

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	50.1	93	70-135	

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 05:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399296-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 09:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	82.3	99.5	83	70-135	
o-Terphenyl	38.9	49.8	78	70-135	

Lab Batch #: 834901

Sample: 399296-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 09:34

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.7	101	95	70-135	
o-Terphenyl	45.9	50.3	91	70-135	

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399296,

Project ID:

Lab Batch #: 834901

Sample: 399298-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	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 / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399296

Analyst: LATCOR

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834922

Sample: 834922-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.6	106	10	11.7	117	10	75-125	20	

Analyst: BEV

Date Prepared: 12/06/2010

Date Analyzed: 12/07/2010

Lab Batch ID: 834901

Sample: 590595-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	861	86	1000	848	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	876	88	1000	865	87	1	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: Southern Union Gas Landfarm



Work Order #: 399296

Lab Batch #: 834922

Date Analyzed: 12/07/2010

QC- Sample ID: 399292-003 S

Reporting Units: mg/kg

Date Prepared: 12/07/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### 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	10.6	203	239	113	75-125	

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

BRL - Below Reporting Limit





## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399296

Lab Batch #: 834633

Project ID:

Date Analyzed: 12/06/2010 15:35

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399292-003 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.39	1.35	3	20	

Lab Batch #: 834901

Date Analyzed: 12/07/2010 15:48

Date Prepared: 12/06/2010

Analyst: BEV

QC- Sample ID: 399298-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	199	171	15	35	
C28-C35 Oil Range Hydrocarbons	22.6	16.8	29	35	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

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

BRL - Below Reporting Limit

## Page 12 of 13

## Final 1.001

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

**Project Name: Southern Union Gas Landfarm**

Project #: \_\_\_\_\_

Project Loc: Lea County, NM

PO #: 91787

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399296  
Initials: DM

### Sample Receipt Checklist

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

### Nonconformance Documentation

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

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

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

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

**Analytical Report 399294**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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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 (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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



10-DEC-10

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

Reference: XENCO Report No: **399294**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399294. 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. 399294 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399294



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 12 G-1	S	Dec-01-10 13:25		399294-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399294*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

*None*

---

**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-834901 TPH By SW8015 Mod*



**Certificate of Analysis Summary 399294**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399294-001 <b>Field Id:</b> TZ Cell 12 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 13:25					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-07-10 09:53 <b>Units/RL:</b> mg/kg RL					
Chloride	ND 43.5					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 15:35 <b>Units/RL:</b> % RL					
Percent Moisture	3.38 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 11:00 <b>Analyzed:</b> Dec-07-10 08:06 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.6					
C12-C28 Diesel Range Hydrocarbons	374 15.6					
C28-C35 Oil Range Hydrocarbons	42.4 15.6					
Total TPH	416 15.6					

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

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Brent Barron, II  
Odessa Laboratory Manager



## Flagging Criteria

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399294,

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	50.1	93	70-135	

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 05:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399294-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 08:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	95.3	100	95	70-135	
o-Terphenyl	45.5	50.2	91	70-135	

Lab Batch #: 834901

Sample: 399298-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	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] =  $100 * A / B$

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



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399294**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834922**

**Sample: 834922-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.6	106	10	11.7	117	10	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834901**

**Sample: 590595-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	861	86	1000	848	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	876	88	1000	865	87	1	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: Southern Union Gas Landfarm

Work Order #: 399294

Lab Batch #: 834922

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399292-003 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	10.6	203	239	113	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399294**

**Lab Batch #: 834633**

**Project ID:**

**Date Analyzed: 12/06/2010 15:35**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399292-003 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.39	1.35	3	20	

**Lab Batch #: 834901**

**Date Analyzed: 12/07/2010 15:48**

**Date Prepared: 12/06/2010**

**Analyst: BEV**

**QC- Sample ID: 399298-005 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	199	171	15	35	
C28-C35 Oil Range Hydrocarbons	22.6	16.8	29	35	

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

### 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: Ben Arguijo

**Project Name: Southern Union Gas Landfarm**

Company Name Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

**Project Loc:** Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378 Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Jeff Lower e-mail: pm@basinenv.com

e-mail: pm@basinenv.com

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399294  
Initials: AM

### Sample Receipt Checklist

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

### Nonconformance Documentation

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

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

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

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

**Analytical Report 399291**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



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

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

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

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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





10-DEC-10

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

Reference: XENCO Report No: **399291**  
**Southern Union Ga Landfarm**  
Project Address: Lea County, NM

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## Sample Cross Reference 399291



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Ga Landfarm

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
TZ Cell 13 G-1	S	Dec-01-10 13:30		399291-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Ga Landfarm*



*Project ID:*

*Work Order Number: 399291*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

*None*

---

**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-834718 TPH By SW8015 Mod*



**Certificate of Analysis Summary 399291**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Ga Landfarm**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399291-001 <b>Field Id:</b> TZ Cell 13 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 13:30					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-07-10 01:22 <b>Units/RL:</b> mg/kg RL					
Chloride	425 22.3					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 12:55 <b>Units/RL:</b> % RL					
Percent Moisture	5.63 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 11:00 <b>Analyzed:</b> Dec-07-10 02:42 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.9					
C12-C28 Diesel Range Hydrocarbons	185 15.9					
C28-C35 Oil Range Hydrocarbons	16.2 15.9					
Total TPH	201 15.9					

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Brent Barron, II  
Odessa Laboratory Manager

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- 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.
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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Ga Landfarm

Work Orders : 399291,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399291-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 02:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.0	99.8	75	70-135	
o-Terphenyl	37.4	49.9	75	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: Southern Union Ga Landfarm

Work Order #: 399291

Analyst: LATCOR

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834917

Sample: 834917-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

Analyst: BEV

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834718

Sample: 590499-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries



Project Name: Southern Union Ga Landfarm

Work Order #: 399291

Lab Batch #: 834917

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	117	227	350	103	75-125	

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

Below Reporting Limit





## Sample Duplicate Recovery



Project Name: Southern Union Ga Landfarm

Work Order #: 399291

Lab Batch #: 834917

Date Analyzed: 12/07/2010 01:22

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399258-004 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

Lab Batch #: 834604

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399258-004 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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

### 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: **Ben Argujillo**

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies, LLC

Project #:

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Tap Lowry

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



**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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399291  
Initials: AM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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

**Analytical Report 399286**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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



10-DEC-10

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

Reference: XENCO Report No: **399286**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399286. 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. 399286 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 399286



Southern Union Gas Services- Monahans, Monahans, TX  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 14 G-1	S	Dec-01-10 08:55		399286-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399286*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834718 TPH By SW8015 Mod



**Certificate of Analysis Summary 399286**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399286-001 <b>Field Id:</b> TZ Cell 14 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 08:55					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-07-10 01:22 <b>Units/RL:</b> mg/kg RL					
Chloride	ND 4.27					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 12:55 <b>Units/RL:</b> % RL					
Percent Moisture	1.68 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 11:00 <b>Analyzed:</b> Dec-06-10 23:12 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.3					
C12-C28 Diesel Range Hydrocarbons	127 15.3					
C28-C35 Oil Range Hydrocarbons	15.6 15.3					
Total TPH	143 15.3					

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

  
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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399286,

Project ID:

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399286-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 23:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.0	100	73	70-135	
o-Terphenyl	35.1	50.0	70	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] =  $100 * A / B$

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



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399286**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834917**

**Sample: 834917-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834718**

**Sample: 590499-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

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

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

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

All results are based on MDL and Validated for QC Purposes



## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 399286

Lab Batch #: 834917

Date Analyzed: 12/07/2010

QC- Sample ID: 399258-004 S

Reporting Units: mg/kg

Date Prepared: 12/07/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

Inorganic Anions by EPA 300		MATRIX / MATRIX SPIKE RECOVERY STUDY				
Analytes		Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R
Chloride		117	227	350	103	75-125

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

Below Reporting Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399286**

**Lab Batch #: 834917**

**Project ID:**

**Date Analyzed: 12/07/2010 01:22**

**Date Prepared: 12/07/2010**

**Analyst: LATCOR**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

**Lab Batch #: 834604**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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

### 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: **Ben Arguljo**

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Services Technologies, LLC**

Project #:

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91987

Telephone No: (575) 396-2378 Fax No: (575) 396-1429

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Scott Lowry e-mail: pm@basinenv.com

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399286  
Initials: AM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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

**Analytical Report 399295**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**14-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

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

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





14-DEC-10

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

Reference: XENCO Report No: **399295**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399295. 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. 399295 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 399295



Southern Union Gas Services- Monahans, Monahans, TX  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
TZ Cell 15 G-1	S	Dec-01-10 13:05		399295-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399295*

*Report Date: 14-DEC-10*

*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

*None*

---

**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-834901 TPH By SW8015 Mod*



**Certificate of Analysis Summary 399295**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 14-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399295-001 <b>Field Id:</b> TZ Cell 15 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 13:05					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-13-10 11:03 <b>Units/RL:</b> mg/kg RL					
Chloride	26.2 8.82					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 15:35 <b>Units/RL:</b> % RL					
Percent Moisture	4.72 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 11:00 <b>Analyzed:</b> Dec-07-10 08:36 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.7					
C12-C28 Diesel Range Hydrocarbons	218 15.7					
C28-C35 Oil Range Hydrocarbons	29.7 15.7					
Total TPH	248 15.7					

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

ork Orders : 399295,

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	107	99.7	107	70-135	
o-Terphenyl	48.1	49.9	96	70-135	

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 04:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	50.1	93	70-135	

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 05:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399295-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 08:36

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	85.0	99.5	85	70-135	
o-Terphenyl	40.0	49.8	80	70-135	

Lab Batch #: 834901

Sample: 399298-005 D / MD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	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: Southern Union Gas Landfarm

Work Order #: 399295

Analyst: LATCOR

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834922

Sample: 834922-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.6	106	10	11.7	117	10	75-125	20	

Analyst: LATCOR

Date Prepared: 12/13/2010

Date Analyzed: 12/13/2010

Lab Batch ID: 835703

Sample: 835703-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.2	102	10	10.7	107	5	75-125	20	

Analyst: BEV

Date Prepared: 12/06/2010

Date Analyzed: 12/07/2010

Lab Batch ID: 834901

Sample: 590595-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	997	861	86	1000	848	85	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	876	88	1000	865	87	1	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: Southern Union Gas Landfarm

Work Order #: 399295

Lab Batch #: 834922

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399292-003 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	10.6	203	239	113	75-125	

Lab Batch #: 835703

Date Analyzed: 12/13/2010

Date Prepared: 12/13/2010

Analyst: LATCOR

QC- Sample ID: 400359-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	2450	1000	3570	112	75-125	

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit





## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399295

Lab Batch #: 835703

Date Analyzed: 12/13/2010 11:03

Date Prepared: 12/13/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 400359-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	2450	2450	0	20	

Lab Batch #: 834633

Date Analyzed: 12/06/2010 15:35

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399292-003 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	1.39	1.35	3	20	

Lab Batch #: 834901

Date Analyzed: 12/07/2010 15:48

Date Prepared: 12/06/2010

Analyst: BEV

QC- Sample ID: 399298-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	
C12-C28 Diesel Range Hydrocarbons	199	171	15	35	
C28-C35 Oil Range Hydrocarbons	22.6	16.8	29	35	

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

### 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:** Ben Arguljo

**Project Name: Southern Union Gas Landfarm**

Company Name Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378 Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *Sofer Lowery* e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]

**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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399295  
Initials: AM

**Sample Receipt Checklist**

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

**Nonconformance Documentation**

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

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

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

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



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399295  
Initials: AM

#### Sample Receipt Checklist

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

#### Nonconformance Documentation

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

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

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

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

**Laboratory  
Analytical Results  
(Vadose Zone)**

# Analytical Report 377688

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377688**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377688. 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. 377688 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377688



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 1 G-1	S	Jun-15-10 08:10		377688-001
VZ Cell 1 G-2	S	Jun-15-10 08:20		377688-002
VZ Cell 1 G-3	S	Jun-15-10 08:30		377688-003
VZ Cell 1 G-4	S	Jun-15-10 08:40		377688-004
VZ Cell 1 G-5	S	Jun-15-10 08:50		377688-005





## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377688*

*Report Date: 23-JUN-10*

*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811318 Percent Moisture

None

Batch: LBA-811388 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811388, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; QC data not confirmed by re-analysis

Samples affected are: 377688-001 SD.

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811398 BTEX by EPA 8021B  
SW8021BM

Batch 811398, Toluene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Benzene, Ethylbenzene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate.

Samples affected are: 377688-005, -004, -003, -002.

The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

Batch: LBA-811435 Inorganic Anions by EPA 300  
E300MI

Batch 811435, Chloride RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 377688-005, -004, -001, -003, -002.



# Certificate of Analysis Summary 377688

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377688-001	377688-002	377688-003	377688-004	377688-005	
	<i>Field Id:</i>	VZ Cell 1 G-1	VZ Cell 1 G-2	VZ Cell 1 G-3	VZ Cell 1 G-4	VZ Cell 1 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-15-10 08:10	Jun-15-10 08:20	Jun-15-10 08:30	Jun-15-10 08:40	Jun-15-10 08:50	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		24.1 4.67	11.0 4.48	10.2 4.75	18.0 4.54	ND 4.98	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Jun-19-10 10:15	Jun-19-10 10:55	Jun-19-10 10:55	Jun-19-10 10:55	Jun-19-10 10:55	
	<i>Analyzed:</i>	Jun-19-10 23:54	Jun-20-10 02:31	Jun-20-10 02:53	Jun-20-10 03:16	Jun-20-10 03:39	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	
Toluene		ND 0.0022	ND 0.0021	ND 0.0022	ND 0.0022	ND 0.0024	
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	
m,p-Xylenes		ND 0.0022	ND 0.0021	ND 0.0022	ND 0.0022	ND 0.0024	
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	
Total Xylenes		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	
Total BTEX		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		10.1 1.00	6.25 1.00	11.6 1.00	7.46 1.00	15.7 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	
	<i>Analyzed:</i>	Jun-19-10 17:12	Jun-19-10 17:42	Jun-19-10 18:13	Jun-19-10 18:43	Jun-19-10 19:13	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 16.7	ND 16.0	ND 16.9	ND 16.1	ND 17.7	
C12-C28 Diesel Range Hydrocarbons		ND 16.7	ND 16.0	ND 16.9	ND 16.1	ND 17.7	
C28-C35 Oil Range Hydrocarbons		ND 16.7	ND 16.0	ND 16.9	ND 16.1	ND 17.7	
Total TPH		ND 16.7	ND 16.0	ND 16.9	ND 16.1	ND 17.7	

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

**K** Sample analyzed outside of recommended hold time.

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377688,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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] =  $100 * A / B$

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

**Form 2 - Surrogate Recoveries**

Project Name: Southern Union Gas Landfarm

Work Orders : 377688,

Project ID:

Lab Batch #: 811393

Sample: 377688-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 23:54

**SURROGATE RECOVERY STUDY**

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 811398

Sample: 566183-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/20/10 00:39

**SURROGATE RECOVERY STUDY**

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811398

Sample: 566183-1-BSL / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/20/10 01:01

**SURROGATE RECOVERY STUDY**

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 811398

Sample: 566183-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/20/10 02:09

**SURROGATE RECOVERY STUDY**

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 811398

Sample: 377688-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 02:31

**SURROGATE RECOVERY STUDY**

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0280	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: Southern Union Gas Landfarm

Work Orders : 377688,

Project ID:

Lab Batch #: 811398

Sample: 377688-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 02:53

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 811398

Sample: 377688-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 03:16

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 811398

Sample: 377688-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 03:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0269	0.0300	90	80-120	

Lab Batch #: 811398

Sample: 377688-005 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 05:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 811398

Sample: 377688-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 05:31

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0304	0.0300	101	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: Southern Union Gas Landfarm

Work Orders : 377688,

Project ID:

Lab Batch #: 811388

Sample: 566174-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 15:38

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	58.7	49.9	118	70-135	

Lab Batch #: 811388

Sample: 566174-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 16:10

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	110	99.7	110	70-135	
o-Terphenyl	52.5	49.9	105	70-135	

Lab Batch #: 811388

Sample: 566174-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 16:41

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	59.7	50.1	119	70-135	

Lab Batch #: 811388

Sample: 377688-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 17:12

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	79.2	100	79	70-135	
o-Terphenyl	44.6	50.0	89	70-135	

Lab Batch #: 811388

Sample: 377688-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 17:42

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.0	99.7	75	70-135	
o-Terphenyl	42.3	49.9	85	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: Southern Union Gas Landfarm

Work Orders : 377688,

Project ID:

Lab Batch #: 811388

Sample: 377688-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:13

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.9	99.5	91	70-135	
o-Terphenyl	51.5	49.8	103	70-135	

Lab Batch #: 811388

Sample: 377688-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:43

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.5	99.5	81	70-135	
o-Terphenyl	45.5	49.8	91	70-135	

Lab Batch #: 811388

Sample: 377688-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:13

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.3	99.5	83	70-135	
o-Terphenyl	47.7	49.8	96	70-135	

Lab Batch #: 811388

Sample: 377688-001 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 03:36

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.6	130	70-135	
o-Terphenyl	62.0	49.8	124	70-135	

Lab Batch #: 811388

Sample: 377688-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 04:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	69.8	50.0	140	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: Southern Union Gas Landfarm

Work Order #: 377688

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

Analyst: ASA

Date Prepared: 06/19/2010

Date Analyzed: 06/20/2010

Lab Batch ID: 811398

Sample: 566183-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1028	103	0.1	0.1034	103	1	70-130	35	
Toluene	ND	0.1000	0.0974	97	0.1	0.0979	98	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1003	100	0.1	0.1013	101	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2075	104	0.2	0.2095	105	1	70-135	35	
o-Xylene	ND	0.1000	0.1067	107	0.1	0.1069	107	0	71-133	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



## BS / BS<sub>L</sub> Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377688**

**Analyst: LATCOR**

**Date Prepared: 06/19/2010**

**Project ID:**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811435**

**Sample: 811435-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.4	104	10	10.3	103	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811388**

**Sample: 566174-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	998	1080	108	997	987	99	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	910	91	997	839	84	8	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: Southern Union Gas Landfarm



Work Order #: 377688

Lab Batch #: 811435

Date Analyzed: 06/19/2010

QC- Sample ID: 377678-001 S

Reporting Units: mg/kg

Date Prepared: 06/19/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	79.7	1080	1180	102	75-125	

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

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377688

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811398

QC- Sample ID: 377688-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/20/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1182	0.0847	72	0.1189	0.0764	64	10	70-130	35	X
Toluene	ND	0.1182	0.0812	69	0.1189	0.0738	62	10	70-130	35	X
Ethylbenzene	ND	0.1182	0.0837	71	0.1189	0.0769	65	8	71-129	35	X
m,p-Xylenes	ND	0.2363	0.1743	74	0.2377	0.1602	67	8	70-135	35	X
o-Xylene	ND	0.1182	0.0866	73	0.1189	0.0779	66	11	71-133	35	X

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

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

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



## Form 3 - MS / MSD Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377688

Project ID:

Lab Batch ID: 811388

QC- Sample ID: 377688-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/20/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1110	1260	114	1110	1350	122	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1110	891	80	1110	1010	91	13	70-135	35	

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

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

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



## Sample Duplicate Recovery



**Project Name:** Southern Union Gas Landfarm

**Work Order #:** 377688

**Lab Batch #:** 811435

**Date Analyzed:** 06/19/2010

**Date Prepared:** 06/19/2010

**Project ID:**

**Analyst:** LATCOR

**QC- Sample ID:** 377678-001 D

**Batch #:** 1

**Matrix:** Soil

**Reporting Units:** mg/kg

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	79.7	60.3	28	20	F

**Lab Batch #:** 811318

**Date Analyzed:** 06/19/2010

**Date Prepared:** 06/19/2010

**Analyst:** JLG

**QC- Sample ID:** 377717-002 D

**Batch #:** 1

**Matrix:** Soil

**Reporting Units:** %

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

## 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: Camille Bryant

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Consulting, LLC

Project #:

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (575)605-7210

Fax No: (505) 386-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cibryant@basin-consulting.com

(lab use only)

ORDER #:

377688

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers										Matrix	Analyze For:										RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
								Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW - Drinking Water	SL - SUDG		TCLP:	TOTAL:										
01	VZ Cell 1 G-1			6/15/10	0810		1	X								SOIL	X													
02	VZ Cell 1 G-2			6/15/10	0820		1	X								SOIL	X													
03	VZ Cell 1 G-3			6/15/10	0830		1	X								SOIL	X													
04	VZ Cell 1 G-4			6/15/10	0840		1	X								SOIL	X													
05	VZ Cell 1 G-5			6/15/10	0850		1	X								SOIL	X													

Special Instructions:

Relinquished by:

Relinquished by:

Relinquished by:

Date

Time

Received by:

Date

Time

Date

Time

Received by:

Date

Time

Date

Time

Received by ELOT:

Date

Time

Laboratory Comments:

VOCs Free of Headspace?

Custody seals on container(s)

Sample Hand Delivered

by Sampler/Client Rep.?

by Courier?

Temperature Upon Receipt:

Y

N

Y

N

Y

N

Y

N

Y

N

Y

N

3.6 °C



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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377688  
Initials: AL

### Sample Receipt Checklist

1. Samples on Ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles?</u>	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

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

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

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

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



# Analytical Report 377717

for

**Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377717**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377717. 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. 377717 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

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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



## Sample Cross Reference 377717



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 2 G-1	S	Jun-15-10 09:00		377717-001
VZ Cell 2 G-2	S	Jun-15-10 09:10		377717-002
VZ Cell 2 G-3	S	Jun-15-10 09:20		377717-003
VZ Cell 2 G-4	S	Jun-15-10 09:30		377717-004



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377717*

*Report Date: 23-JUN-10*

*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

*None*

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**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-811317 Percent Moisture*

*None*

*Batch: LBA-811318 Percent Moisture*

*None*

*Batch: LBA-811393 BTEX by EPA 8021B*

*None*

*Batch: LBA-811582 Inorganic Anions by EPA 300*

*E300MI*

*Batch 811582, Chloride recovered above QC limits in the Matrix Spike.*

*Samples affected are: 377717-002, -003, -001, -004.*

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

*Batch: LBA-811610 TPH By SW8015 Mod*

*SW8015MOD\_NM*

*Batch 811610, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;*

*QC data not confirmed by re-analysis*

*Samples affected are: 377715-001 S.*



# Certificate of Analysis Summary 377717

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377717-001	377717-002	377717-003	377717-004		
	<i>Field Id:</i>	VZ Cell 2 G-1	VZ Cell 2 G-2	VZ Cell 2 G-3	VZ Cell 2 G-4		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jun-15-10 09:00	Jun-15-10 09:10	Jun-15-10 09:20	Jun-15-10 09:30		
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-21-10 12:53	Jun-21-10 12:53	Jun-21-10 12:53	Jun-21-10 12:53		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		10.9 4.45	6.44 4.63	9.08 4.53	6.88 4.44		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Jun-19-10 10:15	Jun-19-10 10:15	Jun-19-10 10:15	Jun-19-10 10:15		
	<i>Analyzed:</i>	Jun-19-10 16:27	Jun-19-10 16:49	Jun-19-10 17:12	Jun-19-10 17:34		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
Toluene		ND 0.0021	ND 0.0022	ND 0.0022	ND 0.0021		
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
m,p-Xylenes		ND 0.0021	ND 0.0022	ND 0.0022	ND 0.0021		
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
Total Xylenes		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
Total BTEX		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18		
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL		
Percent Moisture		5.52 1.00	9.22 1.00	7.29 1.00	5.46 1.00		
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 14:55	Jun-18-10 14:55	Jun-18-10 14:55	Jun-18-10 14:55		
	<i>Analyzed:</i>	Jun-21-10 21:01	Jun-21-10 21:28	Jun-21-10 21:55	Jun-21-10 22:21		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 15.8	ND 15.7	ND 16.2	ND 15.8		
C12-C28 Diesel Range Hydrocarbons		ND 15.8	ND 15.7	ND 16.2	ND 15.8		
C28-C35 Oil Range Hydrocarbons		ND 15.8	ND 15.7	ND 16.2	ND 15.8		
Total TPH		ND 15.8	ND 15.7	ND 16.2	ND 15.8		

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377717,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377717-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 16:27

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 811393

Sample: 377717-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 16:49

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0252	0.0300	84	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	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] =  $100 * A / B$

\* If results are based on MDL and validated for QC purposes.

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377717,

Project ID:

Lab Batch #: 811393

Sample: 377717-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 17:12

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0298	0.0300	99	80-120	

Lab Batch #: 811393

Sample: 377717-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 17:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0255	0.0300	85	80-120	
4-Bromofluorobenzene	0.0297	0.0300	99	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	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: Southern Union Gas Landfarm

Work Orders : 377717,

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377717-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 21:01

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	105	99.5	106	70-135	
o-Terphenyl	50.9	49.8	102	70-135	

Lab Batch #: 811610

Sample: 377717-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 21:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	88.8	95.2	93	70-135	
o-Terphenyl	43.6	47.6	92	70-135	

Lab Batch #: 811610

Sample: 377717-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 21:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	104	100	104	70-135	
o-Terphenyl	50.1	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] =  $100 * A / B$

^ If results are based on MDL and validated for QC purposes.

**Form 2 - Surrogate Recoveries**

Project Name: Southern Union Gas Landfarm

Work Orders : 377717,

Project ID:

Lab Batch #: 811610

Sample: 377717-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 22:21

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.5	99.7	93	70-135	
o-Terphenyl	44.6	49.9	89	70-135	

Lab Batch #: 811610

Sample: 377715-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

**SURROGATE RECOVERY STUDY**

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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 / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377717

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

Analyst: LATCOR

Date Prepared: 06/21/2010

Date Analyzed: 06/21/2010

Lab Batch ID: 811582

Sample: 811582-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.2	102	10	10.4	104	2	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: Southern Union Gas Landfarm**

**Work Order #: 377717**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm

Work Order #: 377717

Lab Batch #: 811582

Date Analyzed: 06/21/2010

Date Prepared: 06/21/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377693-005 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	ND	53.4	71.6	134	75-125	X

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377717

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377717

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 D

Reporting Units: mg/kg

Project ID:

Analyst: LATCOR

Matrix: Soil

Date Prepared: 06/21/2010

Batch #: 1

### SAMPLE / SAMPLE DUPLICATE RECOVERY

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

Lab Batch #: 811317

Date Analyzed: 06/19/2010

QC- Sample ID: 377692-001 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.85	10.3	5	20	

Lab Batch #: 811318

Date Analyzed: 06/19/2010

QC- Sample ID: 377717-002 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

### 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: Camille Bryant**

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #:**

**Telephone No: (575) 605-7210**

**Fax No: (505) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]



**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377717  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles?</u>	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample Instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377691

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

23-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377691**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377691. 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. 377691 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377691



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 3 G-1	S	Jun-15-10 09:50		377691-001
VZ Cell 3 G-2	S	Jun-15-10 10:00		377691-002
VZ Cell 3 G-3	S	Jun-15-10 10:10		377691-003
VZ Cell 3 G-4	S	Jun-15-10 10:20		377691-004
VZ Cell 3 G-5	S	Jun-15-10 10:30		377691-005



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377691*

*Report Date: 23-JUN-10*

*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811317 Percent Moisture

None

Batch: LBA-811388 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811388, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; QC data not confirmed by re-analysis  
Samples affected are: 377688-001 SD.

Batch: LBA-811407 BTEX by EPA 8021B  
SW8021BM

Batch 811407, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.  
Samples affected are: 377691-001, -002, -003, -005, -004.  
The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

Batch: LBA-811435 Inorganic Anions by EPA 300  
E300MI

Batch 811435, Chloride RPD is outside the QC limit. This is most likely due to sample non-homogeneity.  
Samples affected are: 377691-001, -002, -003, -005, -004.



# Certificate of Analysis Summary 377691

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377691-001	377691-002	377691-003	377691-004	377691-005	
	<i>Field Id:</i>	VZ Cell 3 G-1	VZ Cell 3 G-2	VZ Cell 3 G-3	VZ Cell 3 G-4	VZ Cell 3 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-15-10 09:50	Jun-15-10 10:00	Jun-15-10 10:10	Jun-15-10 10:20	Jun-15-10 10:30	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		ND 4.49	48.0 4.36	ND 4.42	12.0 4.50	ND 4.45	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	
	<i>Analyzed:</i>	Jun-19-10 19:43	Jun-19-10 20:06	Jun-19-10 20:28	Jun-19-10 20:50	Jun-19-10 21:12	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	
Toluene		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	
Ethylbenzene		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	
m,p-Xylenes		ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	ND 0.0021	
o-Xylene		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	
Total Xylenes		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	
Total BTEX		ND 0.0011	ND 0.0010	ND 0.0010	ND 0.0011	ND 0.0010	

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

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Brent Barron, II  
Odessa Laboratory Manager



**Certificate of Analysis Summary 377691**  
**Basin Environmental Consulting, LLC, Lovington, NM**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**

**Contact:** Camille Bryant

**Project Location:** Lea County, NM

**Date Received in Lab:** Thu Jun-17-10 11:20 am


**Report Date:** 23-JUN-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377691-001	377691-002	377691-003	377691-004	377691-005	
	<b>Field Id:</b>	VZ Cell 3 G-1	VZ Cell 3 G-2	VZ Cell 3 G-3	VZ Cell 3 G-4	VZ Cell 3 G-5	
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<b>Sampled:</b>	Jun-15-10 09:50	Jun-15-10 10:00	Jun-15-10 10:10	Jun-15-10 10:20	Jun-15-10 10:30	
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	
	<b>Units/RL:</b>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		6.40 1.00	3.67 1.00	4.94 1.00	6.70 1.00	5.64 1.00	
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	
	<b>Analyzed:</b>	Jun-19-10 19:43	Jun-19-10 20:13	Jun-19-10 20:42	Jun-19-10 21:12	Jun-19-10 21:42	
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 15.9	ND 15.5	ND 15.7	ND 16.0	ND 15.8	
C12-C28 Diesel Range Hydrocarbons		ND 15.9	ND 15.5	ND 15.7	ND 16.0	ND 15.8	
C28-C35 Oil Range Hydrocarbons		ND 15.9	ND 15.5	ND 15.7	ND 16.0	ND 15.8	
Total TPH		ND 15.9	ND 15.5	ND 15.7	ND 16.0	ND 15.8	

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



**Form 2 - Surrogate Recoveries**

Project Name: Southern Union Gas Landfarm

Work Orders : 377691,

Project ID:

Lab Batch #: 811407

Sample: 566202-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 12:39

**SURROGATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 811407

Sample: 566202-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:01

**SURROGATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 811407

Sample: 566202-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:08

**SURROGATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 811407

Sample: 377692-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:14

**SURROGATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 811407

Sample: 377692-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:36

**SURROGATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	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] =  $100 \times A / B$ 

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



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

ork Orders : 377691,

Project ID:

Lab Batch #: 811407

Sample: 377691-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:43

### 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	0.0266	0.0300	89	80-120	

Lab Batch #: 811407

Sample: 377691-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 20:06

### 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	0.0280	0.0300	93	80-120	

Lab Batch #: 811407

Sample: 377691-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 20:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 811407

Sample: 377691-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 20:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0299	0.0300	100	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 811407

Sample: 377691-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 21:12

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	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] =  $100 * A / B$

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

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377691,

Project ID:

Lab Batch #: 811388

Sample: 566174-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 15:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	58.7	49.9	118	70-135	

Lab Batch #: 811388

Sample: 566174-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 16:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.7	110	70-135	
o-Terphenyl	52.5	49.9	105	70-135	

Lab Batch #: 811388

Sample: 566174-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 16:41

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	59.7	50.1	119	70-135	

Lab Batch #: 811388

Sample: 377691-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:43

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	82.0	99.5	82	70-135	
o-Terphenyl	47.2	49.8	95	70-135	

Lab Batch #: 811388

Sample: 377691-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 20:13

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.9	99.5	88	70-135	
o-Terphenyl	49.3	49.8	99	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: Southern Union Gas Landfarm

ork Orders : 377691,

Lab Batch #: 811388

Sample: 377691-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 20:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.0	99.5	90	70-135	
o-Terphenyl	50.9	49.8	102	70-135	

Lab Batch #: 811388

Sample: 377691-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 21:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	89.8	99.8	90	70-135	
o-Terphenyl	52.1	49.9	104	70-135	

Lab Batch #: 811388

Sample: 377691-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 21:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	81.6	99.5	82	70-135	
o-Terphenyl	46.7	49.8	94	70-135	

Lab Batch #: 811388

Sample: 377688-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 03:36

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.6	130	70-135	
o-Terphenyl	62.0	49.8	124	70-135	

Lab Batch #: 811388

Sample: 377688-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 04:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	69.8	50.0	140	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] =  $100 * A / B$

\* If results are based on MDL and validated for QC purposes.



## BS / BSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377691

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811407

Sample: 566202-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B											
	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
Analytes											
Benzene	ND	0.1000	0.0881	88	0.1	0.0828	83	6	70-130	35	
Toluene	ND	0.1000	0.0957	96	0.1	0.0912	91	5	70-130	35	
Ethylbenzene	ND	0.1000	0.0948	95	0.1	0.0895	90	6	71-129	35	
m,p-Xylenes	ND	0.2000	0.2028	101	0.2	0.1930	97	5	70-135	35	
o-Xylene	ND	0.1000	0.1025	103	0.1	0.0957	96	7	71-133	35	

Analyst: LATCOR

Date Prepared: 06/19/2010

Date Analyzed: 06/19/2010

Lab Batch ID: 811435

Sample: 811435-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300											
	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
Analytes											
Chloride	ND	10.0	10.4	104	10	10.3	103	1	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 / BSL Recoveries



**Project Name:** Southern Union Gas Landfarm

**Work Order #:** 377691

**Analyst:** BEV

**Date Prepared:** 06/18/2010

**Project ID:**

**Date Analyzed:** 06/19/2010

**Lab Batch ID:** 811388

**Sample:** 566174-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1080	108	997	987	99	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	910	91	997	839	84	8	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: Southern Union Gas Landfarm

Work Order #: 377691

Lab Batch #: 811435

Date Analyzed: 06/19/2010

QC- Sample ID: 377678-001 S

Reporting Units: mg/kg

Date Prepared: 06/19/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### 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	79.7	1080	1180	102	75-125	

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

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377691

Project ID:

Lab Batch ID: 811407

QC- Sample ID: 377692-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1114	0.0681	61	0.1105	0.0564	51	19	70-130	35	X
Toluene	ND	0.1114	0.0743	67	0.1105	0.0609	55	20	70-130	35	X
Ethylbenzene	ND	0.1114	0.0721	65	0.1105	0.0581	53	22	71-129	35	X
m,p-Xylenes	ND	0.2227	0.1545	69	0.2210	0.1224	55	23	70-135	35	X
o-Xylene	ND	0.1114	0.0780	70	0.1105	0.0599	54	26	71-133	35	X

Lab Batch ID: 811388

QC- Sample ID: 377688-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/20/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1110	1260	114	1110	1350	122	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1110	891	80	1110	1010	91	13	70-135	35	

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

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

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





## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377691

Lab Batch #: 811435

Date Analyzed: 06/19/2010

QC- Sample ID: 377678-001 D

Reporting Units: mg/kg

Date Prepared: 06/19/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	79.7	60.3	28	20	F

Lab Batch #: 811317

Date Analyzed: 06/19/2010

QC- Sample ID: 377692-001 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.85	10.3	5	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

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

**Phone: 432-583-1800**  
**Fax: 432-583-1713**

**Project Manager: Camille Bryant**

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO #:**

**Telephone No: (575) 605-7210**

**Fax No: (505) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377691  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377692

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377692**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377692. 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. 377692 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377692



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 4 G-1	S	Jun-15-10 10:50		377692-001
VZ Cell 4 G-2	S	Jun-15-10 11:00		377692-002
VZ Cell 4 G-3	S	Jun-15-10 11:10		377692-003
VZ Cell 4 G-4	S	Jun-15-10 11:20		377692-004
VZ Cell 4 G-5	S	Jun-15-10 11:30		377692-005



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377692*

*Report Date: 23-JUN-10*

*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811317 Percent Moisture

None

Batch: LBA-811388 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811388, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; QC data not confirmed by re-analysis  
Samples affected are: 377688-001 SD.

Batch: LBA-811407 BTEX by EPA 8021B  
SW8021BM

Batch 811407, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.  
Samples affected are: 377692-002, -003, -001, -005, -004.  
The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

Batch: LBA-811435 Inorganic Anions by EPA 300  
E300MI

Batch 811435, Chloride RPD is outside the QC limit. This is most likely due to sample non-homogeneity.  
Samples affected are: 377692-002, -003, -001, -005, -004.



# Certificate of Analysis Summary 377692

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377692-001	377692-002	377692-003	377692-004	377692-005	
	<i>Field Id:</i>	VZ Cell 4 G-1	VZ Cell 4 G-2	VZ Cell 4 G-3	VZ Cell 4 G-4	VZ Cell 4 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-15-10 10:50	Jun-15-10 11:00	Jun-15-10 11:10	Jun-15-10 11:20	Jun-15-10 11:30	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		ND 9.32	ND 4.34	ND 4.61	ND 4.38	ND 4.34	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	
	<i>Analyzed:</i>	Jun-19-10 14:30	Jun-19-10 14:53	Jun-19-10 15:15	Jun-19-10 15:38	Jun-19-10 16:00	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0011	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	
Toluene		ND 0.0022	ND 0.0021	ND 0.0022	ND 0.0021	ND 0.0020	
Ethylbenzene		ND 0.0011	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	
m,p-Xylenes		ND 0.0022	ND 0.0021	ND 0.0022	ND 0.0021	ND 0.0020	
o-Xylene		ND 0.0011	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	
Total Xylenes		ND 0.0011	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	
Total BTEX		ND 0.0011	ND 0.0010	ND 0.0011	ND 0.0010	ND 0.0010	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		9.85 1.00	3.22 1.00	8.84 1.00	4.10 1.00	3.30 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	
	<i>Analyzed:</i>	Jun-19-10 22:41	Jun-19-10 23:10	Jun-19-10 23:40	Jun-20-10 00:09	Jun-20-10 00:39	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 16.6	ND 15.5	ND 16.4	ND 15.6	ND 15.4	
C12-C28 Diesel Range Hydrocarbons		ND 16.6	ND 15.5	ND 16.4	ND 15.6	ND 15.4	
C28-C35 Oil Range Hydrocarbons		ND 16.6	ND 15.5	ND 16.4	ND 15.6	ND 15.4	
Total TPH		ND 16.6	ND 15.5	ND 16.4	ND 15.6	ND 15.4	

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

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Brent Barron, II  
Odessa Laboratory Manager



## Flagging Criteria

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

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377692,

Project ID:

Lab Batch #: 811407

Sample: 566202-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 12:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 811407

Sample: 566202-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 811407

Sample: 566202-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 811407

Sample: 377692-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 14:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0287	0.0300	96	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 811407

Sample: 377692-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 14:53

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0247	0.0300	82	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] =  $100 * A / B$

\*\*I results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377692,

Project ID:

Lab Batch #: 811407

Sample: 377692-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 15:15

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 811407

Sample: 377692-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 15:38

### SURROGATE RECOVERY STUDY

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

Lab Batch #: 811407

Sample: 377692-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 16:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811407

Sample: 377692-001 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 811407

Sample: 377692-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:36

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	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: Southern Union Gas Landfarm

Work Orders : 377692,

Lab Batch #: 811388

Sample: 566174-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 15:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	58.7	49.9	118	70-135	

Lab Batch #: 811388

Sample: 566174-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 16:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.7	110	70-135	
o-Terphenyl	52.5	49.9	105	70-135	

Lab Batch #: 811388

Sample: 566174-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 16:41

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	59.7	50.1	119	70-135	

Lab Batch #: 811388

Sample: 377692-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 22:41

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.2	99.8	88	70-135	
o-Terphenyl	50.8	49.9	102	70-135	

Lab Batch #: 811388

Sample: 377692-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 23:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.8	92	70-135	
o-Terphenyl	51.0	49.9	102	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] =  $100 * A / B$

† If results are based on MDL and validated for QC purposes.

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377692,

Project ID:

Lab Batch #: 811388

Sample: 377692-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 23:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.0	99.8	93	70-135	
o-Terphenyl	54.5	49.9	109	70-135	

Lab Batch #: 811388

Sample: 377692-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 00:09

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.2	99.8	92	70-135	
o-Terphenyl	52.3	49.9	105	70-135	

Lab Batch #: 811388

Sample: 377692-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 00:39

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.9	99.5	97	70-135	
o-Terphenyl	54.4	49.8	109	70-135	

Lab Batch #: 811388

Sample: 377688-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 03:36

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	129	99.6	130	70-135	
o-Terphenyl	62.0	49.8	124	70-135	

Lab Batch #: 811388

Sample: 377688-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 04:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	69.8	50.0	140	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377692**

**Analyst: ASA**

**Date Prepared: 06/19/2010**

**Project ID:**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811407**

**Sample: 566202-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.0881	88	0.1	0.0828	83	6	70-130	35	
Toluene	ND	0.1000	0.0957	96	0.1	0.0912	91	5	70-130	35	
Ethylbenzene	ND	0.1000	0.0948	95	0.1	0.0895	90	6	71-129	35	
m,p-Xylenes	ND	0.2000	0.2028	101	0.2	0.1930	97	5	70-135	35	
o-Xylene	ND	0.1000	0.1025	103	0.1	0.0957	96	7	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 06/19/2010**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811435**

**Sample: 811435-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

<b>Anions by E300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	ND	10.0	10.4	104	10	10.3	103	1	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: Southern Union Gas Landfarm**

**Work Order #: 377692**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811388**

**Sample: 566174-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1080	108	997	987	99	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	910	91	997	839	84	8	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: Southern Union Gas Landfarm

Work Order #: 377692

Lab Batch #: 811435

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377678-001 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	79.7	1080	1180	102	75-125	

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

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit





## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377692

Project ID:

Lab Batch ID: 811407

QC- Sample ID: 377692-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
Benzene	ND	0.1114	0.0681	61	0.1105	0.0564	51	19	70-130	35	X
Toluene	ND	0.1114	0.0743	67	0.1105	0.0609	55	20	70-130	35	X
Ethylbenzene	ND	0.1114	0.0721	65	0.1105	0.0581	53	22	71-129	35	X
m,p-Xylenes	ND	0.2227	0.1545	69	0.2210	0.1224	55	23	70-135	35	X
o-Xylene	ND	0.1114	0.0780	70	0.1105	0.0599	54	26	71-133	35	X

Lab Batch ID: 811388

QC- Sample ID: 377688-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/20/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1110	1260	114	1110	1350	122	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1110	891	80	1110	1010	91	13	70-135	35	

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

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

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



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377692

Lab Batch #: 811435

Project ID:

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: LATCOR

QC- Sample ID: 377678-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	79.7	60.3	28	20	F

Lab Batch #: 811317

Date Prepared: 06/19/2010

Analyst: JLG

Date Analyzed: 06/19/2010

QC- Sample ID: 377692-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.85	10.3	5	20	

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

**Final 1.000**

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

**Project Manager:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Consulting, LLC

Project #: \_\_\_\_\_

**Company Address:** P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: \_\_\_\_\_

Telephone No: (575) 605-7210

**Fax No:** **(505) 398-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: *[Signature]*

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]



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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377692  
Initials: AL

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles?</u>	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

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

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

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

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

# Analytical Report 377725

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

23-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377725**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377725. 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. 377725 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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



## Sample Cross Reference 377725



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 5 G-1	S	Jun-15-10 11:50		377725-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377725*

*Report Date: 23-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

*None*

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**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-811318 Percent Moisture*

*None*

*Batch: LBA-811393 BTEX by EPA 8021B*

*None*

*Batch: LBA-811582 Inorganic Anions by EPA 300  
E300MI*

*Batch 811582, Chloride recovered above QC limits in the Matrix Spike.*

*Samples affected are: 377725-001.*

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

*Batch: LBA-811610 TPH By SW8015 Mod  
SW8015MOD\_NM*

*Batch 811610, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;  
QC data not confirmed by re-analysis*

*Samples affected are: 377715-001 S, 377725-001. Because the surrogates failed high in the  
sample and the sample was non-detect, the data are reported as analyzed.*

*o-Terphenyl recovered above QC limits . Matrix interferences is suspected; data not confirmed  
by re-analysis*

*Samples affected are: 377725-001.*





# Certificate of Analysis Summary 377725

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377725-001					
	<b>Field Id:</b>	VZ Cell 5 G-1					
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Jun-15-10 11:50					
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-21-10 12:53					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		ND 4.50					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Jun-19-10 10:15					
	<b>Analyzed:</b>	Jun-19-10 23:09					
	<b>Units/RL:</b>	mg/kg RL					
Benzene		ND 0.0011					
Toluene		ND 0.0021					
Ethylbenzene		ND 0.0011					
m,p-Xylenes		ND 0.0021					
o-Xylene		ND 0.0011					
Total Xylenes		ND 0.0011					
Total BTEX		ND 0.0011					
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-19-10 09:18					
	<b>Units/RL:</b>	% RL					
Percent Moisture		6.61 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 14:55					
	<b>Analyzed:</b>	Jun-22-10 09:34					
	<b>Units/RL:</b>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 16.0					
C12-C28 Diesel Range Hydrocarbons		ND 16.0					
C28-C35 Oil Range Hydrocarbons		ND 16.0					
Total TPH		ND 16.0					

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

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377725,

Project ID:

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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] =  $100 * A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377725,

Lab Batch #: 811393

Sample: 377725-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 23:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377725-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 09:34

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	215	99.8	215	70-135	*
o-Terphenyl	104	49.9	208	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: Southern Union Gas Landfarm

Work Order #: 377725

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

Analyst: LATCOR

Date Prepared: 06/21/2010

Date Analyzed: 06/21/2010

Lab Batch ID: 811582

Sample: 811582-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.2	102	10	10.4	104	2	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

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377725,

Project ID:

Lab Batch #: 811610

Sample: 377715-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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] =  $100 \times A / B$

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



## BS / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377725**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377725

Lab Batch #: 811582

Date Analyzed: 06/21/2010

Date Prepared: 06/21/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377693-005 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	ND	53.4	71.6	134	75-125	X

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

BRL - Below Reporting Limit





# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377725

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	70-135	35	

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

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

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



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377725

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 D

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

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

Lab Batch #: 811318

Date Analyzed: 06/19/2010

QC- Sample ID: 377717-002 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

### 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: Camille Bryant**

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

Project Loc: Lea County, NM

**City/State/Zip:** Lovington, NM 88260

**PO #:**

Telephone No: **4575)605-7210**

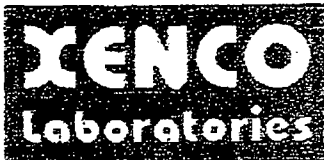
**Fax No: (505) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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:

Basin Env.

Date/Time:

6-17-10 11:20

Lab ID #:

377725

Initials:

AL

**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 3.6 °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 377718

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

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

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377718**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377718. 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. 377718 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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## Sample Cross Reference 377718



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 6 G-1	S	Jun-15-10 12:10		377718-001
VZ Cell 6 G-2	S	Jun-15-10 12:20		377718-002



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377718*

*Report Date: 23-JUN-10*

*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811318 Percent Moisture

None

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811582 Inorganic Anions by EPA 300  
E300MI

Batch 811582, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 377718-001, -002.

The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-811610 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811610, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;

QC data not confirmed by re-analysis

Samples affected are: 377715-001 S.





# Certificate of Analysis Summary 377718

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377718-001	377718-002				
	<b>Field Id:</b>	VZ Cell 6 G-1	VZ Cell 6 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Jun-15-10 12:10	Jun-15-10 12:20				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-21-10 12:53	Jun-21-10 12:53				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		ND 4.48	5.61 4.60				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Jun-19-10 10:15	Jun-19-10 10:15				
	<b>Analyzed:</b>	Jun-19-10 17:56	Jun-19-10 18:19				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		ND 0.0011	ND 0.0011				
Toluene		ND 0.0021	ND 0.0022				
Ethylbenzene		ND 0.0011	ND 0.0011				
m,p-Xylenes		ND 0.0021	ND 0.0022				
o-Xylene		ND 0.0011	ND 0.0011				
Total Xylenes		ND 0.0011	ND 0.0011				
Total BTEX		ND 0.0011	ND 0.0011				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-19-10 09:18	Jun-19-10 09:18				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		6.29 1.00	8.63 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 14:55	Jun-18-10 14:55				
	<b>Analyzed:</b>	Jun-21-10 22:48	Jun-21-10 23:15				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.9	ND 16.5				
C12-C28 Diesel Range Hydrocarbons		ND 15.9	ND 16.5				
C28-C35 Oil Range Hydrocarbons		ND 15.9	ND 16.5				
Total TPH		ND 15.9	ND 16.5				

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

ork Orders : 377718,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377718-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 17:56

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 811393

Sample: 377718-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:19

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0252	0.0300	84	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] =  $100 * A / B$

\* If results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377718,

Project ID:

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	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: Southern Union Gas Landfarm

Work Orders : 377718,

Lab Batch #: 811610

Sample: 377718-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 22:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.7	99.5	92	70-135	
o-Terphenyl	45.0	49.8	90	70-135	

Lab Batch #: 811610

Sample: 377718-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 23:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.5	101	94	70-135	
o-Terphenyl	46.0	50.3	91	70-135	

Lab Batch #: 811610

Sample: 377715-001 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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: Southern Union Gas Landfarm

Work Order #: 377718

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

Analyst: LATCOR

Date Prepared: 06/21/2010

Date Analyzed: 06/21/2010

Lab Batch ID: 811582

Sample: 811582-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.2	102	10	10.4	104	2	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 / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377718

Analyst: BEV

Date Prepared: 06/18/2010

Project ID:

Date Analyzed: 06/21/2010

Lab Batch ID: 811610

Sample: 566324-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377718

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 S

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### 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	ND	53.4	71.6	134	75-125	X

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit





# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377718

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	70-135	35	

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

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

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



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377718

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 D

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

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

Lab Batch #: 811318

Date Analyzed: 06/19/2010

QC- Sample ID: 377717-002 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

**Phone: 432-583-1800**  
**Fax: 432-583-1713**

**Project Manager:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc:** Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #:**

Telephone No: (575) 605-7210

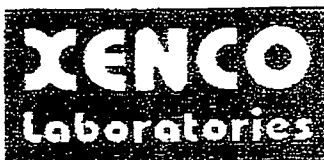
**Fax No: (505) 398-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: 5/1/2010 Page 1 of 1

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

Client: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377718  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.6.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

# Analytical Report 377724

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida (E86240), South Carolina (96031001), Louisiana (04154), Georgia (917)

North Carolina (444), Texas (T104704468-TX), Illinois (002295), Florida (E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377724**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377724. 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. 377724 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

---

**Brent Barron, II**  
Odessa Laboratory Manager

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## Sample Cross Reference 377724



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 7 G-1	S	Jun-15-10 12:30		377724-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377724*

*Report Date: 23-JUN-10*

*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

None

---

**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811318 Percent Moisture

None

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811582 Inorganic Anions by EPA 300  
E300MI

Batch 811582, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 377724-001.

The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-811610 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811610, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;

QC data not confirmed by re-analysis

Samples affected are: 377715-001 S.





# Certificate of Analysis Summary 377724

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 377724-001 <b>Field Id:</b> VZ Cell 7 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Jun-15-10 12:30					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-21-10 12:53 <b>Units/RL:</b> mg/kg RL					
Chloride	5.27 4.40					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b> Jun-19-10 10:15 <b>Analyzed:</b> Jun-19-10 22:47 <b>Units/RL:</b> mg/kg RL					
Benzene	ND 0.0010					
Toluene	ND 0.0021					
Ethylbenzene	ND 0.0010					
m,p-Xylenes	ND 0.0021					
o-Xylene	ND 0.0010					
Total Xylenes	ND 0.0010					
Total BTEX	ND 0.0010					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-19-10 09:18 <b>Units/RL:</b> % RL					
Percent Moisture	4.60 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Jun-18-10 14:55 <b>Analyzed:</b> Jun-22-10 09:07 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 15.7					
C12-C28 Diesel Range Hydrocarbons	ND 15.7					
C28-C35 Oil Range Hydrocarbons	ND 15.7					
Total TPH	ND 15.7					

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

ork Orders : 377724,

Project ID:

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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] =  $100 \times A / B$

<sup>1</sup> results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377724,

Project ID:

Lab Batch #: 811393

Sample: 377724-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 22:47

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377724-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 09:07

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	48.4	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] =  $100 \times A / B$

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



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377724,

Lab Batch #: 811610

Sample: 377715-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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: Southern Union Gas Landfarm**

**Work Order #: 377724**

**Analyst: ASA**

**Date Prepared: 06/19/2010**

**Project ID:**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811393**

**Sample: 566168-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

BTEX by EPA 8021B		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
Analytes												
Benzene		ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene		ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene		ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes		ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene		ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 06/21/2010**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811582**

**Sample: 811582-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300		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
Analytes												
Chloride		ND	10.0	10.2	102	10	10.4	104	2	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377724**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377724

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 S

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### 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	ND	53.4	71.6	134	75-125	X

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit





# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377724

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377724

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 D

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

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

Lab Batch #: 811318

Date Analyzed: 06/19/2010

QC- Sample ID: 377717-002 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

### 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:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO #:**

Telephone No: (575)605-7210

**Fax No: (505) 398-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

(lab use only)

ORDER #:

377724

LAB # (lab use only)

FIELD CODE

VZ Cell 7 G-1

Beginning Depth

Ending Depth

Date Sampled

Time Sampled

Field Filtered

Total # of Containers

1

X

HNO<sub>3</sub>

HCl

H<sub>2</sub>SO<sub>4</sub>

NaOH

Na<sub>2</sub>S<sub>2</sub>O<sub>8</sub>

None

Other (Specify)

BW - Drinking Water SL - Sludge

GW - Groundwater S - Soil/soil

NP - Non-Potable

Specify Other

SOIL

X

TPH: 418.1

80159

80159

TPH: TX 1005

TX 1006

Cations (Ca, Mg, Na, K)

Anions (Cl, SO<sub>4</sub>, Alkalinity)

SAR / ESP / CEC

Metals: As Ag Ba Cd Cr Pb Hg Se

Volatiles

Semivolatiles

BITEX 80218/5030

BITEX 8260

RCI

NORM

Chlorides 3300

Preservation & # of Containers

Matrix

Special Instructions:

Relinquished by:

6/17

700

Received by:

6/17

700

Relinquished by:

6/17

1120

Received by:

6/17

11:20

Relinquished by:

6/17

11:20

Received by ELOT:

6/17

11:20

Laboratory Comments:

Sample Containers Free of VOCs

VOCs Free of Headspace?

Labels on container(s)

Custody seals on container(s)

Custody seals on vial(s)

Sample Hand Delivered

by Sampler/Client Rep.?

by Courier?

UPS

DHL

FedEx

Lone Star

Temperature Upon Receipt:

3.6

°C

**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: Basin Env.  
Date/Time: 6.17.10 11.20  
Lab ID #: 377724  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377720

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377720**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377720. 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. 377720 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377720



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
VZ Cell 8 G-1	S	Jun-15-10 12:50		377720-001
VZ Cell 8 G-2	S	Jun-15-10 13:00		377720-002



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 377720*

*Report Date: 23-JUN-10*  
*Date Received: 06/17/2010*

---

**Sample receipt non conformances and Comments:**

*None*

---

**Sample receipt Non Conformances and Comments per Sample:**

*None*

**Analytical Non Conformances and Comments:**

*Batch: LBA-811318 Percent Moisture*

*None*

*Batch: LBA-811393 BTEX by EPA 8021B*

*None*

*Batch: LBA-811582 Inorganic Anions by EPA 300*

*E300MI*

*Batch 811582, Chloride recovered above QC limits in the Matrix Spike.*

*Samples affected are: 377720-001, -002.*

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

*Batch: LBA-811610 TPH By SW8015 Mod*

*SW8015MOD\_NM*

*Batch 811610, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;*

*QC data not confirmed by re-analysis*

*Samples affected are: 377715-001 S.*





# Certificate of Analysis Summary 377720

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377720-001	377720-002				
	<b>Field Id:</b>	VZ Cell 8 G-1	VZ Cell 8 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Jun-15-10 12:50	Jun-15-10 13:00				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-21-10 12:53	Jun-21-10 12:53				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		49.9 4.35	33.4 4.45				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Jun-19-10 10:15	Jun-19-10 10:15				
	<b>Analyzed:</b>	Jun-19-10 20:56	Jun-19-10 21:18				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
		ND 0.0010	ND 0.0010				
		ND 0.0021	ND 0.0021				
Benzene		ND 0.0010	ND 0.0010				
Toluene		ND 0.0021	ND 0.0021				
Ethylbenzene		ND 0.0010	ND 0.0010				
m,p-Xylenes		ND 0.0021	ND 0.0021				
o-Xylene		ND 0.0010	ND 0.0010				
Total Xylenes		ND 0.0010	ND 0.0010				
Total BTEX		ND 0.0010	ND 0.0010				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-19-10 09:18	Jun-19-10 09:18				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		3.51 1.00	5.56 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 14:55	Jun-18-10 14:55				
	<b>Analyzed:</b>	Jun-22-10 01:04	Jun-22-10 01:32				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.6	ND 15.8				
C12-C28 Diesel Range Hydrocarbons		ND 15.6	ND 15.8				
C28-C35 Oil Range Hydrocarbons		ND 15.6	ND 15.8				
Total TPH		ND 15.6	ND 15.8				

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd, Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377720,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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: Southern Union Gas Landfarm****Work Orders : 377720,****Project ID:****Lab Batch #: 811393****Sample: 377720-001 / SMP****Batch: 1 Matrix: Soil****Units: mg/kg****Date Analyzed: 06/19/10 20:56****SURROGATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

**Lab Batch #: 811393****Sample: 377720-002 / SMP****Batch: 1 Matrix: Soil****Units: mg/kg****Date Analyzed: 06/19/10 21:18****SURROGATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

**Lab Batch #: 811610****Sample: 566324-1-BKS / BKS****Batch: 1 Matrix: Solid****Units: mg/kg****Date Analyzed: 06/21/10 17:52****SURROGATE RECOVERY STUDY**

<b>TPH By SW8015 Mod</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

**Lab Batch #: 811610****Sample: 566324-1-BSD / BSD****Batch: 1 Matrix: Solid****Units: mg/kg****Date Analyzed: 06/21/10 18:19****SURROGATE RECOVERY STUDY**

<b>TPH By SW8015 Mod</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

**Lab Batch #: 811610****Sample: 566324-1-BLK / BLK****Batch: 1 Matrix: Solid****Units: mg/kg****Date Analyzed: 06/21/10 18:46****SURROGATE RECOVERY STUDY**

<b>TPH By SW8015 Mod</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	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: Southern Union Gas Landfarm

Work Orders : 377720,

Lab Batch #: 811610

Sample: 377720-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 01:04

### 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	51.0	50.1	102	70-135	

Lab Batch #: 811610

Sample: 377720-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 01:32

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	99.6	103	70-135	
o-Terphenyl	49.1	49.8	99	70-135	

Lab Batch #: 811610

Sample: 377715-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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] =  $100 * A / B$

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



## BS / BSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377720

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B											
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

Analyst: LATCOR

Date Prepared: 06/21/2010

Date Analyzed: 06/21/2010

Lab Batch ID: 811582

Sample: 811582-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300											
	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.2	102	10	10.4	104	2	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377720**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377720

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 S

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### 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	ND	53.4	71.6	134	75-125	X

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

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit





# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377720

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	70-135	35	

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

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

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



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377720

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 D

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

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

Lab Batch #: 811318

Date Analyzed: 06/19/2010

QC- Sample ID: 377717-002 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

**Phone: 432-583-1800**  
**Fax: 432-583-1713**

**Project Manager:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Consulting, LLC

**Project #:**

**Company Address:** P.O. Box 381

**Project Loc:** Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #:**

Telephone No: (675) 605-7210

**Fax No: (505) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

**e-mail: cjbryant@basin-consulting.com**

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377720  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

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

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

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

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

# Analytical Report 377693

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377693**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377693. 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. 377693 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

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

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377693



Basin Environmental Consulting, LLC, Lovington, NM  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 9 G-1	S	Jun-15-10 13:20		377693-001
VZ Cell 9 G-2	S	Jun-15-10 13:30		377693-002
VZ Cell 9 G-3	S	Jun-15-10 13:40		377693-003
VZ Cell 9 G-4	S	Jun-15-10 13:50		377693-004
VZ Cell 9 G-5	S	Jun-15-10 14:00		377693-005



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 377693*

*Report Date: 23-JUN-10*

*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811317 Percent Moisture

None

Batch: LBA-811388 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811388, o-Terphenyl recovered above QC limits . Matrix interferences is suspected; QC data not confirmed by re-analysis

Samples affected are: 377688-001 SD.

Batch: LBA-811407 BTEX by EPA 8021B  
SW8021BM

Batch 811407, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 377693-004, -001, -002, -003, -005.

The Laboratory Control Sample for Toluene, m,p-Xylenes , Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

Batch: LBA-811435 Inorganic Anions by EPA 300  
E300MI

Batch 811435, Chloride RPD is outside the QC limit. This is most likely due to sample non-homogeneity.

Samples affected are: 377693-004, -001, -002, -003.

Batch: LBA-811582 Inorganic Anions by EPA 300  
E300MI

Batch 811582, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 377693-005.

The Laboratory Control Sample for Chloride is within laboratory Control Limits





# Certificate of Analysis Summary 377693

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377693-001	377693-002	377693-003	377693-004	377693-005	
	<i>Field Id:</i>	VZ Cell 9 G-1	VZ Cell 9 G-2	VZ Cell 9 G-3	VZ Cell 9 G-4	VZ Cell 9 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Jun-15-10 13:20	Jun-15-10 13:30	Jun-15-10 13:40	Jun-15-10 13:50	Jun-15-10 14:00	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	Jun-19-10 06:27	Jun-21-10 12:53	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		ND 4.89	ND 4.81	ND 4.75	ND 4.33	ND 4.49	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	Jun-19-10 11:45	
	<i>Analyzed:</i>	Jun-19-10 16:23	Jun-19-10 16:45	Jun-19-10 17:07	Jun-19-10 17:29	Jun-19-10 17:52	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
Toluene		ND 0.0023	ND 0.0023	ND 0.0023	ND 0.0021	ND 0.0021	
Ethylbenzene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
m,p-Xylenes		ND 0.0023	ND 0.0023	ND 0.0023	ND 0.0021	ND 0.0021	
o-Xylene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
Total Xylenes		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
Total BTEX		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		14.1 1.00	12.7 1.00	11.6 1.00	2.93 1.00	6.43 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	Jun-18-10 15:15	
	<i>Analyzed:</i>	Jun-20-10 01:09	Jun-20-10 01:39	Jun-20-10 02:08	Jun-20-10 02:38	Jun-20-10 03:07	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 17.4	ND 17.1	ND 16.9	ND 15.4	ND 16.0	
C12-C28 Diesel Range Hydrocarbons		ND 17.4	ND 17.1	ND 16.9	ND 15.4	ND 16.0	
C28-C35 Oil Range Hydrocarbons		ND 17.4	ND 17.1	ND 16.9	ND 15.4	ND 16.0	
Total TPH		ND 17.4	ND 17.1	ND 16.9	ND 15.4	ND 16.0	

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377693,

Project ID:

Lab Batch #: 811407

Sample: 566202-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 12:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 811407

Sample: 566202-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 811407

Sample: 566202-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 811407

Sample: 377693-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 16:23

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 811407

Sample: 377693-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 16:45

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0274	0.0300	91	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] =  $100 * A / B$

^ If results are based on MDL and validated for QC purposes.

# Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377693,

Project ID:

Lab Batch #: 811407

Sample: 377693-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 17:07

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 811407

Sample: 377693-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 17:29

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0283	0.0300	94	80-120	
4-Bromofluorobenzene	0.0275	0.0300	92	80-120	

Lab Batch #: 811407

Sample: 377693-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 17:52

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 811407

Sample: 377692-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:14

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 811407

Sample: 377692-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:36

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	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: Southern Union Gas Landfarm

Work Orders : 377693,

Lab Batch #: 811388

Sample: 566174-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 15:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.8	124	70-135	
o-Terphenyl	58.7	49.9	118	70-135	

Lab Batch #: 811388

Sample: 566174-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 16:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.7	110	70-135	
o-Terphenyl	52.5	49.9	105	70-135	

Lab Batch #: 811388

Sample: 566174-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 16:41

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	59.7	50.1	119	70-135	

Lab Batch #: 811388

Sample: 377693-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 01:09

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.6	99.5	98	70-135	
o-Terphenyl	56.2	49.8	113	70-135	

Lab Batch #: 811388

Sample: 377693-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 01:39

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	102	99.5	103	70-135	
o-Terphenyl	58.9	49.8	118	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: Southern Union Gas Landfarm

Work Orders : 377693,

Project ID:

Lab Batch #: 811388

Sample: 377693-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 02:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	99.5	115	70-135	
o-Terphenyl	65.9	49.8	132	70-135	

Lab Batch #: 811388

Sample: 377693-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 02:38

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	99.5	117	70-135	
o-Terphenyl	66.1	49.8	133	70-135	

Lab Batch #: 811388

Sample: 377693-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 03:07

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.5	114	70-135	
o-Terphenyl	64.6	49.8	130	70-135	

Lab Batch #: 811388

Sample: 377688-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 03:36

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.6	130	70-135	
o-Terphenyl	62.0	49.8	124	70-135	

Lab Batch #: 811388

Sample: 377688-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/20/10 04:06

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	130	100	130	70-135	
o-Terphenyl	69.8	50.0	140	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] =  $100 \times A / B$

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



## BS / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377693

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811407

Sample: 566202-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0881	88	0.1	0.0828	83	6	70-130	35	
Toluene	ND	0.1000	0.0957	96	0.1	0.0912	91	5	70-130	35	
Ethylbenzene	ND	0.1000	0.0948	95	0.1	0.0895	90	6	71-129	35	
m,p-Xylenes	ND	0.2000	0.2028	101	0.2	0.1930	97	5	70-135	35	
o-Xylene	ND	0.1000	0.1025	103	0.1	0.0957	96	7	71-133	35	

Analyst: LATCOR

Date Prepared: 06/19/2010

Date Analyzed: 06/19/2010

Lab Batch ID: 811435

Sample: 811435-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.4	104	10	10.3	103	1	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: Southern Union Gas Landfarm**

**Work Order #: 377693**

**Analyst: LATCOR**

**Date Prepared: 06/21/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811582**

**Sample: 811582-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.2	102	10	10.4	104	2	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811388**

**Sample: 566174-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	998	1080	108	997	987	99	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	910	91	997	839	84	8	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: Southern Union Gas Landfarm

Work Order #: 377693

Lab Batch #: 811435

Date Analyzed: 06/19/2010

QC- Sample ID: 377678-001 S

Reporting Units: mg/kg

Project ID:

Analyst: LATCOR

Date Prepared: 06/19/2010

Batch #: 1

Matrix: Soil

## MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	79.7	1080	1180	102	75-125	

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 S

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

## MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	53.4	71.6	134	75-125	X

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

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377693

Project ID:

Lab Batch ID: 811407

QC- Sample ID: 377692-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
Benzene	ND	0.1114	0.0681	61	0.1105	0.0564	51	19	70-130	35	X
Toluene	ND	0.1114	0.0743	67	0.1105	0.0609	55	20	70-130	35	X
Ethylbenzene	ND	0.1114	0.0721	65	0.1105	0.0581	53	22	71-129	35	X
m,p-Xylenes	ND	0.2227	0.1545	69	0.2210	0.1224	55	23	70-135	35	X
o-Xylene	ND	0.1114	0.0780	70	0.1105	0.0599	54	26	71-133	35	X

Lab Batch ID: 811388

QC- Sample ID: 377688-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/20/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1110	1260	114	1110	1350	122	7	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1110	891	80	1110	1010	91	13	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377693

Lab Batch #: 811435

Date Analyzed: 06/19/2010

QC- Sample ID: 377678-001 D

Reporting Units: mg/kg

Date Prepared: 06/19/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	79.7	60.3	28	20	F

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 D

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Analyst: LATCOR

Matrix: Soil

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

Lab Batch #: 811317

Date Analyzed: 06/19/2010

QC- Sample ID: 377692-001 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.85	10.3	5	20	

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

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

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

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

**Project Manager: Camille Bryant**

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

**PO #:**

Telephone No: ~~4575~~605-7210.

**Fax No: (505) 398-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature**

**e-mail: [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)**

[illegible]



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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377693  
Initials: AL

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

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

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

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

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

# Analytical Report 377715

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



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

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

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

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

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

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

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377715**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377715. 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. 377715 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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



## Sample Cross Reference 377715



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 10 G-1	S	Jun-15-10 14:20		377715-001
VZ Cell 10 G-2	S	Jun-15-10 14:30		377715-002
VZ Cell 10 G-3	S	Jun-15-10 14:40		377715-003
VZ Cell 10 G-4	S	Jun-15-10 14:50		377715-004





## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 377715*

*Report Date: 23-JUN-10*  
*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811317 Percent Moisture

None

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811407 BTEX by EPA 8021B  
SW8021BM

Batch 811407, Benzene, Ethylbenzene, Toluene, m,p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate.

Samples affected are: 377715-001.

The Laboratory Control Sample for Toluene, m,p-Xylenes, Benzene, Ethylbenzene, o-Xylene is within laboratory Control Limits

Batch: LBA-811582 Inorganic Anions by EPA 300  
E300MI

Batch 811582, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 377715-003, -001, -002, -004.

The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-811610 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811610, 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected;

QC data not confirmed by re-analysis

Samples affected are: 377715-001 S.



# Certificate of Analy Summary 377715

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377715-001	377715-002	377715-003	377715-004		
	<i>Field Id:</i>	VZ Cell 10 G-1	VZ Cell 10 G-2	VZ Cell 10 G-3	VZ Cell 10 G-4		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Jun-15-10 14:20	Jun-15-10 14:30	Jun-15-10 14:40	Jun-15-10 14:50		
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-21-10 12:53	Jun-21-10 12:53	Jun-21-10 12:53	Jun-21-10 12:53		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		54.7 9.12	43.3 9.21	20.6 4.40	5.73 4.63		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Jun-19-10 11:45	Jun-19-10 10:15	Jun-19-10 10:15	Jun-19-10 10:15		
	<i>Analyzed:</i>	Jun-19-10 21:35	Jun-19-10 15:19	Jun-19-10 15:41	Jun-19-10 16:04		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011		
Toluene		ND 0.0022	ND 0.0022	ND 0.0021	ND 0.0022		
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011		
m,p-Xylenes		ND 0.0022	ND 0.0022	ND 0.0021	ND 0.0022		
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011		
Total Xylenes		ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011		
Total BTEX		ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011		
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18		
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL		
Percent Moisture		7.87 1.00	8.81 1.00	4.47 1.00	9.30 1.00		
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 14:55	Jun-18-10 14:55	Jun-18-10 14:55	Jun-18-10 14:55		
	<i>Analyzed:</i>	Jun-21-10 19:13	Jun-21-10 19:40	Jun-21-10 20:08	Jun-21-10 20:34		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 16.2	ND 16.4	ND 15.7	ND 16.5		
C12-C28 Diesel Range Hydrocarbons		ND 16.2	ND 16.4	ND 15.7	ND 16.5		
C28-C35 Oil Range Hydrocarbons		ND 16.2	ND 16.4	ND 15.7	ND 16.5		
Total TPH		ND 16.2	ND 16.4	ND 15.7	ND 16.5		

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

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

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

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377715,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377715-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 15:19

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0254	0.0300	85	80-120	
4-Bromofluorobenzene	0.0294	0.0300	98	80-120	

Lab Batch #: 811393

Sample: 377715-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 15:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	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: Southern Union Gas Landfarm

Work Orders : 377715,

Project ID:

Lab Batch #: 811393

Sample: 377715-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 16:04

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0249	0.0300	83	80-120	
4-Bromofluorobenzene	0.0285	0.0300	95	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 811407

Sample: 566202-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 12:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 811407

Sample: 566202-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	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: Southern Union Gas Landfarm

Work Orders : 377715,

Project ID:

Lab Batch #: 811407

Sample: 566202-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0243	0.0300	81	80-120	

Lab Batch #: 811407

Sample: 377692-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0310	0.0300	103	80-120	

Lab Batch #: 811407

Sample: 377692-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:36

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

Lab Batch #: 811407

Sample: 377715-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 21:35

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0264	0.0300	88	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	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: Southern Union Gas Landfarm

Work Orders : 377715,

Project ID:

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377715-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 19:13

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	93.4	99.5	94	70-135	
o-Terphenyl	46.1	49.8	93	70-135	

Lab Batch #: 811610

Sample: 377715-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 19:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	96.8	99.7	97	70-135	
o-Terphenyl	47.2	49.9	95	70-135	

Lab Batch #: 811610

Sample: 377715-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 20:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	88.9	100	89	70-135	
o-Terphenyl	43.9	50.2	87	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: Southern Union Gas Landfarm

Work Orders : 377715,

Project ID:

Lab Batch #: 811610

Sample: 377715-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/21/10 20:34

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.8	99.9	98	70-135	
o-Terphenyl	47.4	50.0	95	70-135	

Lab Batch #: 811610

Sample: 377715-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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: Southern Union Gas Landfarm

Work Order #: 377715

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

Analyst: ASA

Date Prepared: 06/19/2010

Date Analyzed: 06/19/2010

Lab Batch ID: 811407

Sample: 566202-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0881	88	0.1	0.0828	83	6	70-130	35	
Toluene	ND	0.1000	0.0957	96	0.1	0.0912	91	5	70-130	35	
Ethylbenzene	ND	0.1000	0.0948	95	0.1	0.0895	90	6	71-129	35	
m,p-Xylenes	ND	0.2000	0.2028	101	0.2	0.1930	97	5	70-135	35	
o-Xylene	ND	0.1000	0.1025	103	0.1	0.0957	96	7	71-133	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



# BS / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377715**

**Analyst: LATCOR**

**Date Prepared: 06/21/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811582**

**Sample: 811582-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

Anions by E300	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
<b>Analytes</b>											
Chloride	ND	10.0	10.2	102	10	10.4	104	2	75-125	20	

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

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

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377715

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 S

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

### 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	ND	53.4	71.6	134	75-125	X

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - N MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377715

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811407

QC- Sample ID: 377692-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1114	0.0681	61	0.1105	0.0564	51	19	70-130	35	X
Toluene	ND	0.1114	0.0743	67	0.1105	0.0609	55	20	70-130	35	X
Ethylbenzene	ND	0.1114	0.0721	65	0.1105	0.0581	53	22	71-129	35	X
m,p-Xylenes	ND	0.2227	0.1545	69	0.2210	0.1224	55	23	70-135	35	X
o-Xylene	ND	0.1114	0.0780	70	0.1105	0.0599	54	26	71-133	35	X

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377715

Project ID:

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377715

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 D

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 811317

Date Analyzed: 06/19/2010

QC- Sample ID: 377692-001 D

Reporting Units: %

Date Prepared: 06/19/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.85	10.3	5	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
All Results are based on MDL and validated for QC purposes.  
BRL - Below Reporting Limit

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

**12600 West I-20 East  
Odessa, Texas 79765**

**Phone: 432-583-1800**  
**Fax: 432-583-1713**

**Project Manager:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Consulting, LLC

Project #:

Company Address: P.O. Box 381

Project Log: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (575)605-7210

**Fax No: (505) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bayart

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]**Special Instructions:**

Laboratory Comments:

Relinquished by: <i>Amelle Bayard</i>	Date <i>6/17</i>	Time <i>700</i>	Received by: <i>5062 lower</i>	Date <i>6/17</i>	Time <i>700</i>	<input checked="" type="checkbox"/> <del>Sample for DNA</del> <input checked="" type="checkbox"/> <del>Custody seats on container(s)</del> <input checked="" type="checkbox"/> <del>Sample for DNA</del>
Relinquished by: <i>5062 lower</i>	Date <i>6/17</i>	Time <i>1120</i>	Received by:	Date	Time	<input checked="" type="checkbox"/> <del>Sample Hand Delivered</del> <input checked="" type="checkbox"/> <del>by Sampler/Cient Rep. ?</del> <input checked="" type="checkbox"/> <del>by Courier?</del> <input type="checkbox"/> UPS <input type="checkbox"/> DHL <input type="checkbox"/> FedEx <input type="checkbox"/> Lone Star
Relinquished by:	Date	Time	Received by ELOT: <i>Andrew Lam</i>	Date <i>6-17-10</i>	Time <i>11:20</i>	<input checked="" type="checkbox"/> <del>4oz glass</del> Temperature Upon Receipt: <i>3.6</i> °C



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: Basin Env.  
Date/Time: 6.17.10 11.20  
Lab ID #: 377715  
Initials: AL

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



# Analytical Report 377719

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

23-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377719**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377719. 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. 377719 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377719



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 11 G-1	S	Jun-15-10 15:10		377719-001
VZ Cell 11 G-2	S	Jun-15-10 15:20		377719-002



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 377719*

*Report Date: 23-JUN-10*  
*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811318 Percent Moisture

None

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811582 Inorganic Anions by EPA 300  
E300MI

Batch 811582, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 377719-001, -002.

The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-811610 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811610, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;

QC data not confirmed by re-analysis

Samples affected are: 377715-001 S.



# Certificate of Analysis Summary 377719

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	377719-001	377719-002				
	<i>Field Id:</i>	VZ Cell 11 G-1	VZ Cell 11 G-2				
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL				
	<i>Sampled:</i>	Jun-15-10 15:10	Jun-15-10 15:20				
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-21-10 12:53	Jun-21-10 12:53				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Chloride		8.67 4.47	15.6 4.45				
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Jun-19-10 10:15	Jun-19-10 10:15				
	<i>Analyzed:</i>	Jun-19-10 18:41	Jun-19-10 20:33				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
Benzene		ND 0.0011	ND 0.0011				
Toluene		ND 0.0021	ND 0.0021				
Ethylbenzene		ND 0.0011	ND 0.0011				
m,p-Xylenes		ND 0.0021	ND 0.0021				
o-Xylene		ND 0.0011	ND 0.0011				
Total Xylenes		ND 0.0011	ND 0.0011				
Total BTEX		ND 0.0011	ND 0.0011				
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Jun-19-10 09:18	Jun-19-10 09:18				
	<i>Units/RL:</i>	% RL	% RL				
Percent Moisture		6.08 1.00	5.70 1.00				
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Jun-18-10 14:55	Jun-18-10 14:55				
	<i>Analyzed:</i>	Jun-22-10 00:10	Jun-22-10 00:37				
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 16.0	ND 15.8				
C12-C28 Diesel Range Hydrocarbons		ND 16.0	ND 15.8				
C28-C35 Oil Range Hydrocarbons		ND 16.0	ND 15.8				
Total TPH		ND 16.0	ND 15.8				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377719,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 18:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0250	0.0300	83	80-120	
4-Bromofluorobenzene	0.0286	0.0300	95	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	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: Southern Union Gas Landfarm

Work Orders : 377719,

Project ID:

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 811393

Sample: 377719-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 20:33

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

## SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	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: Southern Union Gas Landfarm

Work Orders : 377719,

Lab Batch #: 811610

Sample: 377719-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 00:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	107	100	107	70-135	
o-Terphenyl	50.8	50.1	101	70-135	

Lab Batch #: 811610

Sample: 377719-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 00:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	105	99.5	106	70-135	
o-Terphenyl	50.2	49.8	101	70-135	

Lab Batch #: 811610

Sample: 377715-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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: Southern Union Gas Landfarm

Work Order #: 377719

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

Analyst: LATCOR

Date Prepared: 06/21/2010

Date Analyzed: 06/21/2010

Lab Batch ID: 811582

Sample: 811582-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.2	102	10	10.4	104	2	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377719**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377719

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 S

Reporting Units: mg/kg

Date Prepared: 06/21/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	53.4	71.6	134	75-125	X

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - N MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377719

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot [(C-F)/(C+F)]$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit

# Sample Duplicate Recovery

**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377719**

**Lab Batch #: 811582**

**Date Analyzed: 06/21/2010**

**QC- Sample ID: 377693-005 D**

**Reporting Units: mg/kg**

**Date Prepared: 06/21/2010**

**Batch #: 1**

**Project ID:**

**Analyst: LATCOR**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 811318**

**Date Analyzed: 06/19/2010**

**QC- Sample ID: 377717-002 D**

**Reporting Units: %**

**Date Prepared: 06/19/2010**

**Batch #: 1**

**Analyst: JLG**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12800 West I-20 East  
Odessa, Texas 79785

Phone: 432-563-1800  
Fax: 432-563-1713

Project Manager: Camille Bryant

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Consulting, LLC

Project #:

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (875) 605-7210

Fax No: (505) 396-1428

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cibryant@basin-consulting.com

(lab use only)		Analyze For:	
ORDER #:	377719	TCLP:	TOTAL:
LAB # (lab use only)		TX 1005	TX 1006
FIELD CODE		Ca, Mg, Na, K	Al, Fe, Mn, Ni, Pb, Se
Beginning Depth		As, Ba, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, V, Zn	Ag, Al, As, Ba, Cd, Cr, Cu, Hg, Mo, Ni, Pb, Se, V, Zn
Ending Depth		Bi, Br, B, C, Cl, Co, F, I, K, Li, Na, N, O, P, S, Si, Sn, Ti, Tl, U, W, Y, Zr	Ac, Ar, At, B, Be, Bi, Br, B, C, Cl, Co, F, I, K, Li, Na, N, O, P, S, Si, Sn, Ti, Tl, U, W, Y, Zr
Date Sampled	6/15/10	1510	1520
Time Sampled			
Field Filtered			
Total # of Containers	1	X	X
Ice			
HNO <sub>3</sub>			
HCl			
H <sub>2</sub> SO <sub>4</sub>			
NaOH			
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>			
None			
Other (Specify)			
DW - Drinking Water SL - Sludge			
GW - Groundwater S - Soil/Sol			
NP - Non-Potable Specify DTH			
TPH: 418.1			
TPH: TX 1005			
Callions (Ca, Mg, Na, K)			
Anions (Cl, SO <sub>4</sub> , Alkalinity)			
SAR / ESP / CEC			
Metals: As Ag Ba Cd Cr Pb Hg Se			
Volatiles			
Semivolatiles			
RTX 6021B/6033 or B1 EX 6260			
RCI			
NORM			
Chlorides 2300			
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs			
Standard TAT 4 DAY			

Special Instructions:				Laboratory Comments:			
Relinquished by:	Date	Time	Received by:	Date	Time	VOCs Free of Headspace? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Camille Bryant	6/17	700	3062 Lowry	6/17	710	Custody seals on container(s) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Relinquished by:	Date	Time	Received by:	Date	Time	Sample Hand Delivered by Sampler/Client Rep. ? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
3062 Lowry	6/17	1120				by Courier? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Relinquished by:	Date	Time	Received by ELOT:	Date	Time	Temperature Upon Receipt: 3.6 °C	
			Andrea Sam	6-17-10	11:20		

**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: 8/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**

Client: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377719  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.6.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis



# Analytical Report 377722

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

23-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida (E86240), South Carolina (96031001), Louisiana (04154), Georgia (917)  
North Carolina (444), Texas (T104704468-TX), Illinois (002295), Florida (E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377722**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377722. 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. 377722 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 377722



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 12 G-1	S	Jun-15-10 15:40		377722-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 377722*

*Report Date: 23-JUN-10*  
*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811318 Percent Moisture

None

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811582 Inorganic Anions by EPA 300

E300MI

Batch 811582, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 377722-001.

The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-811610 TPH By SW8015 Mod

SW8015MOD\_NM

Batch 811610, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;

QC data not confirmed by re-analysis

Samples affected are: 377715-001 S.



# Certificate of Analysis Summary 377722

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377722-001				
	<b>Field Id:</b>	VZ Cell 12 G-1				
	<b>Depth:</b>					
	<b>Matrix:</b>	SOIL				
	<b>Sampled:</b>	Jun-15-10 15:40				
<b>Anions by E300</b>	<b>Extracted:</b>					
	<b>Analyzed:</b>	Jun-21-10 12:53				
	<b>Units/RL:</b>	mg/kg RL				
Chloride		12.4 4.59				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Jun-19-10 10:15				
	<b>Analyzed:</b>	Jun-19-10 22:02				
	<b>Units/RL:</b>	mg/kg RL				
Benzene		ND 0.0011				
Toluene		ND 0.0022				
Ethylbenzene		ND 0.0011				
m,p-Xylenes		ND 0.0022				
o-Xylene		ND 0.0011				
Total Xylenes		ND 0.0011				
Total BTEX		ND 0.0011				
<b>Percent Moisture</b>	<b>Extracted:</b>					
	<b>Analyzed:</b>	Jun-19-10 09:18				
	<b>Units/RL:</b>	% RL				
Percent Moisture		8.40 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 14:55				
	<b>Analyzed:</b>	Jun-22-10 08:12				
	<b>Units/RL:</b>	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 16.4				
C12-C28 Diesel Range Hydrocarbons		ND 16.4				
C28-C35 Oil Range Hydrocarbons		ND 16.4				
Total TPH		ND 16.4				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377722,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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: Southern Union Gas Landfarm

Work Orders : 377722,

Project ID:

Lab Batch #: 811393

Sample: 377722-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 22:02

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0287	0.0300	96	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377722-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 08:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	55.3	50.0	111	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.





## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377722,

Lab Batch #: 811610

Sample: 377715-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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:** Southern Union Gas Landfarm

**Work Order #:** 377722

**Analyst:** ASA

**Date Prepared:** 06/19/2010

**Project ID:**

**Date Analyzed:** 06/19/2010

**Lab Batch ID:** 811393

**Sample:** 566168-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		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
Analytes												
Benzene		ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene		ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene		ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes		ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene		ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

**Analyst:** LATCOR

**Date Prepared:** 06/21/2010

**Date Analyzed:** 06/21/2010

**Lab Batch ID:** 811582

**Sample:** 811582-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300		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
Analytes												
Chloride		ND	10.0	10.2	102	10	10.4	104	2	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377722**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm

Work Order #: 377722

Lab Batch #: 811582

Date Analyzed: 06/21/2010

Date Prepared: 06/21/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377693-005 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	ND	53.4	71.6	134	75-125	X

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A)/B$   
Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377722

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	70-135	35	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$   
Relative Percent Difference RPD =  $200 \times [(C-F)/(C+F)]$

Matrix Spike Duplicate Percent Recovery [G] =  $100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit

# Sample Duplicate Recovery

**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377722**

**Lab Batch #: 811582**

**Date Analyzed: 06/21/2010**

**Date Prepared: 06/21/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 377693-005 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 811318**

**Date Analyzed: 06/19/2010**

**Date Prepared: 06/19/2010**

**Analyst: JLG**

**QC- Sample ID: 377717-002 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

## 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: Camille Bryant

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Consulting, LLC

Project #:

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (505) 605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: Camille Bryant

e-mail: cjbryant@basin-consulting.com

(lab use only)		Analyze For:	
ORDER #:	377722	TCLP:	TOTAL:
LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth
	VZ Cell 12 G-1		
	Date Sampled	Time Sampled	
	6/15/10	1540	
	Field Filtered	Total # of Containers	
	1	X	
	Ice	HNO <sub>3</sub>	HCl
	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>
	None	Other (Specify)	
	DW - Drinking Water	SL - Sludge	
	GW - Groundwater	S - Soil/Sediment	
	NP - Non-Potable	Specify Other	
	TPH: 418.1	8015B	8015B
	TPH: TX 1005	TX 1008	
	Cations (Ca, Mg, Na, K)		
	Anions (Cl, SO <sub>4</sub> , Alkalinity)		
	SAR / ESP / OEC		
	Metals: As Ag Ba Cd Cr Pb Hg Se		
	Volatiles		
	Semivolatiles		
	BTEX 8021B/8030	8015B	8015B
	RCI		
	NORM		
	Chlorides		
	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs		
	Standard TAT 4 DAY		

Special Instructions:				Laboratory Comments:			
Relinquished by:	Date	Time	Received by:	Date	Time	VOCs Free of Headspace? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Camille Bryant	6/17	700	JOE LOWERY	6/17	700	Custody seals on container(s) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
JOE LOWERY	6/17	1120				Sample Hand Delivered by Sampler/Client Rep. ? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Relinquished by:	Date	Time	Received by ELOT:	Date	Time	by Courier? UPS DHL FedEx Lane Star	
			Andrea Sam	6-17-10	11:20	Temperature Upon Receipt: 3.6 °C	

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377722  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



# Analytical Report 377723

for

## Basin Environmental Consulting, LLC

Project Manager: Camille Bryant

Southern Union Gas Landfarm

23-JUN-10



12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377723**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377723. 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. 377723 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



## Sample Cross Reference 377723



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 13 G-1	S	Jun-15-10 16:00		377723-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 377723*

*Report Date: 23-JUN-10*  
*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811318 Percent Moisture

None

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811582 Inorganic Anions by EPA 300

E300MI

Batch 811582, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 377723-001.

The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-811610 TPH By SW8015 Mod

SW8015MOD\_NM

Batch 811610, 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected;

QC data not confirmed by re-analysis

Samples affected are: 377715-001 S.



# Certificate of Analysis Summary 377723

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	377723-001					
	<b>Field Id:</b>	VZ Cell 13 G-1					
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Jun-15-10 16:00					
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-21-10 12:53					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		71.0 4.43					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Jun-19-10 10:15					
	<b>Analyzed:</b>	Jun-19-10 22:25					
	<b>Units/RL:</b>	mg/kg RL					
Benzene		ND 0.0010					
Toluene		ND 0.0021					
Ethylbenzene		ND 0.0010					
m,p-Xylenes		ND 0.0021					
o-Xylene		ND 0.0010					
Total Xylenes		ND 0.0010					
Total BTEX		ND 0.0010					
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Jun-19-10 09:18					
	<b>Units/RL:</b>	% RL					
Percent Moisture		5.10 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Jun-18-10 14:55					
	<b>Analyzed:</b>	Jun-22-10 08:40					
	<b>Units/RL:</b>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 15.8					
C12-C28 Diesel Range Hydrocarbons		ND 15.8					
C28-C35 Oil Range Hydrocarbons		ND 15.8					
Total TPH		ND 15.8					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

Houston - Dallas - San Antonio - Corpus Christi - Midland/Odessa - Tampa - Miami - Latin America

	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377723,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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: Southern Union Gas Landfarm

Work Orders : 377723,

Project ID:

Lab Batch #: 811393

Sample: 377723-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 22:25

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0253	0.0300	84	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377723-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 08:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	49.7	50.0	99	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: Southern Union Gas Landfarm

Work Orders : 377723,

Lab Batch #: 811610

Sample: 377715-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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] =  $100 * A / B$

^ If results are based on MDL and validated for QC purposes.



## BS / BSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377723

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

Analyst: LATCOR

Date Prepared: 06/21/2010

Date Analyzed: 06/21/2010

Lab Batch ID: 811582

Sample: 811582-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.2	102	10	10.4	104	2	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:** Southern Union Gas Landfarm

**Work Order #:** 377723

**Analyst:** BEV

**Date Prepared:** 06/18/2010

**Project ID:**

**Date Analyzed:** 06/21/2010

**Lab Batch ID:** 811610

**Sample:** 566324-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377723

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 S

Date Prepared: 06/21/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	53.4	71.6	134	75-125	X

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377723

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377723**

**Lab Batch #: 811582**

**Date Analyzed: 06/21/2010**

**QC- Sample ID: 377693-005 D**

**Reporting Units: mg/kg**

**Date Prepared: 06/21/2010**

**Batch #: 1**

**Project ID:**

**Analyst: LATCOR**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 811318**

**Date Analyzed: 06/19/2010**

**QC- Sample ID: 377717-002 D**

**Reporting Units: %**

**Date Prepared: 06/19/2010**

**Batch #: 1**

**Analyst: JLG**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

## 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: Camille Bryant

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Consulting, LLC

Project #:

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (505) 605-7210

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

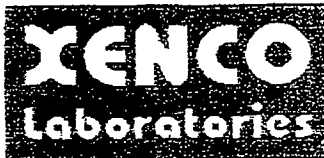
Sampler Signature: Camille Bryant

e-mail: cjbryant@basin-consulting.com

(lab use only)		Analyze For:	
ORDER #:	377723	TCLP:	TOTAL:
LAB # (lab use only)		TPH: TX 1005 TX 1006	X
FIELD CODE	VZ Cell 13 G-1	Cations (Ca, Mg, Na, K)	
Beginning Depth		Anions (Cl, SO <sub>4</sub> , Alkalinity)	
Ending Depth		SAR / ESP / CEC	
Date Sampled	6/15/10	Metals: As Ag Ba Cd Cr Pb Hg Se	
Time Sampled	1600	Volatiles	
Field Filtered		Semivolatiles	
Total # of Containers	1	BTX 001B/5030 BTX 0200	X
Ice	X	RCI	
HNO <sub>3</sub>		N.O.M.	
HCl		Chlorides 300	X
H <sub>2</sub> SO <sub>4</sub>			
NaOH			
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>			
None			
Other (Specify)			
DW - Drinking Water S - Sludge			
CW - Groundwater S - Solid Soil			
NP - Non-Potable Specify Oth			
TPH: 418.1 8015M			
TPH: TX 1005 TX 1006			
Cations (Ca, Mg, Na, K)			
Anions (Cl, SO <sub>4</sub> , Alkalinity)			
SAR / ESP / CEC			
Metals: As Ag Ba Cd Cr Pb Hg Se			
Volatiles			
Semivolatiles			
BTX 001B/5030 BTX 0200			
RCI			
N.O.M.			
Chlorides 300			
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs			
Standard TAT 4 DAY			

Special Instructions:				Laboratory Comments:			
Relinquished by:	Date	Time	Received by:	Date	Time	VOCs Free of Headspace? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Camille Bryant	6/17	700	5002 Lowry	6/17	700	Custody seals on container(s) <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Relinquished by:	Date	Time	Received by:	Date	Time	Sample Hand Delivered <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
5002 Lowry	6/17	1120				by Sampler/Client Rep. ? <input checked="" type="checkbox"/> Y <input type="checkbox"/> N	
Relinquished by:	Date	Time	Received by ELOT:	Date	Time	by Courier? UPS DHL FedEx Lone Star	
			Andrea Sam	6-17-10	11:20	Temperature Upon Receipt: 3.6 °C	

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377723  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



# Analytical Report 377726

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



**12600 West I-20 East Odessa, Texas 79765**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377726**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377726. 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. 377726 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377726



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
VZ Cell 14 G-1	S	Jun-15-10 08:00		377726-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 377726*

*Report Date: 23-JUN-10*  
*Date Received: 06/17/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811318 Percent Moisture

None

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811587 Inorganic Anions by EPA 300

None

Batch: LBA-811610 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811610, 1-Chlorooctane recovered above QC limits . Matrix interferences is suspected;  
QC data not confirmed by re-analysis  
Samples affected are: 377715-001 S.



# Certificate of Analysis Summary 377726

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am

Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 377726-001 <b>Field Id:</b> VZ Cell 14 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Jun-15-10 08:00					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-21-10 22:43 <b>Units/RL:</b> mg/kg RL					
Chloride	8.05 5.65					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b> Jun-19-10 10:15 <b>Analyzed:</b> Jun-19-10 23:32 <b>Units/RL:</b> mg/kg RL					
Benzene	ND 0.0013					
Toluene	ND 0.0027					
Ethylbenzene	ND 0.0013					
m,p-Xylenes	ND 0.0027					
o-Xylene	ND 0.0013					
Total Xylenes	ND 0.0013					
Total BTEX	ND 0.0013					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-19-10 09:18 <b>Units/RL:</b> % RL					
Percent Moisture	25.6 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Jun-18-10 14:55 <b>Analyzed:</b> Jun-22-10 10:01 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 20.1					
C12-C28 Diesel Range Hydrocarbons	ND 20.1					
C28-C35 Oil Range Hydrocarbons	ND 20.1					
Total TPH	ND 20.1					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377726,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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: Southern Union Gas Landfarm

Work Orders : 377726,

Project ID:

Lab Batch #: 811393

Sample: 377726-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 23:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0246	0.0300	82	80-120	
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377726-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:01

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	113	99.6	113	70-135	
o-Terphenyl	53.8	49.8	108	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: Southern Union Gas Landfarm

Work Orders : 377726,

Lab Batch #: 811610

Sample: 377715-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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: Southern Union Gas Landfarm**

**Work Order #: 377726**

**Analyst: ASA**

**Date Prepared: 06/19/2010**

**Project ID:**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811393**

**Sample: 566168-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 06/21/2010**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811587**

**Sample: 811587-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Anions by E300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	ND	10.0	9.45	95	10	9.40	94	1	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377726**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377726

Lab Batch #: 811587

Date Analyzed: 06/21/2010

QC- Sample ID: 377726-001 S

Date Prepared: 06/21/2010

Project ID:

Analyst: LATCOR

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	8.05	134	129	90	75-125	

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A)/B$

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377726

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot [(C-F)/(C+F)]$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

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: Southern Union Gas Landfarm**

**Work Order #: 377726**

**Lab Batch #: 811587**

**Date Analyzed: 06/21/2010**

**QC- Sample ID: 377726-001 D**

**Reporting Units: mg/kg**

**Date Prepared: 06/21/2010**

**Batch #: 1**

**Project ID:**

**Analyst: LATCOR**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	8.05	ND	NC	20	

**Lab Batch #: 811318**

**Date Analyzed: 06/19/2010**

**QC- Sample ID: 377717-002 D**

**Reporting Units: %**

**Date Prepared: 06/19/2010**

**Batch #: 1**

**Analyst: JLG**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	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

## 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: Camille Bryant

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Consulting, LLC

Project #:

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #:

Telephone No: (575) 605-7210

Fax No: (505) 386-1428

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

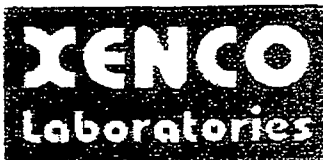
Sampler Signature: Camille Bryant

e-mail: cibryant@basin-consulting.com

(lab use only)		Analyze For:	
ORDER #:	377720	TCLP:	TOTAL:
LAB # (lab use only)			
FIELD CODE	VZ Cell 14 G-1		
Beginning Depth			
Ending Depth			
Date Sampled	6/15/10		
Time Sampled	0800		
Field Filtered			
Total # of Containers	1		
Ice	X		
HNO <sub>3</sub>			
HCl			
H <sub>2</sub> SO <sub>4</sub>			
NaOH			
Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>			
None			
Other (Specify)			
DW - Drinking Water SL - Sludge			
GW - Groundwater S - Solid			
NP - Non-Potable Specify Other			
TPH: 418.1 (8015M)			
TPH: TX 1005 TX 1006			
Cations (Ca, Mg, Na, K)			
Anions (Cl, SO <sub>4</sub> , Alkalinity)			
SAR / ESP / CEC			
Metals: As Ag Ba Cd Cr Pb Hg Se			
Volatiles			
Semivolatiles			
TEX 8021B/5030J or BTEX 8260			
RCI			
NORM.			
Chlorides 300			
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs			
Standard TAT 4 DAY			

Special Instructions:				Laboratory Comments:			
Relinquished by:	Date	Time	Received by:	Date	Time	VOCs Free of Headspace? <input checked="" type="checkbox"/> N	
Camille Bryant	6/17	700	SOGL County	6/17	700	Custody seals on container(s) <input checked="" type="checkbox"/> N	
SOGL County	6/17	1120	Received by:	Date	Time	Sample Hand Delivered <input checked="" type="checkbox"/> N	
			Received by ELOT:	Date	Time	by Courier? <input checked="" type="checkbox"/> N	
			Andrew Lam	6-17-10	11:20	Temperature Upon Receipt: 3.6 °C	



# XENCO Laboratories

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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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377726  
Initials: AL

## Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample Instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

## Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



# Analytical Report 377721

for

## Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant**

**Southern Union Gas Landfarm**

**23-JUN-10**



**12600 West I-20 East Odessa, Texas 79765**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL00449):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)



23-JUN-10

Project Manager: **Camille Bryant**  
**Basin Environmental Consulting, LLC**  
P.O. Box 381  
Lovington, NM 88260

Reference: XENCO Report No: **377721**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**Camille Bryant:**

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 377721. 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. 377721 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 377721



**Basin Environmental Consulting, LLC, Lovington, NM**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 15 G-1	S	Jun-15-10 16:20		377721-001



## CASE NARRATIVE

*Client Name: Basin Environmental Consulting, LLC*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 377721*

*Report Date: 23-JUN-10*  
*Date Received: 06/17/2010*

---

**Sample receipt non conformance and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-811318 Percent Moisture

None

Batch: LBA-811393 BTEX by EPA 8021B

None

Batch: LBA-811582 Inorganic Anions by EPA 300  
E300MI

Batch 811582, Chloride recovered above QC limits in the Matrix Spike.

Samples affected are: 377721-001.

The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-811610 TPH By SW8015 Mod  
SW8015MOD\_NM

Batch 811610, 1-Chlorooctane recovered above QC limits. Matrix interferences is suspected;

QC data not confirmed by re-analysis

Samples affected are: 377715-001 S.



# Certificate of Analysis Summary 377721

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

Date Received in Lab: Thu Jun-17-10 11:20 am


Report Date: 23-JUN-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 377721-001 <b>Field Id:</b> VZ Cell 15 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Jun-15-10 16:20					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-21-10 12:53 <b>Units/RL:</b> mg/kg RL					
Chloride	28.0 9.04					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b> Jun-19-10 10:15 <b>Analyzed:</b> Jun-19-10 21:40 <b>Units/RL:</b> mg/kg RL					
Benzene	ND 0.0011					
Toluene	ND 0.0021					
Ethylbenzene	ND 0.0011					
m,p-Xylenes	ND 0.0021					
o-Xylene	ND 0.0011					
Total Xylenes	ND 0.0011					
Total BTEX	ND 0.0011					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Jun-19-10 09:18 <b>Units/RL:</b> % RL					
Percent Moisture	7.05 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Jun-18-10 14:55 <b>Analyzed:</b> Jun-22-10 01:59 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 16.1					
C12-C28 Diesel Range Hydrocarbons	ND 16.1					
C28-C35 Oil Range Hydrocarbons	ND 16.1					
Total TPH	ND 16.1					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377721,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 811393

Sample: 566168-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 13:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 566168-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/19/10 14:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:03

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 19:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	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: Southern Union Gas Landfarm

Work Orders : 377721,

Project ID:

Lab Batch #: 811393

Sample: 377721-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/19/10 21:40

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0248	0.0300	83	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	128	99.8	128	70-135	
o-Terphenyl	56.8	49.9	114	70-135	

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	121	99.7	121	70-135	
o-Terphenyl	56.5	49.9	113	70-135	

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 18:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377721-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 01:59

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	102	99.9	102	70-135	
o-Terphenyl	49.5	50.0	99	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] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.





## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 377721,

Lab Batch #: 811610

Sample: 377715-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	139	99.6	140	70-135	*
o-Terphenyl	61.9	49.8	124	70-135	

Lab Batch #: 811610

Sample: 377715-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 06/22/10 10:55

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	116	100	116	70-135	
o-Terphenyl	53.7	50.1	107	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: Southern Union Gas Landfarm**

**Work Order #: 377721**

**Analyst: ASA**

**Date Prepared: 06/19/2010**

**Project ID:**

**Date Analyzed: 06/19/2010**

**Lab Batch ID: 811393**

**Sample: 566168-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.1035	104	0.1	0.1027	103	1	70-130	35	
Ethylbenzene	ND	0.1000	0.1086	109	0.1	0.1078	108	1	71-129	35	
m,p-Xylenes	ND	0.2000	0.2265	113	0.2	0.2252	113	1	70-135	35	
o-Xylene	ND	0.1000	0.1155	116	0.1	0.1141	114	1	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 06/21/2010**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811582**

**Sample: 811582-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Anions by E300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	ND	10.0	10.2	102	10	10.4	104	2	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377721**

**Analyst: BEV**

**Date Prepared: 06/18/2010**

**Project ID:**

**Date Analyzed: 06/21/2010**

**Lab Batch ID: 811610**

**Sample: 566324-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	998	1200	120	997	1220	122	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	998	1120	112	997	1130	113	1	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: Southern Union Gas Landfarm



Work Order #: 377721

Lab Batch #: 811582

Date Analyzed: 06/21/2010

QC- Sample ID: 377693-005 S

Date Prepared: 06/21/2010

Project ID:

Analyst: LATCOR

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	ND	53.4	71.6	134	75-125	X

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A)/B$

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377721

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
Toluene	ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
Ethylbenzene	ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
m,p-Xylenes	ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	
o-Xylene	ND	0.1054	0.0829	79	0.1069	0.0894	84	8	71-133	35	

Lab Batch ID: 811610

QC- Sample ID: 377715-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 06/22/2010

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1080	1190	110	1090	984	90	19	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 377721**

**Lab Batch #: 811582**

**Date Analyzed: 06/21/2010**

**QC- Sample ID: 377693-005 D**

**Reporting Units: mg/kg**

**Date Prepared: 06/21/2010**

**Batch #: 1**

**Project ID:**

**Analyst: LATCOR**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 811318**

**Date Analyzed: 06/19/2010**

**QC- Sample ID: 377717-002 D**

**Reporting Units: %**

**Date Prepared: 06/19/2010**

**Batch #: 1**

**Analyst: JLG**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.22	9.31	1	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

**12600 West I-20 East  
Odessa, Texas 79765**

**Phone: 432-563-1800**  
**Fax: 432-563-1713**

**Project Manager:** Camille Bryant

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Consulting, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

**PO #:**

Telephone No: **(575) 605-7210**

**Fax No: (505) 398-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

**e-mail:** [cjbryant@basin-consulting.com](mailto:cjbryant@basin-consulting.com)

[illegible]

**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: Basin Env.  
Date/Time: 6-17-10 11:20  
Lab ID #: 377721  
Initials: AL

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and <u>bottles</u> ?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	No	<u>N/A</u>	
17. VOC sample have zero head space?	<u>Yes</u>	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>3.6</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



**Analytical Report 399258**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

**Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)**

**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

**Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)**

**Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)**

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



10-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399258**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399258. 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. 399258 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399258



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 1 G-1	S	Dec-01-10 09:10		399258-001
VZ Cell 1 G-2	S	Dec-01-10 09:15		399258-002
VZ Cell 1 G-3	S	Dec-01-10 09:20		399258-003
VZ Cell 1 G-4	S	Dec-01-10 09:25		399258-004
VZ Cell 1 G-5	S	Dec-01-10 09:30		399258-005



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399258*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834726 TPH By SW8015 Mod

Batch: LBA-834972 BTEX by EPA 8021B  
SW8021BM

Batch 834972, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 590647-1-BLK, 399258-005, 399258-004, 399258-001.



**Certificate of Analysis Summary 399258**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399258-001	399258-002	399258-003	399258-004	399258-005	
	<i>Field Id:</i>	VZ Cell 1 G-1	VZ Cell 1 G-2	VZ Cell 1 G-3	VZ Cell 1 G-4	VZ Cell 1 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-01-10 09:10	Dec-01-10 09:15	Dec-01-10 09:20	Dec-01-10 09:25	Dec-01-10 09:30	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 16:02	Dec-06-10 16:02	Dec-06-10 16:02	Dec-07-10 01:22	Dec-07-10 01:22	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		10.6 4.53	34.0 4.53	84.7 10.1	117 9.51	19.3 4.38	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-07-10 13:50	Dec-07-10 13:50	Dec-07-10 15:00	Dec-07-10 13:50	Dec-07-10 13:50	
	<i>Analyzed:</i>	Dec-07-10 17:47	Dec-07-10 21:01	Dec-07-10 19:28	Dec-07-10 21:22	Dec-07-10 21:44	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0011	ND 0.0011	ND 0.0060	ND 0.0011	ND 0.0010	
Toluene		ND 0.0021	ND 0.0022	ND 0.0120	ND 0.0023	ND 0.0021	
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0060	ND 0.0011	ND 0.0010	
m_p-Xylenes		ND 0.0021	ND 0.0022	ND 0.0120	ND 0.0023	ND 0.0021	
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0060	ND 0.0011	ND 0.0010	
Total Xylenes		ND 0.0011	ND 0.0011	ND 0.0060	ND 0.0011	ND 0.0010	
Total BTEX		ND 0.0011	ND 0.0011	ND 0.0060	ND 0.0011	ND 0.0010	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		7.27 1.00	7.21 1.00	16.6 1.00	11.7 1.00	4.07 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	
	<i>Analyzed:</i>	Dec-06-10 22:13	Dec-06-10 22:42	Dec-06-10 23:12	Dec-06-10 23:42	Dec-07-10 00:12	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 16.1	ND 16.1	ND 18.0	ND 16.9	ND 15.6	
C12-C28 Diesel Range Hydrocarbons		ND 16.1	ND 16.1	ND 18.0	ND 16.9	ND 15.6	
C28-C35 Oil Range Hydrocarbons		ND 16.1	ND 16.1	ND 18.0	ND 16.9	ND 15.6	
Total TPH		ND 16.1	ND 16.1	ND 18.0	ND 16.9	ND 15.6	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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**Brent Barron, II**  
 Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399258,

Lab Batch #: 834940

Sample: 590617-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 15:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 834940

Sample: 590617-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:23

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 834940

Sample: 590617-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 834940

Sample: 399255-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:19

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 834940

Sample: 399255-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	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] =  $100 * A / B$

^)) results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399258,

Project ID:

Lab Batch #: 834940

Sample: 399258-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 19:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 590647-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 834972

Sample: 590647-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 834972

Sample: 590647-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0224	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 834972

Sample: 399258-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 17:47

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0226	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0326	0.0300	109	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: Southern Union Gas Landfarm

Work Orders : 399258,

Lab Batch #: 834972

Sample: 399258-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 399258-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 21:01

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0239	0.0300	80	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 834972

Sample: 399258-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 21:22

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0228	0.0300	76	80-120	*
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 834972

Sample: 399258-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 21:44

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0207	0.0300	69	80-120	*
4-Bromofluorobenzene	0.0273	0.0300	91	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: Southern Union Gas Landfarm

Work Orders : 399258,

Project ID:

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 12:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	44.6	50.2	89	70-135	

Lab Batch #: 834726

Sample: 590506-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 834726

Sample: 590506-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	44.8	50.1	89	70-135	

Lab Batch #: 834726

Sample: 399258-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 22:13

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	83.1	99.5	84	70-135	
o-Terphenyl	39.6	49.8	80	70-135	

Lab Batch #: 834726

Sample: 399258-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 22:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.6	99.5	88	70-135	
o-Terphenyl	41.9	49.8	84	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] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399258,

Lab Batch #: 834726

Sample: 399258-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 23:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	100	92	70-135	
o-Terphenyl	43.6	50.2	87	70-135	

Lab Batch #: 834726

Sample: 399258-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 23:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.0	99.5	88	70-135	
o-Terphenyl	42.2	49.8	85	70-135	

Lab Batch #: 834726

Sample: 399258-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.1	99.7	92	70-135	
o-Terphenyl	44.2	49.9	89	70-135	

Lab Batch #: 834726

Sample: 399258-005 S / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

Lab Batch #: 834726

Sample: 399258-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 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	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	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: Southern Union Gas Landfarm**

**Work Order #: 399258**

**Analyst: SEE**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834940**

**Sample: 590617-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.0965	97	0.1	0.0922	92	5	70-130	35	
Toluene	ND	0.1000	0.0895	90	0.1	0.0861	86	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0888	89	0.1	0.0864	86	3	71-129	35	
m_p-Xylenes	ND	0.2000	0.1826	91	0.2	0.1779	89	3	70-135	35	
o-Xylene	ND	0.1000	0.0893	89	0.1	0.0880	88	1	71-133	35	

**Analyst: SEE**

**Date Prepared: 12/07/2010**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834972**

**Sample: 590647-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.1002	100	0.1	0.1036	104	3	70-130	35	
Toluene	ND	0.1000	0.0896	90	0.1	0.0903	90	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0874	87	0.1	0.0885	89	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1701	85	0.2	0.1713	86	1	70-135	35	
o-Xylene	ND	0.1000	0.0894	89	0.1	0.0900	90	1	71-133	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



## BS / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399258

Analyst: LATCOR

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834914

Sample: 834914-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.5	105	10	10.3	103	2	75-125	20	

Analyst: LATCOR

Date Prepared: 12/07/2010

Date Analyzed: 12/07/2010

Lab Batch ID: 834917

Sample: 834917-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

Analyst: BEV

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834726

Sample: 590506-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	840	84	999	889	89	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	854	85	999	917	92	7	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: Southern Union Gas Landfarm



Work Order #: 399258

Lab Batch #: 834914

Date Analyzed: 12/06/2010

QC- Sample ID: 399253-003 S

Reporting Units: mg/kg

Project ID:

Date Prepared: 12/06/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	221	202	91	75-125	

Lab Batch #: 834917

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399258-004 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	117	227	350	103	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399258

Project ID:

Lab Batch ID: 834940

QC- Sample ID: 399255-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1092	0.0910	83	0.1092	0.0975	89	7	70-130	35	
Toluene	ND	0.1092	0.0861	79	0.1092	0.0913	84	6	70-130	35	
Ethylbenzene	ND	0.1092	0.0875	80	0.1092	0.0910	83	4	71-129	35	
m_p-Xylenes	ND	0.2183	0.1864	85	0.2183	0.1885	86	1	70-135	35	
o-Xylene	ND	0.1092	0.0909	83	0.1092	0.0916	84	1	71-133	35	

Lab Batch ID: 834972

QC- Sample ID: 399258-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1081	0.1024	95	0.1074	0.1046	97	2	70-130	35	
Toluene	ND	0.1081	0.0911	84	0.1074	0.0920	86	1	70-130	35	
Ethylbenzene	ND	0.1081	0.0899	83	0.1074	0.0912	85	1	71-129	35	
m_p-Xylenes	ND	0.2161	0.1736	80	0.2148	0.1770	82	2	70-135	35	
o-Xylene	ND	0.1081	0.0903	84	0.1074	0.0912	85	1	71-133	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399258

Project ID:

Lab Batch ID: 834726

QC- Sample ID: 399258-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1040	874	84	1040	956	92	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	891	86	1040	983	95	10	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit





## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399258

Lab Batch #: 834914

Date Analyzed: 12/06/2010 16:02

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399253-003 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 834917

Date Analyzed: 12/07/2010 01:22

Date Prepared: 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399258-004 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

Lab Batch #: 834602

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399253-003 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.60	10.8	11	20	

Lab Batch #: 834604

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399258-004 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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

## 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: Ben Arguijo

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: [Signature]

e-mail: pm@basinenv.com

(lab use only)

ORDER #: 399258

ORDER #: 399258												Preservation & # of Containers										Matrix																				RUSH TAT (Pre-Schedule) 24, 48, 72										Standard TAT 4 DAY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
LAB # (lab use only)	FIELD CODE										Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW - Drinking Water SL = Sludge	GW = Groundwater S = Soil/Sol	NP = Non-Potable Specify Other	TPH: 418.1 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	ATK 8021B/5103 or BTEX 8260	RCI	N.O.R.M.	CI- E300																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															

### Special Instructions:

Relinquished by: <u>[Signature]</u>	Date: <u>12/1/10</u>	Time: <u>0900</u>	Received by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>9:01</u>
Relinquished by: <u>[Signature]</u>	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>1:45</u>	Received by ELOT: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>1:45</u>

### Laboratory Comments:

Sample Containers Intact? Y  
VOCs Free of Headspace? Y  
Labels on container(s) Y  
Custody seals on container(s) Y  
Custody seals on cooler(s) Y  
Sample Hand Delivered by Sampler/Client Rep.? Y  
by Courier? UPS DHL FedEx Lone Star  
Temperature Upon Receipt: 402 glass 0 °C

**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: Beta EnvironmentalDate/Time: 12/3/10 1:45Lab ID #: 399258Initials: YM**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

**Analytical Report 399259**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



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Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code: AZ000989): Arizona (AZ0758)



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399259**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399259. 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. 399259 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399259



**Southern Union Gas Services- Monahans, Monahans, TX**

**Southern Union Gas Landfarm**

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 2 G-1	S	Dec-01-10 09:40		399259-001
VZ Cell 2 G-2	S	Dec-01-10 09:45		399259-002
VZ Cell 2 G-3	S	Dec-01-10 09:50		399259-003
VZ Cell 2 G-4	S	Dec-01-10 09:55		399259-004



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 399259*

*Report Date: 13-DEC-10*  
*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834653 BTEX by EPA 8021B  
SW8021BM

Batch 834653, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 590469-1-BLK, 399259-004, 399259-003.

Batch: LBA-834718 TPH By SW8015 Mod

Batch: LBA-834760 BTEX by EPA 8021B  
SW8021BM

Batch 834760, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis  
Samples affected are: 399251-001 S.

Batch: LBA-834917 Anions by E300



**Certificate of Analysis Summary 399259**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399259-001	399259-002	399259-003	399259-004		
	<i>Field Id:</i>	VZ Cell 2 G-1	VZ Cell 2 G-2	VZ Cell 2 G-3	VZ Cell 2 G-4		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Dec-01-10 09:40	Dec-01-10 09:45	Dec-01-10 09:50	Dec-01-10 09:55		
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-07-10 01:22	Dec-07-10 01:22	Dec-07-10 01:22	Dec-07-10 01:22		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		17.7 4.88	5.50 4.54	18.1 9.15	ND 9.24		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-06-10 14:00	Dec-06-10 14:00	Dec-06-10 08:30	Dec-06-10 08:30		
	<i>Analyzed:</i>	Dec-07-10 02:23	Dec-07-10 02:47	Dec-06-10 19:06	Dec-06-10 19:28		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0011		
Toluene		ND 0.0023	ND 0.0022	ND 0.0022	ND 0.0022		
Ethylbenzene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0011		
m_p-Xylenes		ND 0.0023	ND 0.0022	ND 0.0022	ND 0.0022		
o-Xylene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0011		
Total Xylenes		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0011		
Total BTEX		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0011		
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55		
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL		
Percent Moisture		14.0 1.00	7.51 1.00	8.16 1.00	9.10 1.00		
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00	Dec-06-10 11:00		
	<i>Analyzed:</i>	Dec-06-10 21:35	Dec-06-10 21:54	Dec-06-10 22:14	Dec-06-10 22:34		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 17.4	ND 16.2	ND 16.3	ND 16.5		
C12-C28 Diesel Range Hydrocarbons		ND 17.4	ND 16.2	ND 16.3	ND 16.5		
C28-C35 Oil Range Hydrocarbons		ND 17.4	ND 16.2	ND 16.3	ND 16.5		
Total TPH		ND 17.4	ND 16.2	ND 16.3	ND 16.5		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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**Brent Barron, II**  
 Odessa Laboratory Manager



## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399259,

Lab Batch #: 834653

Sample: 590469-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:06

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 834653

Sample: 590469-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 834653

Sample: 590469-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0214	0.0300	71	80-120	*
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 834653

Sample: 399338-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 12:16

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 834653

Sample: 399338-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 12:37

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	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: Southern Union Gas Landfarm

Work Orders : 399259,

Project ID:

Lab Batch #: 834653

Sample: 399259-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 19:06

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0225	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 834653

Sample: 399259-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 19:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0234	0.0300	78	80-120	*
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 834760

Sample: 590531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	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: Southern Union Gas Landfarm

Work Orders : 399259,

Project ID:

Lab Batch #: 834760

Sample: 399251-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834760

Sample: 399259-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 02:23

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 834760

Sample: 399259-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 02:47

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:37

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.4	49.9	77	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: Southern Union Gas Landfarm

Work Orders : 399259,

Project ID:

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 20:56

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.1	100	78	70-135	
o-Terphenyl	38.5	50.1	77	70-135	

Lab Batch #: 834718

Sample: 590499-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 21:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	78.5	100	79	70-135	
o-Terphenyl	39.2	50.2	78	70-135	

Lab Batch #: 834718

Sample: 399259-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 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	75.1	99.5	75	70-135	
o-Terphenyl	37.7	49.8	76	70-135	

Lab Batch #: 834718

Sample: 399259-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 21:54

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	74.1	100	74	70-135	
o-Terphenyl	37.1	50.1	74	70-135	

Lab Batch #: 834718

Sample: 399259-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 22:14

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.7	99.7	76	70-135	
o-Terphenyl	38.1	49.9	76	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: Southern Union Gas Landfarm

Work Orders : 399259,

Lab Batch #: 834718

Sample: 399259-004 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 22:34

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.2	49.9	77	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: Southern Union Gas Landfarm

Work Order #: 399259

Analyst: SEE

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834653

Sample: 590469-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1079	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.0938	94	0.1	0.0946	95	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0936	94	0.1	0.0929	93	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1815	91	0.2	0.1807	90	0	70-135	35	
o-Xylene	ND	0.1000	0.0935	94	0.1	0.0919	92	2	71-133	35	

Analyst: SEE

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834760

Sample: 590531-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0924	92	0.1	0.0967	97	5	70-130	35	
Toluene	ND	0.1000	0.0858	86	0.1	0.0895	90	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0851	85	0.1	0.0891	89	5	71-129	35	
m_p-Xylenes	ND	0.2000	0.1750	88	0.2	0.1837	92	5	70-135	35	
o-Xylene	ND	0.1000	0.0851	85	0.1	0.0908	91	6	71-133	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



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399259**

**Analyst: LATCOR**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834917**

**Sample: 834917-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.1	101	10	9.99	100	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834718**

**Sample: 590499-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	997	927	93	1000	961	96	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	997	841	84	1000	868	87	3	70-135	35	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$

Blank Spike Recovery [D] =  $100 * (C)/[B]$

Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 399259

Lab Batch #: 834917

Date Analyzed: 12/07/2010

QC- Sample ID: 399258-004 S

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	117	227	350	103	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$   
Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399259

Project ID:

Lab Batch ID: 834653

QC- Sample ID: 399338-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1086	0.0871	80	0.1086	0.1079	99	21	70-130	35	
Toluene	ND	0.1086	0.0779	72	0.1086	0.0949	87	20	70-130	35	
Ethylbenzene	ND	0.1086	0.0783	72	0.1086	0.0933	86	17	71-129	35	
m_p-Xylenes	ND	0.2172	0.1560	72	0.2172	0.1824	84	16	70-135	35	
o-Xylene	ND	0.1086	0.0807	74	0.1086	0.0948	87	16	71-133	35	

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35	
Toluene	ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35	
Ethylbenzene	ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35	
m_p-Xylenes	ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35	
o-Xylene	ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	35	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399259**

**Lab Batch #: 834917**

**Date Analyzed: 12/07/2010 01:22**

**Date Prepared: 12/07/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	117	114	3	20	

**Lab Batch #: 834604**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399258-004 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	11.7	11.8	1	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

## 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: Ben Arguljo

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: [Signature]

e-mail: pm@basinenv.com

(lab use only)

ORDER #: 399259

Analyze For:	
TCLP:	TOTAL:
TPH: 418.1	TPH: 8015B
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
RCI	N.O.R.M.
CI- E300	
RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	
Standard TAT 4 DAY	

LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers										Matrix	
								Ice	HNO3	HCl	H2SO4	NaOH	Na2S2O3	None	Other (Specify)	DW - Drinking Water SL - Sludge	GW - Groundwater S - Soil/Sediment	NP - Non-Potable	Specify Other
1	VZ Cell 2 G-1			12/1/10	940	1	X									SOIL	X		
2	VZ Cell 2 G-2			12/1/10	945	1	X									SOIL	X		
3	VZ Cell 2 G-3			12/1/10	950	1	X									SOIL	X		
4	VZ Cell 2 G-4			12/1/10	955	1	X									SOIL	X		

### Special Instructions:

Relinquished by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>0900</u>	Received by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>9:00</u>
Relinquished by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>1:45</u>	Received by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>1:45</u>

### Laboratory Comments:

Sample Containers Intact? Y  
VOCs Free of Headspace? Y  
Labels on container(s) Y  
Custody seals on container(s) Y  
Custody seals on cooler(s) Y  
Sample Hand Delivered by Sampler/Client Rep. ? Y  
by Courier? Y UPS Y DHL Y FedEx Y Lone Star Y  
Temperature Upon Receipt: 402 glass 0 °C



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: Beta Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399259  
Initials: YM

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

**Analytical Report 399256**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105).

**Xenco-Miami (EPA Lab code: FL01152):** Florida (E86678), Maryland (330)

**Xenco-Tampa Mobile (EPA Lab code: FL01212):** Florida (E84900)

**Xenco-Odessa (EPA Lab code: TX00158):** Texas (T104704400-TX)

**Xenco-Dallas (EPA Lab code: TX01468):** Texas (T104704295-TX)

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



10-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399256**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399256. 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. 399256 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399256



**Southern Union Gas Services- Monahans, Monahans, TX**

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 3 G-1	S	Dec-01-10 10:05		399256-001
VZ Cell 3 G-2	S	Dec-01-10 10:10		399256-002
VZ Cell 3 G-3	S	Dec-01-10 10:15		399256-003
VZ Cell 3 G-4	S	Dec-01-10 10:20		399256-004
VZ Cell 3 G-5	S	Dec-01-10 10:25		399256-005





## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399256*

*Report Date: 10-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834653 BTEX by EPA 8021B  
SW8021BM

Batch 834653, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 590469-1-BLK,399256-005.

Batch: LBA-834726 TPH By SW8015 Mod

Batch: LBA-834914 Anions by E300

Batch: LBA-834972 BTEX by EPA 8021B  
SW8021BM

Batch 834972, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 590647-1-BLK,399256-003,399256-004,399256-001,399256-002.



# Certificate of Analysis Summary 399256

## Southern Union Gas Services- Monahans, Monahans, TX

### Project Name: Southern Union Gas Landfarm



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399256-001	399256-002	399256-003	399256-004	399256-005	
	<i>Field Id:</i>	VZ Cell 3 G-1	VZ Cell 3 G-2	VZ Cell 3 G-3	VZ Cell 3 G-4	VZ Cell 3 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-01-10 10:05	Dec-01-10 10:10	Dec-01-10 10:15	Dec-01-10 10:20	Dec-01-10 10:25	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 16:02	Dec-06-10 16:02	Dec-06-10 16:02	Dec-06-10 16:02	Dec-06-10 16:02	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		ND 9.21	ND 9.29	ND 9.32	ND 9.14	ND 9.35	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-07-10 13:50	Dec-07-10 13:50	Dec-07-10 13:50	Dec-07-10 13:50	Dec-06-10 08:30	
	<i>Analyzed:</i>	Dec-07-10 22:05	Dec-07-10 22:26	Dec-08-10 00:35	Dec-07-10 22:48	Dec-06-10 19:50	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	
Toluene		ND 0.0022	ND 0.0022	ND 0.0022	ND 0.0022	ND 0.0023	
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	
m_p-Xylenes		ND 0.0022	ND 0.0022	ND 0.0022	ND 0.0022	ND 0.0023	
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	
Total Xylenes		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	
Total BTEX		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		8.79 1.00	9.54 1.00	9.87 1.00	8.06 1.00	10.2 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	
	<i>Analyzed:</i>	Dec-06-10 19:41	Dec-06-10 20:12	Dec-06-10 20:42	Dec-06-10 21:12	Dec-06-10 21:42	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 16.5	ND 16.6	ND 16.6	ND 16.3	ND 16.6	
C12-C28 Diesel Range Hydrocarbons		ND 16.5	ND 16.6	ND 16.6	ND 16.3	ND 16.6	
C28-C35 Oil Range Hydrocarbons		ND 16.5	ND 16.6	ND 16.6	ND 16.3	ND 16.6	
Total TPH		ND 16.5	ND 16.6	ND 16.6	ND 16.3	ND 16.6	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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**Brent Barron, II**  
 Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
  - B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
  - D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
  - E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
  - F** RPD exceeded lab control limits.
  - J** The target analyte was positively identified below the MQL and above the SQL.
  - U** Analyte was not detected.
  - L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
  - H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
  - K** Sample analyzed outside of recommended hold time.
  - JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399256,

Lab Batch #: 834653

Sample: 590469-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:06

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 834653

Sample: 590469-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 834653

Sample: 590469-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0214	0.0300	71	80-120	*
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 834653

Sample: 399338-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 12:16

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 834653

Sample: 399338-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 12:37

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	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: Southern Union Gas Landfarm

Work Orders : 399256,

Project ID:

Lab Batch #: 834653

Sample: 399256-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 19:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0208	0.0300	69	80-120	*
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 834972

Sample: 590647-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 834972

Sample: 590647-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 834972

Sample: 590647-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0224	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 834972

Sample: 399258-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	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: Southern Union Gas Landfarm

Work Orders : 399256,

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 399256-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 22:05

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0215	0.0300	72	80-120	*
4-Bromofluorobenzene	0.0288	0.0300	96	80-120	

Lab Batch #: 834972

Sample: 399256-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 22:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0215	0.0300	72	80-120	*
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 834972

Sample: 399256-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 22:48

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0213	0.0300	71	80-120	*
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 834972

Sample: 399256-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 00:35

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0214	0.0300	71	80-120	*
4-Bromofluorobenzene	0.0307	0.0300	102	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] =  $100 * A / B$

^ If results are based on MDL and validated for QC purposes.

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399256,

Project ID:

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 12:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	44.6	50.2	89	70-135	

Lab Batch #: 834726

Sample: 590506-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 834726

Sample: 590506-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	44.8	50.1	89	70-135	

Lab Batch #: 834726

Sample: 399256-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 19:41

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	87.3	100	87	70-135	
o-Terphenyl	42.8	50.2	85	70-135	

Lab Batch #: 834726

Sample: 399256-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 20:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.9	100	74	70-135	
o-Terphenyl	35.5	50.2	71	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: Southern Union Gas Landfarm

Work Orders : 399256,

Lab Batch #: 834726

Sample: 399256-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 20:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	81.9	99.8	82	70-135	
o-Terphenyl	38.4	49.9	77	70-135	

Lab Batch #: 834726

Sample: 399256-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 21:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	90.9	99.9	91	70-135	
o-Terphenyl	44.2	50.0	88	70-135	

Lab Batch #: 834726

Sample: 399256-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 21:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	87.5	99.5	88	70-135	
o-Terphenyl	42.0	49.8	84	70-135	

Lab Batch #: 834726

Sample: 399258-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

Lab Batch #: 834726

Sample: 399258-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 01:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	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] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.





## BS / BSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399256

Analyst: SEE

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834653

Sample: 590469-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1079	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.0938	94	0.1	0.0946	95	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0936	94	0.1	0.0929	93	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1815	91	0.2	0.1807	90	0	70-135	35	
o-Xylene	ND	0.1000	0.0935	94	0.1	0.0919	92	2	71-133	35	

Analyst: SEE

Date Prepared: 12/07/2010

Date Analyzed: 12/07/2010

Lab Batch ID: 834972

Sample: 590647-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1002	100	0.1	0.1036	104	3	70-130	35	
Toluene	ND	0.1000	0.0896	90	0.1	0.0903	90	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0874	87	0.1	0.0885	89	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1701	85	0.2	0.1713	86	1	70-135	35	
o-Xylene	ND	0.1000	0.0894	89	0.1	0.0900	90	1	71-133	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



## BS / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399256**

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834914**

**Sample: 834914-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.5	105	10	10.3	103	2	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834726**

**Sample: 590506-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	840	84	999	889	89	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	854	85	999	917	92	7	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: Southern Union Gas Landfarm



Work Order #: 399256

Lab Batch #: 834914

Date Analyzed: 12/06/2010

QC- Sample ID: 399253-003 S

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	221	202	91	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399256

Project ID:

Lab Batch ID: 834653

QC- Sample ID: 399338-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1086	0.0871	80	0.1086	0.1079	99	21	70-130	35	
Toluene	ND	0.1086	0.0779	72	0.1086	0.0949	87	20	70-130	35	
Ethylbenzene	ND	0.1086	0.0783	72	0.1086	0.0933	86	17	71-129	35	
m_p-Xylenes	ND	0.2172	0.1560	72	0.2172	0.1824	84	16	70-135	35	
o-Xylene	ND	0.1086	0.0807	74	0.1086	0.0948	87	16	71-133	35	

Lab Batch ID: 834972

QC- Sample ID: 399258-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1081	0.1024	95	0.1074	0.1046	97	2	70-130	35	
Toluene	ND	0.1081	0.0911	84	0.1074	0.0920	86	1	70-130	35	
Ethylbenzene	ND	0.1081	0.0899	83	0.1074	0.0912	85	1	71-129	35	
m_p-Xylenes	ND	0.2161	0.1736	80	0.2148	0.1770	82	2	70-135	35	
o-Xylene	ND	0.1081	0.0903	84	0.1074	0.0912	85	1	71-133	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399256

Project ID:

Lab Batch ID: 834726

QC- Sample ID: 399258-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1040	874	84	1040	956	92	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	891	86	1040	983	95	10	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: Southern Union Gas Landfarm

Work Order #: 399256

Lab Batch #: 834914

Date Analyzed: 12/06/2010 16:02

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399253-003 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 834602

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399253-003 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.60	10.8	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

# 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: Ben Arguijo

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: [Signature]

e-mail: pm@basinenv.com

(lab use only)

ORDER #: 399256

ORDER #: 399256												Preservation & # of Containers										Matrix										Analyze For:										RUSH TAT (Pre-Schedule) 24, 48, 72		Standard TAT 4 DAY	
LAB # (lab use only)		FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW - Drinking Water SL - Sludge	CW - Groundwater S - Sol/Solid	NP - Non-Potable Specify Other	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Calcium (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	PCB 3021B/303D or BTEX 8260	RCI	NORM	CI- F 300														
1		VZ Cell 3 G-1			12/1/10	1005		1	X								SOIL	X											X			X			X										
2		VZ Cell 3 G-2			12/1/10	1010		1	X								SOIL	X											X			X			X										
3		VZ Cell 3 G-3			12/1/10	1015		1	X								SOIL	X											X			X			X										
4		VZ Cell 3 G-4			12/1/10	1020		1	X								SOIL	X											X			X			X										
5		VZ Cell 3 G-5			12/1/10	1025		1	X								SOIL	X											X			X			X										

Special Instructions:

Relinquished by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>0900</u>	Received by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>9:01</u>
Relinquished by: <u>[Signature]</u>	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>1415</u>	Received by ELOT: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>1:45</u>

Laboratory Comments:

Sample Containers Intact? Y  
VOCs Free of Headspace? Y  
Labels on container(s) Y  
Custody seals on container(s) Y  
Custody seals on cooler(s) Y  
Sample Hand Delivered by Sampler/Client Rep. ? Y  
by Courier? Y UPS Y DHL Y FedEx Y Lone Star Y  
Temperature Upon Receipt: 40.2 glass °C



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399256  
Initials: LM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.6.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



**Analytical Report 399253**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

**Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)**

**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

**Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)**

**Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)**

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**

**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399253**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399253. 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. 399253 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399253



**Southern Union Gas Services- Monahans, Monahans, TX**

**Southern Union Gas Landfarm**

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
VZ Cell 4 G-1	S	Dec-01-10 11:00		399253-001
VZ Cell 4 G-2	S	Dec-01-10 10:55		399253-002
VZ Cell 4 G-3	S	Dec-01-10 10:50		399253-003
VZ Cell 4 G-4	S	Dec-01-10 10:45		399253-004
VZ Cell 4 G-5	S	Dec-01-10 10:45		399253-005



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 399253*

*Report Date: 13-DEC-10*  
*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834726 TPH By SW8015 Mod

Batch: LBA-834972 BTEX by EPA 8021B  
SW8021BM

Batch 834972, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 590647-1-BLK,399253-001,399253-004.

Batch: LBA-835333 BTEX by EPA 8021B  
SW8021BM

Batch 835333, 1,4-Difluorobenzene recovered below QC limits Data confirmed by re-analysis. Samples affected are: 590902-1-BLK,399253-003,399253-002. QC data not confirmed by re-analysis.



**Certificate of Analysis Summary 399253**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399253-001	399253-002	399253-003	399253-004	399253-005	
	<i>Field Id:</i>	VZ Cell 4 G-1	VZ Cell 4 G-2	VZ Cell 4 G-3	VZ Cell 4 G-4	VZ Cell 4 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-01-10 11:00	Dec-01-10 10:55	Dec-01-10 10:50	Dec-01-10 10:45	Dec-01-10 10:45	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 10:19	Dec-06-10 10:19	Dec-06-10 16:02	Dec-06-10 16:02	Dec-06-10 16:02	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		ND 9.51	ND 4.76	ND 9.29	ND 9.85	ND 8.81	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-07-10 13:50	Dec-08-10 14:30	Dec-08-10 14:30	Dec-07-10 13:50	Dec-07-10 15:00	
	<i>Analyzed:</i>	Dec-08-10 01:18	Dec-09-10 10:42	Dec-09-10 13:15	Dec-08-10 00:56	Dec-08-10 04:18	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	ND 0.0010	
Toluene		ND 0.0023	ND 0.0023	ND 0.0022	ND 0.0023	ND 0.0021	
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	ND 0.0010	
m_p-Xylenes		ND 0.0023	ND 0.0023	ND 0.0022	ND 0.0023	ND 0.0021	
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	ND 0.0010	
Total Xylenes		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	ND 0.0010	
Total BTEX		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0012	ND 0.0010	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		11.7 1.00	11.8 1.00	9.60 1.00	14.7 1.00	4.69 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	
	<i>Analyzed:</i>	Dec-06-10 15:13	Dec-06-10 15:42	Dec-06-10 16:12	Dec-06-10 16:42	Dec-06-10 17:11	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 16.9	ND 16.9	ND 16.7	ND 17.7	ND 15.7	
C12-C28 Diesel Range Hydrocarbons		ND 16.9	ND 16.9	ND 16.7	ND 17.7	ND 15.7	
C28-C35 Oil Range Hydrocarbons		ND 16.9	ND 16.9	ND 16.7	ND 17.7	ND 15.7	
Total TPH		ND 16.9	ND 16.9	ND 16.7	ND 17.7	ND 15.7	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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**Brent Barron, II**  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.

**JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399253,

Lab Batch #: 834940

Sample: 590617-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 15:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 834940

Sample: 590617-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:23

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 834940

Sample: 590617-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 834940

Sample: 399255-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:19

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 834940

Sample: 399255-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	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: Southern Union Gas Landfarm

Work Orders : 399253,

Project ID:

Lab Batch #: 834940

Sample: 399253-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 04:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 590647-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 834972

Sample: 590647-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 834972

Sample: 590647-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0224	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 834972

Sample: 399258-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	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: Southern Union Gas Landfarm

Work Orders : 399253,

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 399253-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 00:56

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0214	0.0300	71	80-120	*
4-Bromofluorobenzene	0.0270	0.0300	90	80-120	

Lab Batch #: 834972

Sample: 399253-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 01:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0219	0.0300	73	80-120	*
4-Bromofluorobenzene	0.0284	0.0300	95	80-120	

Lab Batch #: 835333

Sample: 590902-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 20:56

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0251	0.0300	84	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 835333

Sample: 590902-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 21:17

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0241	0.0300	80	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] =  $100 * A / B$

^ If results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399253,

Project ID:

Lab Batch #: 835333

Sample: 590902-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 22:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0227	0.0300	76	80-120	*
4-Bromofluorobenzene	0.0304	0.0300	101	80-120	

Lab Batch #: 835333

Sample: 399757-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/10 09:17

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0293	0.0300	98	80-120	
4-Bromofluorobenzene	0.0296	0.0300	99	80-120	

Lab Batch #: 835333

Sample: 399757-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/10 09:38

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0282	0.0300	94	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 835333

Sample: 399253-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/10 10:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0224	0.0300	75	80-120	**
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 835333

Sample: 399253-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/09/10 13:15

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0224	0.0300	75	80-120	**
4-Bromofluorobenzene	0.0290	0.0300	97	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: Southern Union Gas Landfarm

Work Orders : 399253,

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 12:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	44.6	50.2	89	70-135	

Lab Batch #: 834726

Sample: 590506-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 834726

Sample: 590506-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	44.8	50.1	89	70-135	

Lab Batch #: 834726

Sample: 399253-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 15:13

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.5	99.6	96	70-135	
o-Terphenyl	46.5	49.8	93	70-135	

Lab Batch #: 834726

Sample: 399253-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 15:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.4	99.5	95	70-135	
o-Terphenyl	45.7	49.8	92	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: Southern Union Gas Landfarm**

**Work Orders :** 399253,

**Project ID:**

**Lab Batch #:** 834726

**Sample:** 399253-003 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 12/06/10 16:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	92.0	101	91	70-135	
o-Terphenyl	43.4	50.3	86	70-135	

**Lab Batch #:** 834726

**Sample:** 399253-004 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 12/06/10 16:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	100	93	70-135	
o-Terphenyl	45.3	50.2	90	70-135	

**Lab Batch #:** 834726

**Sample:** 399253-005 / SMP

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 12/06/10 17:11

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	95.9	99.5	96	70-135	
o-Terphenyl	45.8	49.8	92	70-135	

**Lab Batch #:** 834726

**Sample:** 399258-005 S / MS

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 12/07/10 00:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

**Lab Batch #:** 834726

**Sample:** 399258-005 SD / MSD

**Batch:** 1 **Matrix:** Soil

**Units:** mg/kg

**Date Analyzed:** 12/07/10 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	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	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] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.



## BS / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399253

Analyst: SEE

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834940

Sample: 590617-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0965	97	0.1	0.0922	92	5	70-130	35	
Toluene	ND	0.1000	0.0895	90	0.1	0.0861	86	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0888	89	0.1	0.0864	86	3	71-129	35	
m_p-Xylenes	ND	0.2000	0.1826	91	0.2	0.1779	89	3	70-135	35	
o-Xylene	ND	0.1000	0.0893	89	0.1	0.0880	88	1	71-133	35	

Analyst: SEE

Date Prepared: 12/07/2010

Date Analyzed: 12/07/2010

Lab Batch ID: 834972

Sample: 590647-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1002	100	0.1	0.1036	104	3	70-130	35	
Toluene	ND	0.1000	0.0896	90	0.1	0.0903	90	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0874	87	0.1	0.0885	89	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1701	85	0.2	0.1713	86	1	70-135	35	
o-Xylene	ND	0.1000	0.0894	89	0.1	0.0900	90	1	71-133	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



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399253**

**Analyst: SEE**

**Date Prepared: 12/08/2010**

**Project ID:**

**Date Analyzed: 12/08/2010**

**Lab Batch ID: 835333**

**Sample: 590902-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.1066	107	0.1	0.0955	96	11	70-130	35	
Toluene	ND	0.1000	0.0939	94	0.1	0.0845	85	11	70-130	35	
Ethylbenzene	ND	0.1000	0.0930	93	0.1	0.0838	84	10	71-129	35	
m_p-Xylenes	ND	0.2000	0.1792	90	0.2	0.1630	82	9	70-135	35	
o-Xylene	ND	0.1000	0.0935	94	0.1	0.0846	85	10	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834907**

**Sample: 834907-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Anions by E300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	ND	10.0	10.3	103	10	10.2	102	1	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399253**

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834914**

**Sample: 834914-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.5	105	10	10.3	103	2	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834726**

**Sample: 590506-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	840	84	999	889	89	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	854	85	999	917	92	7	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: Southern Union Gas Landfarm



Work Order #: 399253

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Reporting Units: mg/kg

Project ID:

Date Prepared: 12/06/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Lab Batch #: 834914

Date Analyzed: 12/06/2010

QC- Sample ID: 399253-003 S

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	221	202	91	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$   
Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit





# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399253

Project ID:

Lab Batch ID: 834940

QC- Sample ID: 399255-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1092	0.0910	83	0.1092	0.0975	89	7	70-130	35	
Toluene	ND	0.1092	0.0861	79	0.1092	0.0913	84	6	70-130	35	
Ethylbenzene	ND	0.1092	0.0875	80	0.1092	0.0910	83	4	71-129	35	
m_p-Xylenes	ND	0.2183	0.1864	85	0.2183	0.1885	86	1	70-135	35	
o-Xylene	ND	0.1092	0.0909	83	0.1092	0.0916	84	1	71-133	35	

Lab Batch ID: 834972

QC- Sample ID: 399258-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1081	0.1024	95	0.1074	0.1046	97	2	70-130	35	
Toluene	ND	0.1081	0.0911	84	0.1074	0.0920	86	1	70-130	35	
Ethylbenzene	ND	0.1081	0.0899	83	0.1074	0.0912	85	1	71-129	35	
m_p-Xylenes	ND	0.2161	0.1736	80	0.2148	0.1770	82	2	70-135	35	
o-Xylene	ND	0.1081	0.0903	84	0.1074	0.0912	85	1	71-133	35	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times [(C-F)/(C+F)]$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399253

Project ID:

Lab Batch ID: 835333

QC- Sample ID: 399757-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/09/2010

Date Prepared: 12/08/2010

Analyst: SEE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1055	0.0967	92	0.1057	0.0963	91	0	70-130	35	
Toluene	ND	0.1055	0.0844	80	0.1057	0.0857	81	2	70-130	35	
Ethylbenzene	ND	0.1055	0.0813	77	0.1057	0.0827	78	2	71-129	35	
m_p-Xylenes	ND	0.2110	0.1669	79	0.2114	0.1695	80	2	70-135	35	
o-Xylene	ND	0.1055	0.0826	78	0.1057	0.0847	80	3	71-133	35	

Lab Batch ID: 834726

QC- Sample ID: 399258-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1040	874	84	1040	956	92	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	891	86	1040	983	95	10	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, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399253

Lab Batch #: 834907

Date Analyzed: 12/06/2010 10:19

QC- Sample ID: 399244-001 D

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 834914

Date Analyzed: 12/06/2010 16:02

QC- Sample ID: 399253-003 D

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Batch #: 1

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 834594

Date Analyzed: 12/06/2010 12:55

QC- Sample ID: 399244-001 D

Reporting Units: %

Date Prepared: 12/06/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Lab Batch #: 834602

Date Analyzed: 12/06/2010 12:55

QC- Sample ID: 399253-003 D

Reporting Units: %

Date Prepared: 12/06/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.60	10.8	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

## Page 20 of 21

## Final 1.000

[illegible]



**XENCO Laboratories**  
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 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: Basin Environmental  
 Date/Time: 12/3/10 1:45  
 Lab ID #: 399253  
 Initials: AM

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



**Analytical Report 399244**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



**12600 West I-20 East Odessa, Texas 79765**

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Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

**Xenco-Miami (EPA Lab code: FL01152):** Florida (E86678), Maryland (330)

**Xenco-Tampa Mobile (EPA Lab code: FL01212):** Florida (E84900)

**Xenco-Odessa (EPA Lab code: TX00158):** Texas (T104704400-TX)

**Xenco-Dallas (EPA Lab code: TX01468):** Texas (T104704295-TX)

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
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**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399244**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399244. 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. 399244 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399244



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 5 G-1	S	Dec-01-10 11:10		399244-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399244*

*Report Date: 13-DEC-10*

*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834760 BTEX by EPA 8021B  
SW8021BM

Batch 834760, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis  
Samples affected are: 399251-001 S.

Batch: LBA-834907 Anions by E300

Batch: LBA-834957 TPH By SW8015 Mod



**Certificate of Analysis Summary 399244**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399244-001				
	<b>Field Id:</b>	VZ Cell 5 G-1				
	<b>Depth:</b>					
	<b>Matrix:</b>	SOIL				
	<b>Sampled:</b>	Dec-01-10 11:10				
<b>Anions by E300</b>	<b>Extracted:</b>					
	<b>Analyzed:</b>	Dec-06-10 10:19				
	<b>Units/RL:</b>	mg/kg RL				
Chloride		ND 8.90				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Dec-06-10 14:00				
	<b>Analyzed:</b>	Dec-07-10 00:27				
	<b>Units/RL:</b>	mg/kg RL				
Benzene		ND 0.0011				
Toluene		ND 0.0021				
Ethylbenzene		ND 0.0011				
m_p-Xylenes		ND 0.0021				
o-Xylene		ND 0.0011				
Total Xylenes		ND 0.0011				
Total BTEX		ND 0.0011				
<b>Percent Moisture</b>	<b>Extracted:</b>					
	<b>Analyzed:</b>	Dec-06-10 12:55				
	<b>Units/RL:</b>	% RL				
Percent Moisture		5.58 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-07-10 09:00				
	<b>Analyzed:</b>	Dec-08-10 07:10				
	<b>Units/RL:</b>	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.8				
C12-C28 Diesel Range Hydrocarbons		ND 15.8				
C28-C35 Oil Range Hydrocarbons		ND 15.8				
Total TPH		ND 15.8				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399244,

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 834760

Sample: 590531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834760

Sample: 399251-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	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: Southern Union Gas Landfarm

Work Orders : 399244,

Project ID:

Lab Batch #: 834760

Sample: 399244-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:27

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0271	0.0300	90	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	80-120	

Lab Batch #: 834654

Sample: 590471-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	37.9	50.2	75	70-135	

Lab Batch #: 834654

Sample: 590471-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.6	99.9	72	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 834654

Sample: 590471-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.4	100	71	70-135	
o-Terphenyl	35.5	50.1	71	70-135	

Lab Batch #: 834654

Sample: 399335-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	70.3	99.5	71	70-135	
o-Terphenyl	37.4	49.8	75	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: Southern Union Gas Landfarm

Work Orders : 399244,

Lab Batch #: 834654

Sample: 399335-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	70-135	

Lab Batch #: 834957

Sample: 590643-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 04:17

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	48.0	50.1	96	70-135	

Lab Batch #: 834957

Sample: 590643-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 04:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	101	106	70-135	
o-Terphenyl	48.5	50.3	96	70-135	

Lab Batch #: 834957

Sample: 590643-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 05:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.5	113	70-135	
o-Terphenyl	53.8	49.8	108	70-135	

Lab Batch #: 834957

Sample: 399244-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 07:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	99.5	122	70-135	
o-Terphenyl	58.0	49.8	116	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: Southern Union Gas Landfarm

Work Orders : 399244,

Project ID:

Lab Batch #: 834957

Sample: 399541-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 08:38

### 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	101	95	70-135	
o-Terphenyl	41.4	50.3	82	70-135	

Lab Batch #: 834957

Sample: 399541-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 09:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	100	95	70-135	
o-Terphenyl	39.8	50.1	79	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 / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399244

Analyst: SEE

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834760

Sample: 590531-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B		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
Analytes												
Benzene		ND	0.1000	0.0924	92	0.1	0.0967	97	5	70-130	35	
Toluene		ND	0.1000	0.0858	86	0.1	0.0895	90	4	70-130	35	
Ethylbenzene		ND	0.1000	0.0851	85	0.1	0.0891	89	5	71-129	35	
m_p-Xylenes		ND	0.2000	0.1750	88	0.2	0.1837	92	5	70-135	35	
o-Xylene		ND	0.1000	0.0851	85	0.1	0.0908	91	6	71-133	35	

Analyst: LATCOR

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834907

Sample: 834907-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300		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
Analytes												
Chloride		ND	10.0	10.3	103	10	10.2	102	1	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: Southern Union Gas Landfarm**

**Work Order #: 399244**

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834654**

**Sample: 590471-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	914	91	999	939	94	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	878	88	999	878	88	0	70-135	35	

**Analyst: BEV**

**Date Prepared: 12/07/2010**

**Date Analyzed: 12/08/2010**

**Lab Batch ID: 834957**

**Sample: 590643-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	860	86	1010	841	83	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	852	85	1010	842	83	1	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: Southern Union Gas Landfarm

Work Order #: 399244

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$   
Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399244

Project ID:

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
Benzene	ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35	
Toluene	ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35	
Ethylbenzene	ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35	
m_p-Xylenes	ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35	
o-Xylene	ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	35	

Lab Batch ID: 834654

QC- Sample ID: 399335-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1160	1050	91	1170	1050	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1160	948	82	1170	929	79	2	70-135	35	

Lab Batch ID: 834957

QC- Sample ID: 399541-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/08/2010

Date Prepared: 12/07/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1020	750	74	1020	739	72	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	47.5	1020	783	72	1020	769	71	2	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399244

Lab Batch #: 834907

Date Analyzed: 12/06/2010 10:19

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399244-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 834594

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399244-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$   
All Results are based on MDL and validated for QC purposes.  
BRL - Below Reporting Limit

# 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: Ben Arguijo**

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies, LLC

**Project #:**

**Company Address:** P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378

**Fax No: (575) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



**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: BETA Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399244  
Initials: 2/14

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

**Analytical Report 399245**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

**Xenco-Miami (EPA Lab code: FL01152):** Florida (E86678), Maryland (330)

**Xenco-Tampa Mobile (EPA Lab code: FL01212):** Florida (E84900)

**Xenco-Odessa (EPA Lab code: TX00158):** Texas (T104704400-TX)

**Xenco-Dallas (EPA Lab code: TX01468):** Texas (T104704295-TX)

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)





13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399245**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399245. 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. 399245 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399245



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 6 G-1	S	Dec-01-10 11:20		399245-001
VZ Cell 6 G-2	S	Dec-01-10 11:25		399245-002



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399245*

*Report Date: 13-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834760 BTEX by EPA 8021B  
SW8021BM

Batch 834760, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data confirmed by re-analysis  
Samples affected are: 399251-001 S.

Batch: LBA-834907 Anions by E300

Batch: LBA-834957 TPH By SW8015 Mod



# Certificate of Analysis Summary 399245

Southern Union Gas Services- Monahans, Monahans, TX



Project Id:

Contact: Rose Slade

Project Location: Lea County, NM

Project Name: Southern Union Gas Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm


Report Date: 13-DEC-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399245-001	399245-002				
	<b>Field Id:</b>	VZ Cell 6 G-1	VZ Cell 6 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Dec-01-10 11:20	Dec-01-10 11:25				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 10:19	Dec-06-10 10:19				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		ND 4.47	37.0 9.11				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Dec-06-10 14:00	Dec-06-10 14:00				
	<b>Analyzed:</b>	Dec-07-10 00:50	Dec-07-10 01:14				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		ND 0.0011	ND 0.0011				
Toluene		ND 0.0021	ND 0.0022				
Ethylbenzene		ND 0.0011	ND 0.0011				
m_p-Xylenes		ND 0.0021	ND 0.0022				
o-Xylene		ND 0.0011	ND 0.0011				
Total Xylenes		ND 0.0011	ND 0.0011				
Total BTEX		ND 0.0011	ND 0.0011				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 12:55	Dec-06-10 12:55				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		6.00 1.00	7.75 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-07-10 09:00	Dec-07-10 09:00				
	<b>Analyzed:</b>	Dec-08-10 07:39	Dec-08-10 08:07				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 16.0	ND 16.2				
C12-C28 Diesel Range Hydrocarbons		ND 16.0	ND 16.2				
C28-C35 Oil Range Hydrocarbons		ND 16.0	ND 16.2				
Total TPH		ND 16.0	ND 16.2				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399245,

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 834760

Sample: 590531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834760

Sample: 399251-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	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] =  $100 * A / B$

\*\* If results are based on MDL and validated for QC purposes.

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399245,

Project ID:

Lab Batch #: 834760

Sample: 399245-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:50

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 834760

Sample: 399245-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 01:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0313	0.0300	104	80-120	

Lab Batch #: 834654

Sample: 590471-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	37.9	50.2	75	70-135	

Lab Batch #: 834654

Sample: 590471-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.6	99.9	72	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 834654

Sample: 590471-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.4	100	71	70-135	
o-Terphenyl	35.5	50.1	71	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: Southern Union Gas Landfarm

Work Orders : 399245,

Lab Batch #: 834654

Sample: 399335-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.3	99.5	71	70-135	
o-Terphenyl	37.4	49.8	75	70-135	

Lab Batch #: 834654

Sample: 399335-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	70-135	

Lab Batch #: 834957

Sample: 590643-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 04:17

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	108	100	108	70-135	
o-Terphenyl	48.0	50.1	96	70-135	

Lab Batch #: 834957

Sample: 590643-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 04:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	101	106	70-135	
o-Terphenyl	48.5	50.3	96	70-135	

Lab Batch #: 834957

Sample: 590643-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/08/10 05:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.5	113	70-135	
o-Terphenyl	53.8	49.8	108	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: Southern Union Gas Landfarm

Work Orders : 399245,

Project ID:

Lab Batch #: 834957

Sample: 399245-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 07:39

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.8	101	97	70-135	
o-Terphenyl	47.4	50.3	94	70-135	

Lab Batch #: 834957

Sample: 399245-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 08:07

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	98.6	99.5	99	70-135	
o-Terphenyl	47.6	49.8	96	70-135	

Lab Batch #: 834957

Sample: 399541-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 08:38

### 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	101	95	70-135	
o-Terphenyl	41.4	50.3	82	70-135	

Lab Batch #: 834957

Sample: 399541-003 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 09:08

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	100	95	70-135	
o-Terphenyl	39.8	50.1	79	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 / BSB Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399245

Analyst: SEE

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834760

Sample: 590531-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0924	92	0.1	0.0967	97	5	70-130	35	
Toluene	ND	0.1000	0.0858	86	0.1	0.0895	90	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0851	85	0.1	0.0891	89	5	71-129	35	
m_p-Xylenes	ND	0.2000	0.1750	88	0.2	0.1837	92	5	70-135	35	
o-Xylene	ND	0.1000	0.0851	85	0.1	0.0908	91	6	71-133	35	

Analyst: LATCOR

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834907

Sample: 834907-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.3	103	10	10.2	102	1	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: Southern Union Gas Landfarm**

**Work Order #: 399245**

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834654**

**Sample: 590471-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	914	91	999	939	94	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	878	88	999	878	88	0	70-135	35	

**Analyst: BEV**

**Date Prepared: 12/07/2010**

**Date Analyzed: 12/08/2010**

**Lab Batch ID: 834957**

**Sample: 590643-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	860	86	1010	841	83	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	852	85	1010	842	83	1	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: Southern Union Gas Landfarm

Work Order #: 399245

Lab Batch #: 834907

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399244-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

### MATRIX / MATRIX SPIKE RECOVERY STUDY

Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$   
Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

Below Reporting Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399245

Project ID:

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
Benzene	ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35	
Toluene	ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35	
Ethylbenzene	ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35	
m_p-Xylenes	ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35	
o-Xylene	ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	35	

Lab Batch ID: 834654

QC- Sample ID: 399335-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1160	1050	91	1170	1050	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1160	948	82	1170	929	79	2	70-135	35	

Lab Batch ID: 834957

QC- Sample ID: 399541-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/08/2010

Date Prepared: 12/07/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1020	750	74	1020	739	72	1	70-135	35	
C12-C28 Diesel Range Hydrocarbons	47.5	1020	783	72	1020	769	71	2	70-135	35	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$   
Relative Percent Difference RPD =  $200 \times (C-F)/(C+F)$

Matrix Spike Duplicate Percent Recovery [G] =  $100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit

**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399245**

**Lab Batch #: 834907**

**Date Analyzed: 12/06/2010 10:19**

**QC- Sample ID: 399244-001 D**

**Reporting Units: mg/kg**

**Date Prepared: 12/06/2010**

**Batch #: 1**

**Project ID:**

**Analyst: LATCOR**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 834594**

**Date Analyzed: 12/06/2010 12:55**

**QC- Sample ID: 399244-001 D**

**Reporting Units: %**

**Date Prepared: 12/06/2010**

**Batch #: 1**

**Analyst: JLG**

**Matrix: Soil**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

# 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: **Ben Arguljo**

**Project Name: Southern Union Gas Landfarm**

Company Name **Basin Environmental Consulting, LLC**

Project #: \_\_\_\_\_

Company Address: P.O. Box 381

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575)396-2378

Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: 

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]

**Special Instructions:**

Laboratory Comments:

Relinquished by: 	Date	Time	Received by: 	Date	Time
--	------	------	---	------	------

**Sample Containers Intact?**

Relinquished by:	Date	Time	Received by:	Date	Time
------------------	------	------	--------------	------	------

## VOCs Free of Headspace?

Relinquished by:	Date	Time	Received by ELOT:	Date	Time
------------------	------	------	-------------------	------	------

Labels on container(s)

**Custody seals on container**

Custody seals on cooler(s)

Sample Hand Delivered  
by Sampler/Client Rep. 2

by Courier? **UPS**

by, common

Temperature Upon Receipt \_\_\_\_\_

Y  
Y  
Y  
Y  
Y  
FedEx Lone Star  
class °C



**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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399245  
Initials: AM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



**Analytical Report 399254**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

**Xenco-Miami (EPA Lab code: FL01152):** Florida (E86678), Maryland (330)

**Xenco-Tampa Mobile (EPA Lab code: FL01212):** Florida (E84900)

**Xenco-Odessa (EPA Lab code: TX00158):** Texas (T104704400-TX)

**Xenco-Dallas (EPA Lab code: TX01468):** Texas (T104704295-TX)

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399254**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399254. 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. 399254 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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## Sample Cross Reference 399254



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 7 G-1	S	Dec-01-10 12:55		399254-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399254*

*Report Date: 13-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834726 TPH By SW8015 Mod



# Certificate of Analysis Summary 399254

Southern Union Gas Services- Monahans, Monahans, TX



Project Id:  
Contact: Rose Slade  
Project Location: Lea County, NM

Project Name: Southern Union Gas Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 13-DEC-10

Project Manager: Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399254-001					
	<b>Field Id:</b>	VZ Cell 7 G-1					
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL					
	<b>Sampled:</b>	Dec-01-10 12:55					
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 16:02					
	<b>Units/RL:</b>	mg/kg RL					
Chloride		ND 4.51					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Dec-07-10 15:00					
	<b>Analyzed:</b>	Dec-08-10 03:55					
	<b>Units/RL:</b>	mg/kg RL					
Benzene		ND 0.0011					
Toluene		ND 0.0021					
Ethylbenzene		ND 0.0011					
m_p-Xylenes		ND 0.0021					
o-Xylene		ND 0.0011					
Total Xylenes		ND 0.0011					
Total BTEX		ND 0.0011					
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 12:55					
	<b>Units/RL:</b>	% RL					
Percent Moisture		6.88 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-06-10 10:00					
	<b>Analyzed:</b>	Dec-06-10 17:41					
	<b>Units/RL:</b>	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 16.2					
C12-C28 Diesel Range Hydrocarbons		ND 16.2					
C28-C35 Oil Range Hydrocarbons		ND 16.2					
Total TPH		ND 16.2					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

***A Small Business and Minority Status Company that delivers SERVICE and QUALITY***

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9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399254,

Lab Batch #: 834940

Sample: 590617-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 15:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 834940

Sample: 590617-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:23

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 834940

Sample: 590617-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 834940

Sample: 399255-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:19

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	80-120	

Lab Batch #: 834940

Sample: 399255-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	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: Southern Union Gas Landfarm

Work Orders : 399254,

Project ID:

Lab Batch #: 834940

Sample: 399254-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 03:55

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 12:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	44.6	50.2	89	70-135	

Lab Batch #: 834726

Sample: 590506-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 834726

Sample: 590506-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	44.8	50.1	89	70-135	

Lab Batch #: 834726

Sample: 399254-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:41

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	89.2	101	88	70-135	
o-Terphenyl	43.4	50.3	86	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] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.





## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399254,

Project ID:

Lab Batch #: 834726

Sample: 399258-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

Lab Batch #: 834726

Sample: 399258-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 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	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	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: Southern Union Gas Landfarm**

**Work Order #: 399254**

**Analyst: SEE**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834940**

**Sample: 590617-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.0965	97	0.1	0.0922	92	5	70-130	35	
Toluene	ND	0.1000	0.0895	90	0.1	0.0861	86	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0888	89	0.1	0.0864	86	3	71-129	35	
m_p-Xylenes	ND	0.2000	0.1826	91	0.2	0.1779	89	3	70-135	35	
o-Xylene	ND	0.1000	0.0893	89	0.1	0.0880	88	1	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834914**

**Sample: 834914-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Anions by E300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	ND	10.0	10.5	105	10	10.3	103	2	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399254**

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834726**

**Sample: 590506-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	840	84	999	889	89	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	854	85	999	917	92	7	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: Southern Union Gas Landfarm



Work Order #: 399254

Lab Batch #: 834914

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399253-003 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	ND	221	202	91	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399254

Project ID:

Lab Batch ID: 834940

QC- Sample ID: 399255-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1092	0.0910	83	0.1092	0.0975	89	7	70-130	35	
Toluene	ND	0.1092	0.0861	79	0.1092	0.0913	84	6	70-130	35	
Ethylbenzene	ND	0.1092	0.0875	80	0.1092	0.0910	83	4	71-129	35	
m,p-Xylenes	ND	0.2183	0.1864	85	0.2183	0.1885	86	1	70-135	35	
o-Xylene	ND	0.1092	0.0909	83	0.1092	0.0916	84	1	71-133	35	

Lab Batch ID: 834726

QC- Sample ID: 399258-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1040	874	84	1040	956	92	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	891	86	1040	983	95	10	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399254**

**Lab Batch #: 834914**

**Date Analyzed: 12/06/2010 16:02**

**Date Prepared: 12/06/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399253-003 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 834602**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399253-003 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.60	10.8	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

# 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:** Ben Arguijo

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Services Technologies, LLC**

Project #:

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: **(575) 396-2378**

Fax No: (575) 396-1429

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: 

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]**Special Instructions:****Laboratory Comments:**

Relinquished by:	Date	Time	Received by:	Date	Time	Labels on container(s)	
Relinquished by:	Date	Time	Received by:	Date	Time	Custody seals on container(s)	
Relinquished by:	Date	Time	Received by:	Date	Time	Custody seals on cooler(s)	
Relinquished by:	Date	Time	Received by:	Date	Time	Sample Hand Delivered	
Relinquished by:	Date	Time	Received by:	Date	Time	by Sampler/Client Rep. ?	
Relinquished by:	Date	Time	Received by:	Date	Time	by Courier? UPS DHL FedEx Lone Star	
Relinquished by:	Date	Time	Received by:	Date	Time	Temperature Upon Receipt:	

**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: 8/1/2010 Page 1 of 1

**Prelogin / Nonconformance Report - Sample Log-In**

Client: BETA Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399254  
Initials: AM

**Sample Receipt Checklist**

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

**Nonconformance Documentation**

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis



**Analytical Report 399246**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

**Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)**

**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

**Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)**

**Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)**

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399246**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399246. 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. 399246 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399246



**Southern Union Gas Services- Monahans, Monahans, TX**

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 8 G-1	S	Dec-01-10 12:40		399246-001
VZ Cell 8 G-2	S	Dec-01-10 12:45		399246-002



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 399246*

*Report Date: 13-DEC-10*  
*Date Received: 12/03/2010*

---

**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834654 TPH By SW8015 Mod

Batch: LBA-834760 BTEX by EPA 8021B  
SW8021BM

Batch 834760, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis  
Samples affected are: 399251-001 S.

Batch: LBA-834907 Anions by E300

Batch: LBA-834972 BTEX by EPA 8021B  
SW8021BM

Batch 834972, 1,4-Difluorobenzene recovered below QC limits Data confirmed by re-analysis.  
Samples affected are: 590647-1-BLK,399246-001. QC data not confirmed by re-analysis.



**Certificate of Analysis Summary 399246**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 am  
**Report Date:** 13-DEC-10  
**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399246-001	399246-002				
	<b>Field Id:</b>	VZ Cell 8 G-1	VZ Cell 8 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Dec-01-10 12:40	Dec-01-10 12:45				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 10:19	Dec-06-10 10:19				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		27.6 9.16	12.3 9.00				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Dec-07-10 13:50	Dec-06-10 14:00				
	<b>Analyzed:</b>	Dec-08-10 01:39	Dec-07-10 02:00				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		ND 0.0109	ND 0.0011				
Toluene		ND 0.0218	ND 0.0021				
Ethylbenzene		ND 0.0109	ND 0.0011				
m_p-Xylenes		ND 0.0218	ND 0.0021				
o-Xylene		ND 0.0109	ND 0.0011				
Total Xylenes		ND 0.0109	ND 0.0011				
Total BTEX		ND 0.0109	ND 0.0011				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 12:55	Dec-06-10 12:55				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		8.27 1.00	6.70 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-06-10 08:20	Dec-06-10 08:20				
	<b>Analyzed:</b>	Dec-06-10 13:57	Dec-06-10 14:15				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 16.3	ND 16.0				
C12-C28 Diesel Range Hydrocarbons		ND 16.3	ND 16.0				
C28-C35 Oil Range Hydrocarbons		ND 16.3	ND 16.0				
Total TPH		ND 16.3	ND 16.0				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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**Brent Barron, II**  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399246,

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 834760

Sample: 590531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BSL / BSL

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834760

Sample: 399251-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	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] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399246,

Project ID:

Lab Batch #: 834760

Sample: 399246-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 02:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 834972

Sample: 590647-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 834972

Sample: 590647-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 834972

Sample: 590647-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0224	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 834972

Sample: 399258-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	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: Southern Union Gas Landfarm

Work Orders : 399246,

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 399246-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 01:39

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0221	0.0300	74	80-120	**
4-Bromofluorobenzene	0.0281	0.0300	94	80-120	

Lab Batch #: 834654

Sample: 590471-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	37.9	50.2	75	70-135	

Lab Batch #: 834654

Sample: 590471-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.6	99.9	72	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 834654

Sample: 590471-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.4	100	71	70-135	
o-Terphenyl	35.5	50.1	71	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: Southern Union Gas Landfarm

Work Orders : 399246,

Project ID:

Lab Batch #: 834654

Sample: 399246-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 13:57

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.6	99.7	74	70-135	
o-Terphenyl	36.7	49.9	74	70-135	

Lab Batch #: 834654

Sample: 399246-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 14:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.0	99.7	73	70-135	
o-Terphenyl	36.2	49.9	73	70-135	

Lab Batch #: 834654

Sample: 399335-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.3	99.5	71	70-135	
o-Terphenyl	37.4	49.8	75	70-135	

Lab Batch #: 834654

Sample: 399335-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	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] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.



## BS / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399246

Analyst: SEE

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834760

Sample: 590531-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0924	92	0.1	0.0967	97	5	70-130	35	
Toluene	ND	0.1000	0.0858	86	0.1	0.0895	90	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0851	85	0.1	0.0891	89	5	71-129	35	
m_p-Xylenes	ND	0.2000	0.1750	88	0.2	0.1837	92	5	70-135	35	
o-Xylene	ND	0.1000	0.0851	85	0.1	0.0908	91	6	71-133	35	

Analyst: SEE

Date Prepared: 12/07/2010

Date Analyzed: 12/07/2010

Lab Batch ID: 834972

Sample: 590647-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1002	100	0.1	0.1036	104	3	70-130	35	
Toluene	ND	0.1000	0.0896	90	0.1	0.0903	90	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0874	87	0.1	0.0885	89	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1701	85	0.2	0.1713	86	1	70-135	35	
o-Xylene	ND	0.1000	0.0894	89	0.1	0.0900	90	1	71-133	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



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399246**

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834907**

**Sample: 834907-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
<b>Analytes</b>											
Chloride	ND	10.0	10.3	103	10	10.2	102	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834654**

**Sample: 590471-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	914	91	999	939	94	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	878	88	999	878	88	0	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: Southern Union Gas Landfarm



Work Order #: 399246

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A)/B$   
Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

- Below Reporting Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399246

Project ID:

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
Benzene	ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35	
Toluene	ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35	
Ethylbenzene	ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35	
m_p-Xylenes	ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35	
o-Xylene	ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	35	

Lab Batch ID: 834972

QC- Sample ID: 399258-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
Benzene	ND	0.1081	0.1024	95	0.1074	0.1046	97	2	70-130	35	
Toluene	ND	0.1081	0.0911	84	0.1074	0.0920	86	1	70-130	35	
Ethylbenzene	ND	0.1081	0.0899	83	0.1074	0.0912	85	1	71-129	35	
m_p-Xylenes	ND	0.2161	0.1736	80	0.2148	0.1770	82	2	70-135	35	
o-Xylene	ND	0.1081	0.0903	84	0.1074	0.0912	85	1	71-133	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



# Form 3 - MMSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399246

Project ID:

Lab Batch ID: 834654

QC- Sample ID: 399335-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1160	1050	91	1170	1050	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1160	948	82	1170	929	79	2	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: Southern Union Gas Landfarm**

**Work Order #: 399246**

**Lab Batch #: 834907**

**Date Analyzed: 12/06/2010 10:19**

**Date Prepared: 12/06/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399244-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 834594**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399244-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4 ~	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit



## 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:** Ben Arguljo

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Services Technologies, LLC**

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575)396-2378

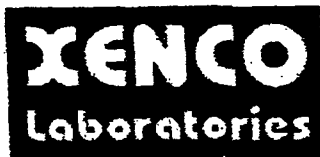
**Fax No: (575) 396-1429**

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: 

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399246  
Initials: AM

### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

**Analytical Report 399247**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**10-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

**Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)**

**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

**Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)**

**Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)**

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



10-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399247**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399247. 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. 399247 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399247



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 9 G-1	S	Dec-01-10 12:05		399247-001
VZ Cell 9 G-2	S	Dec-01-10 12:10		399247-002
VZ Cell 9 G-3	S	Dec-01-10 12:10		399247-003
VZ Cell 9 G-4	S	Dec-01-10 12:15		399247-004
VZ Cell 9 G-5	S	Dec-01-10 12:20		399247-005



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 399247*

*Report Date: 10-DEC-10*  
*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834654 TPH By SW8015 Mod

Batch: LBA-834760 BTEX by EPA 8021B  
SW8021BM

Batch 834760, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis  
Samples affected are: 399251-001 S.

Batch: LBA-834907 Anions by E300



# Certificate of Analysis Summary 399247

## Southern Union Gas Services- Monahans, Monahans, TX



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 10-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399247-001	399247-002	399247-003	399247-004	399247-005	
	<i>Field Id:</i>	VZ Cell 9 G-1	VZ Cell 9 G-2	VZ Cell 9 G-3	VZ Cell 9 G-4	VZ Cell 9 G-5	
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL	SOIL	
	<i>Sampled:</i>	Dec-01-10 12:05	Dec-01-10 12:10	Dec-01-10 12:10	Dec-01-10 12:15	Dec-01-10 12:20	
<b>Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 10:19	Dec-06-10 10:19	Dec-06-10 10:19	Dec-06-10 10:19	Dec-06-10 10:19	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Chloride		ND 9.77	18.3 9.06	9.90 9.36	10.1 4.36	ND 4.70	
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-06-10 14:00	Dec-06-10 14:00	Dec-06-10 14:00	Dec-06-10 14:00	Dec-06-10 14:00	
	<i>Analyzed:</i>	Dec-06-10 21:20	Dec-06-10 21:44	Dec-06-10 22:07	Dec-06-10 23:40	Dec-07-10 00:04	
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
Toluene		ND 0.0023	ND 0.0021	ND 0.0022	ND 0.0021	ND 0.0022	
Ethylbenzene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
m_p-Xylenes		ND 0.0023	ND 0.0021	ND 0.0022	ND 0.0021	ND 0.0022	
o-Xylene		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
Total Xylenes		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
Total BTEX		ND 0.0012	ND 0.0011	ND 0.0011	ND 0.0010	ND 0.0011	
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL	% RL	
Percent Moisture		14.0 1.00	7.32 1.00	10.3 1.00	3.57 1.00	10.6 1.00	
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 08:20	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	
	<i>Analyzed:</i>	Dec-06-10 14:33	Dec-06-10 15:12	Dec-06-10 15:30	Dec-06-10 15:48	Dec-06-10 16:07	
	<i>Units/RL:</i>	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 16.7	ND 15.5	ND 16.7	
C12-C28 Diesel Range Hydrocarbons		ND 17.5	ND 16.2	ND 16.7	ND 15.5	ND 16.7	
C28-C35 Oil Range Hydrocarbons		ND 17.5	ND 16.2	ND 16.7	ND 15.5	ND 16.7	
Total TPH		ND 17.5	ND 16.2	ND 16.7	ND 15.5	ND 16.7	

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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(813) 620-2000	(813) 620-2033
(305) 823-8500	(305) 823-8555
(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116





## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399247,

Project ID:

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 834760

Sample: 590531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834760

Sample: 399251-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	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: Southern Union Gas Landfarm

Work Orders : 399247,

Project ID:

Lab Batch #: 834760

Sample: 399247-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 21:20

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 834760

Sample: 399247-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 21:44

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 834760

Sample: 399247-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 22:07

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0318	0.0300	106	80-120	

Lab Batch #: 834760

Sample: 399247-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 23:40

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 834760

Sample: 399247-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:04

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0320	0.0300	107	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: Southern Union Gas Landfarm

Work Orders : 399247,

Project ID:

Lab Batch #: 834654

Sample: 590471-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	37.9	50.2	75	70-135	

Lab Batch #: 834654

Sample: 590471-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.6	99.9	72	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 834654

Sample: 590471-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.4	100	71	70-135	
o-Terphenyl	35.5	50.1	71	70-135	

Lab Batch #: 834654

Sample: 399247-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 14:33

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.2	100	73	70-135	
o-Terphenyl	36.5	50.1	73	70-135	

Lab Batch #: 834654

Sample: 399247-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 15:12

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.9	100	72	70-135	
o-Terphenyl	36.3	50.1	72	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$

All results are based on MDL and validated for QC purposes.

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399247,

Project ID:

Lab Batch #: 834654

Sample: 399247-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 15:30

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	77.5	100	78	70-135	
o-Terphenyl	38.9	50.1	78	70-135	

Lab Batch #: 834654

Sample: 399247-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 15:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.4	99.5	73	70-135	
o-Terphenyl	35.7	49.8	72	70-135	

Lab Batch #: 834654

Sample: 399247-005 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 16:07

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.8	99.5	72	70-135	
o-Terphenyl	36.4	49.8	73	70-135	

Lab Batch #: 834654

Sample: 399335-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.3	99.5	71	70-135	
o-Terphenyl	37.4	49.8	75	70-135	

Lab Batch #: 834654

Sample: 399335-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	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: Southern Union Gas Landfarm

Work Order #: 399247

Analyst: SEE

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834760

Sample: 590531-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0924	92	0.1	0.0967	97	5	70-130	35	
Toluene	ND	0.1000	0.0858	86	0.1	0.0895	90	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0851	85	0.1	0.0891	89	5	71-129	35	
m_p-Xylenes	ND	0.2000	0.1750	88	0.2	0.1837	92	5	70-135	35	
o-Xylene	ND	0.1000	0.0851	85	0.1	0.0908	91	6	71-133	35	

Analyst: LATCOR

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834907

Sample: 834907-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.3	103	10	10.2	102	1	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: Southern Union Gas Landfarm**

**Work Order #: 399247**

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834654**

**Sample: 590471-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	914	91	999	939	94	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	878	88	999	878	88	0	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: Southern Union Gas Landfarm

Work Order #: 399247

Lab Batch #: 834907

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399244-001 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	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A)/B$

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

ND - Below Reporting Limit



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399247

Project ID:

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
Benzene	ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35	
Toluene	ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35	
Ethylbenzene	ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35	
m_p-Xylenes	ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35	
o-Xylene	ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	35	

Lab Batch ID: 834654

QC- Sample ID: 399335-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1160	1050	91	1170	1050	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1160	948	82	1170	929	79	2	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot (C-F)/(C+F)$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

ND = Not Detected, I = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit





## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399247

Lab Batch #: 834907

Date Analyzed: 12/06/2010 10:19

QC- Sample ID: 399244-001 D

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 834594

Date Analyzed: 12/06/2010 12:55

QC- Sample ID: 399244-001 D

Reporting Units: %

Date Prepared: 12/06/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Spike Relative Difference  $RPD = 200 * |(B-A)/(B+A)|$   
All Results are based on MDL and validated for QC purposes.  
BRL - Below Reporting Limit

# 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:** Ben Arguijo

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378 Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:  e-mail: pm@basinenv.com

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

(lab use only)

ORDER #: 399247

[illegible]

**Special Instructions:**

**Laboratory Comments:**

**Sample Containers Intact?**  
**VOCs Free of Headspace?**

Labels on container(s)  
Custody seals on container(s)  
Custody seals on cooler(s)

**Sample Hand Delivered**

by Sampler/Client Rep. ?  
by Courier? ☐ UPS ☐ DHL ☒ FedEx ☐ Lone Star

Temperature Upon Receipt: 402 glass 0 °C

Relinquished by: 	Date	Time	Received by: 	Date	Time
--	------	------	--	------	------

Relinquished by: 	Date: 	Time: 	Received by: 	Date: 	Time: 
--	---	--	--	---	---

Relinquished by:	Date	Time	Received by ELOT:	Date	Time
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Mike Spear	4/3/10	1:45	Lisa Murdoch	12/3/10	1:45
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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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399247  
Initials: AM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

**Analytical Report 399248**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

**Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)**

**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

**Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)**

**Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)**

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399248**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399248. 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. 399248 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

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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## Sample Cross Reference 399248



**Southern Union Gas Services- Monahans, Monahans, TX**

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 10 G-1	S	Dec-01-10 12:25		399248-001
VZ Cell 10 G-2	S	Dec-01-10 12:25		399248-002
VZ Cell 10 G-3	S	Dec-01-10 12:30		399248-003
VZ Cell 10 G-4	S	Dec-01-10 12:30		399248-004



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399248*

*Report Date: 13-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834654 TPH By SW8015 Mod

Batch: LBA-834760 BTEX by EPA 8021B  
SW8021BM

Batch 834760, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis  
Samples affected are: 399251-001 S.

Batch: LBA-834907 Anions by E300

Batch: LBA-834972 BTEX by EPA 8021B  
SW8021BM

Batch 834972, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 590647-1-BLK,399248-001.



# Certificate of Analysis Summary 399248

## Southern Union Gas Services- Monahans, Monahans, TX



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<i>Analysis Requested</i>	<i>Lab Id:</i>	399248-001	399248-002	399248-003	399248-004		
	<i>Field Id:</i>	VZ Cell 10 G-1	VZ Cell 10 G-2	VZ Cell 10 G-3	VZ Cell 10 G-4		
	<i>Depth:</i>						
	<i>Matrix:</i>	SOIL	SOIL	SOIL	SOIL		
	<i>Sampled:</i>	Dec-01-10 12:25	Dec-01-10 12:25	Dec-01-10 12:30	Dec-01-10 12:30		
<b>- Anions by E300</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 10:19	Dec-06-10 10:19	Dec-06-10 10:19	Dec-06-10 10:19		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Chloride		14.7 9.14	35.3 9.33	22.3 8.94	ND 9.25		
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Dec-07-10 13:50	Dec-06-10 14:00	Dec-06-10 14:00	Dec-06-10 14:00		
	<i>Analyzed:</i>	Dec-08-10 03:25	Dec-06-10 20:10	Dec-06-10 20:34	Dec-06-10 20:57		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
Benzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
Toluene		ND 0.0022	ND 0.0022	ND 0.0021	ND 0.0022		
Ethylbenzene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
m_p-Xylenes		ND 0.0022	ND 0.0022	ND 0.0021	ND 0.0022		
o-Xylene		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
Total Xylenes		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
Total BTEX		ND 0.0011	ND 0.0011	ND 0.0011	ND 0.0011		
<b>Percent Moisture</b>	<i>Extracted:</i>						
	<i>Analyzed:</i>	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55	Dec-06-10 12:55		
	<i>Units/RL:</i>	% RL	% RL	% RL	% RL		
Percent Moisture		8.10 1.00	9.97 1.00	5.99 1.00	9.20 1.00		
<b>TPH By SW8015 Mod</b>	<i>Extracted:</i>	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00	Dec-06-10 10:00		
	<i>Analyzed:</i>	Dec-06-10 16:26	Dec-06-10 16:46	Dec-06-10 17:04	Dec-06-10 17:23		
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL		
C6-C12 Gasoline Range Hydrocarbons		ND 16.2	ND 16.7	ND 16.0	ND 16.5		
C12-C28 Diesel Range Hydrocarbons		ND 16.2	ND 16.7	ND 16.0	ND 16.5		
C28-C35 Oil Range Hydrocarbons		ND 16.2	ND 16.7	ND 16.0	ND 16.5		
Total TPH		ND 16.2	ND 16.7	ND 16.0	ND 16.5		

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
 Odessa Laboratory Manager



## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399248,

Project ID:

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 834760

Sample: 590531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834760

Sample: 399251-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	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: Southern Union Gas Landfarm

Work Orders : 399248,

Project ID:

Lab Batch #: 834760

Sample: 399248-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 20:10

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 834760

Sample: 399248-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 20:34

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 834760

Sample: 399248-004 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 20:57

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 834972

Sample: 590647-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 834972

Sample: 590647-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	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: Southern Union Gas Landfarm

Work Orders : 399248,

Project ID:

Lab Batch #: 834972

Sample: 590647-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0224	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 834972

Sample: 399258-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 399248-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 03:25

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0228	0.0300	76	80-120	*
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 834654

Sample: 590471-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	37.9	50.2	75	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] =  $100 \cdot A / B$

All results are based on MDL and validated for QC purposes.

## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399248,

Project ID:

Lab Batch #: 834654

Sample: 590471-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.6	99.9	72	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 834654

Sample: 590471-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.4	100	71	70-135	
o-Terphenyl	35.5	50.1	71	70-135	

Lab Batch #: 834654

Sample: 399248-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 16:26

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.5	99.5	73	70-135	
o-Terphenyl	35.9	49.8	72	70-135	

Lab Batch #: 834654

Sample: 399248-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 16:46

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.5	100	71	70-135	
o-Terphenyl	35.4	50.1	71	70-135	

Lab Batch #: 834654

Sample: 399248-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:04

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	73.1	100	73	70-135	
o-Terphenyl	36.5	50.1	73	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: Southern Union Gas Landfarm

Work Orders : 399248,

Lab Batch #: 834654

Sample: 399248-004 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:23

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	72.4	99.9	72	70-135	
o-Terphenyl	36.2	50.0	72	70-135	

Lab Batch #: 834654

Sample: 399335-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.3	99.5	71	70-135	
o-Terphenyl	37.4	49.8	75	70-135	

Lab Batch #: 834654

Sample: 399335-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	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: Southern Union Gas Landfarm**

**Work Order #: 399248**

**Analyst: SEE**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834760**

**Sample: 590531-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0924	92	0.1	0.0967	97	5	70-130	35	
Toluene	ND	0.1000	0.0858	86	0.1	0.0895	90	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0851	85	0.1	0.0891	89	5	71-129	35	
m_p-Xylenes	ND	0.2000	0.1750	88	0.2	0.1837	92	5	70-135	35	
o-Xylene	ND	0.1000	0.0851	85	0.1	0.0908	91	6	71-133	35	

**Analyst: SEE**

**Date Prepared: 12/07/2010**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834972**

**Sample: 590647-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1002	100	0.1	0.1036	104	3	70-130	35	
Toluene	ND	0.1000	0.0896	90	0.1	0.0903	90	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0874	87	0.1	0.0885	89	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1701	85	0.2	0.1713	86	1	70-135	35	
o-Xylene	ND	0.1000	0.0894	89	0.1	0.0900	90	1	71-133	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



## BS / BSD Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399248**

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834907**

**Sample: 834907-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	10.3	103	10	10.2	102	1	75-125	20	

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834654**

**Sample: 590471-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	914	91	999	939	94	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	878	88	999	878	88	0	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: Southern Union Gas Landfarm



Work Order #: 399248

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399248

Project ID:

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35	
Toluene	ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35	
Ethylbenzene	ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35	
m_p-Xylenes	ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35	
o-Xylene	ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	35	

Lab Batch ID: 834972

QC- Sample ID: 399258-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1081	0.1024	95	0.1074	0.1046	97	2	70-130	35	
Toluene	ND	0.1081	0.0911	84	0.1074	0.0920	86	1	70-130	35	
Ethylbenzene	ND	0.1081	0.0899	83	0.1074	0.0912	85	1	71-129	35	
m_p-Xylenes	ND	0.2161	0.1736	80	0.2148	0.1770	82	2	70-135	35	
o-Xylene	ND	0.1081	0.0903	84	0.1074	0.0912	85	1	71-133	35	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

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



## Form 3 - MS / MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399248

Project ID:

Lab Batch ID: 834654

QC- Sample ID: 399335-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
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
C6-C12 Gasoline Range Hydrocarbons	ND	1160	1050	91	1170	1050	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1160	948	82	1170	929	79	2	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: Southern Union Gas Landfarm

Work Order #: 399248

Lab Batch #: 834907

Date Analyzed: 12/06/2010 10:19

QC- Sample ID: 399244-001 D

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 834594

Date Analyzed: 12/06/2010 12:55

QC- Sample ID: 399244-001 D

Reporting Units: %

Date Prepared: 12/06/2010

Batch #: 1

Analyst: JLG

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

# 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: Ben Arguijo

Project Name: Southern Union Gas Landfarm

Company Name: Basin Environmental Services Technologies, LLC

Project #: \_\_\_\_\_

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2376

Fax No: (505) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature: [Signature]

e-mail: pm@basinenv.com

(lab use only)

ORDER #: 399248

ORDER #:		374248																																	
LAB # (lab use only)	FIELD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total # of Containers	Preservation & # of Containers										Matrix																	
								Ice	HNO <sub>3</sub>	HCl	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW - Drinking Water SL - Sludge	GW - Groundwater S - Soil/Soil	NP - Non-Potable Specify Other	TPH: 418.1	8015B	TPH: TX 1005	TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO <sub>4</sub> , Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.M.	CI- E300	RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY	
1	VZ Cell 10 G-1			12/1/10	1225		1	X								SOIL	X															X			
2	VZ Cell 10 G-2			12/1/10	1225		1	X								SOIL	X															X			
3	VZ Cell 10 G-3			12/1/10	1230		1	X								SOIL	X															X			
4	VZ Cell 10 G-4			12/1/10	1230		1	X								SOIL	X															X			

### Special Instructions:

Relinquished by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>0900</u>	Received by: <u>Mik Aug</u>	Date: <u>12/3/10</u>	Time: <u>9:00</u>
Relinquished by: <u>[Signature]</u>	Date: <u>12/3/10</u>	Time: <u>1:45</u>	Received by: <u>Nina Murdoch</u>	Date: <u>12/3/10</u>	Time: <u>1:45</u>

### Laboratory Comments:

Sample Containers Intact? Y  
VOCs Free of Headspace? Y  
Labels on container(s) Y  
Custody seals on container(s) Y  
Custody seals on cooler(s) Y  
Sample Hand Delivered by Sampler/Client Rep.? Y  
by Courier? UPS DHL FedEx Lone Star  
Temperature Upon Receipt: 402 glass 0 °C



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: Beta Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399248  
Initials: AM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

**Analytical Report 399255**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

**Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)**

**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

**Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)**

**Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)**

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399255**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399255. 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. 399255 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

**Brent Barron, II**

Odessa Laboratory Manager

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*Certified and approved by numerous States and Agencies.*

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## Sample Cross Reference 399255



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 11 G-1	S	Dec-01-10 13:10		399255-001
VZ Cell 11 G-2	S	Dec-01-10 13:15		399255-002



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399255*

*Report Date: 13-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834726 TPH By SW8015 Mod



# Certificate of Analysis Summary 399255

## Southern Union Gas Services- Monahans, Monahans, TX



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399255-001	399255-002				
	<b>Field Id:</b>	VZ Cell 11 G-1	VZ Cell 11 G-2				
	<b>Depth:</b>						
	<b>Matrix:</b>	SOIL	SOIL				
	<b>Sampled:</b>	Dec-01-10 13:10	Dec-01-10 13:15				
<b>Anions by E300</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 16:02	Dec-06-10 16:02				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Chloride		31.1 9.17	24.7 4.63				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Dec-07-10 15:00	Dec-07-10 15:00				
	<b>Analyzed:</b>	Dec-07-10 17:55	Dec-08-10 04:41				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
Benzene		ND 0.0011	ND 0.0011				
Toluene		ND 0.0022	ND 0.0022				
Ethylbenzene		ND 0.0011	ND 0.0011				
m p-Xylenes		ND 0.0022	ND 0.0022				
o-Xylene		ND 0.0011	ND 0.0011				
Total Xylenes		ND 0.0011	ND 0.0011				
Total BTEX		ND 0.0011	ND 0.0011				
<b>Percent Moisture</b>	<b>Extracted:</b>						
	<b>Analyzed:</b>	Dec-06-10 12:55	Dec-06-10 12:55				
	<b>Units/RL:</b>	% RL	% RL				
Percent Moisture		8.39 1.00	9.35 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-06-10 10:00	Dec-06-10 10:00				
	<b>Analyzed:</b>	Dec-06-10 18:11	Dec-06-10 18:41				
	<b>Units/RL:</b>	mg/kg RL	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 16.3	ND 16.5				
C12-C28 Diesel Range Hydrocarbons		ND 16.3	ND 16.5				
C28-C35 Oil Range Hydrocarbons		ND 16.3	ND 16.5				
Total TPH		ND 16.3	ND 16.5				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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**Brent Barron, II**  
 Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit

**PQL** Practical Quantitation Limit

\* Outside XENCO's scope of NELAC Accreditation.

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399255,

Lab Batch #: 834940

Sample: 590617-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 15:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0328	0.0300	109	80-120	

Lab Batch #: 834940

Sample: 590617-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:23

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0301	0.0300	100	80-120	
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	

Lab Batch #: 834940

Sample: 590617-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0267	0.0300	89	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 834940

Sample: 399255-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 17:55

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0270	0.0300	90	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 834940

Sample: 399255-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:19

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0349	0.0300	116	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: Southern Union Gas Landfarm

Work Orders : 399255,

Project ID:

Lab Batch #: 834940

Sample: 399255-001 SD / MSD

Batch: 1<sup>3</sup> Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:42

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0343	0.0300	114	80-120	

Lab Batch #: 834940

Sample: 399255-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 04:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 12:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	44.6	50.2	89	70-135	

Lab Batch #: 834726

Sample: 590506-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 834726

Sample: 590506-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	44.8	50.1	89	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: Southern Union Gas Landfarm

Work Orders : 399255,

Lab Batch #: 834726

Sample: 399255-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:11

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	80.4	99.8	81	70-135	
o-Terphenyl	39.4	49.9	79	70-135	

Lab Batch #: 834726

Sample: 399255-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:41

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.2	99.7	94	70-135	
o-Terphenyl	45.2	49.9	91	70-135	

Lab Batch #: 834726

Sample: 399258-005 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

Lab Batch #: 834726

Sample: 399258-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 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	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	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: Southern Union Gas Landfarm**

**Work Order #: 399255**

**Analyst: SEE**

**Date Prepared: 12/07/2010**

**Project ID:**

**Date Analyzed: 12/07/2010**

**Lab Batch ID: 834940**

**Sample: 590617-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.0965	97	0.1	0.0922	92	5	70-130	35	
Toluene	ND	0.1000	0.0895	90	0.1	0.0861	86	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0888	89	0.1	0.0864	86	3	71-129	35	
m_p-Xylenes	ND	0.2000	0.1826	91	0.2	0.1779	89	3	70-135	35	
o-Xylene	ND	0.1000	0.0893	89	0.1	0.0880	88	1	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834914**

**Sample: 834914-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Anions by E300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	ND	10.0	10.5	105	10	10.3	103	2	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 / BSL Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399255**

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834726**

**Sample: 590506-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	840	84	999	889	89	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	854	85	999	917	92	7	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: Southern Union Gas Landfarm



Work Order #: 399255

Lab Batch #: 834914

Date Analyzed: 12/06/2010

QC- Sample ID: 399253-003 S

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	221	202	91	75-125	

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A)/B$

Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399255

Project ID:

Lab Batch ID: 834940

QC- Sample ID: 399255-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1092	0.0910	83	0.1092	0.0975	89	7	70-130	35	
Toluene	ND	0.1092	0.0861	79	0.1092	0.0913	84	6	70-130	35	
Ethylbenzene	ND	0.1092	0.0875	80	0.1092	0.0910	83	4	71-129	35	
m_p-Xylenes	ND	0.2183	0.1864	85	0.2183	0.1885	86	1	70-135	35	
o-Xylene	ND	0.1092	0.0909	83	0.1092	0.0916	84	1	71-133	35	

Lab Batch ID: 834726

QC- Sample ID: 399258-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1040	874	84	1040	956	92	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	891	86	1040	983	95	10	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399255**

**Lab Batch #: 834914**

**Date Analyzed: 12/06/2010 16:02**

**Date Prepared: 12/06/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399253-003 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 834602**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399253-003 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	9.60	10.8	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**  
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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399255  
Initials: YM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

**Analytical Report 399249**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

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Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

**Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)**

**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

**Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)**

**Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)**

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**Xenco-Boca Raton (EPA Lab Code: FL01273):**

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)  
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**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399249**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399249. 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. 399249 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399249



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 12 G-1	S	Dec-01-10 13:25		399249-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399249*

*Report Date: 13-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834654 TPH By SW8015 Mod

Batch: LBA-834760 BTEX by EPA 8021B  
SW8021BM

Batch 834760, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits . Matrix interferences is suspected; data not confirmed by re-analysis  
Samples affected are: 399251-001 S.

Batch: LBA-834907 Anions by E300



**Certificate of Analysis Summary 399249**  
**Southern Union Gas Services- Monahans, Monahans, TX**  
**Project Name: Southern Union Gas Landfarm**



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Date Received in Lab:** Fri Dec-03-10 01:45 pm

**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399249-001 <b>Field Id:</b> VZ Cell 12 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 13:25					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 10:19 <b>Units/RL:</b> mg/kg RL					
Chloride	19.6 9.18					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b> Dec-06-10 14:00 <b>Analyzed:</b> Dec-06-10 19:24 <b>Units/RL:</b> mg/kg RL					
Benzene	ND 0.0011					
Toluene	ND 0.0022					
Ethylbenzene	ND 0.0011					
m p-Xylenes	ND 0.0022					
o-Xylene	ND 0.0011					
Total Xylenes	ND 0.0011					
Total BTEX	ND 0.0011					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 12:55 <b>Units/RL:</b> % RL					
Percent Moisture	8.50 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 10:00 <b>Analyzed:</b> Dec-06-10 17:43 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 16.4					
C12-C28 Diesel Range Hydrocarbons	ND 16.4					
C28-C35 Oil Range Hydrocarbons	ND 16.4					
Total TPH	ND 16.4					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.  
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.  
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.  
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399249,

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 834760

Sample: 590531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834760

Sample: 399251-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene	0.0132	0.0300	44	80-120	*

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	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: Southern Union Gas Landfarm

Work Orders : 399249,

Project ID:

Lab Batch #: 834760

Sample: 399249-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 19:24

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0268	0.0300	89	80-120	
4-Bromofluorobenzene	0.0319	0.0300	106	80-120	

Lab Batch #: 834654

Sample: 590471-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	37.9	50.2	75	70-135	

Lab Batch #: 834654

Sample: 590471-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.6	99.9	72	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 834654

Sample: 590471-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.4	100	71	70-135	
o-Terphenyl	35.5	50.1	71	70-135	

Lab Batch #: 834654

Sample: 399249-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:43

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	36.2	50.1	72	70-135	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 \times A / B$

All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399249,

Lab Batch #: 834654

Sample: 399335-001 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.3	99.5	71	70-135	
o-Terphenyl	37.4	49.8	75	70-135	

Lab Batch #: 834654

Sample: 399335-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	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: Southern Union Gas Landfarm

Work Order #: 399249

Analyst: SEE

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834760

Sample: 590531-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.0924	92	0.1	0.0967	97	5	70-130	35	
Toluene	ND	0.1000	0.0858	86	0.1	0.0895	90	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0851	85	0.1	0.0891	89	5	71-129	35	
m_p-Xylenes	ND	0.2000	0.1750	88	0.2	0.1837	92	5	70-135	35	
o-Xylene	ND	0.1000	0.0851	85	0.1	0.0908	91	6	71-133	35	

Analyst: LATCOR

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834907

Sample: 834907-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.3	103	10	10.2	102	1	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 / BSL Recoveries



**Project Name:** Southern Union Gas Landfarm

**Work Order #:** 399249

**Analyst:** BEV

**Date Prepared:** 12/06/2010

**Project ID:**

**Date Analyzed:** 12/06/2010

**Lab Batch ID:** 834654

**Sample:** 590471-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
<b>Analytes</b>											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	914	91	999	939	94	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	878	88	999	878	88	0	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: Southern Union Gas Landfarm

Work Order #: 399249

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Reporting Units: mg/kg

Project ID:

Analyst: LATCOR

Date Prepared: 12/06/2010

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399249

Project ID:

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35	
Toluene	ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35	
Ethylbenzene	ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35	
m_p-Xylenes	ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35	
o-Xylene	ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	35	

Lab Batch ID: 834654

QC- Sample ID: 399335-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1160	1050	91	1170	1050	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1160	948	82	1170	929	79	2	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 399249

Lab Batch #: 834907

Date Analyzed: 12/06/2010 10:19

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399244-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

Lab Batch #: 834594

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399244-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

# 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:** Ben Arguljo

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies

Project #:

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378 Fax No: (505) 396-1429

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:  e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 394249  
Initials: AM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply: ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.  
☐ Initial and Backup Temperature confirm out of temperature conditions  
☐ Client understands and would like to proceed with analysis

**Analytical Report 399250**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

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Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

**Xenco-Atlanta (EPA Lab Code: GA00046):**

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

**Xenco-Miami (EPA Lab code: FL01152):** Florida (E86678), Maryland (330)

**Xenco-Tampa Mobile (EPA Lab code: FL01212):** Florida (E84900)

**Xenco-Odessa (EPA Lab code: TX00158):** Texas (T104704400-TX)

**Xenco-Dallas (EPA Lab code: TX01468):** Texas (T104704295-TX)

**Xenco-Corpus Christi (EPA Lab code: TX02613):** Texas (T104704370)

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**Xenco Phoenix (EPA Lab Code: AZ00901):**

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901):** Arizona (AZM757)

**Xenco Tucson (EPA Lab code:AZ000989):** Arizona (AZ0758)



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399250**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399250. 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. 399250 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399250



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 13 G-1	S	Dec-01-10 13:30		399250-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*  
*Project Name: Southern Union Gas Landfarm*



*Project ID:*  
*Work Order Number: 399250*

*Report Date: 13-DEC-10*  
*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834654 TPH By SW8015 Mod

Batch: LBA-834972 BTEX by EPA 8021B  
SW8021BM

Batch 834972, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 590647-1-BLK, 399250-001.



**Certificate of Analysis Summary 399250**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b>	399250-001				
	<b>Field Id:</b>	VZ Cell 13 G-1				
	<b>Depth:</b>					
	<b>Matrix:</b>	SOIL				
	<b>Sampled:</b>	Dec-01-10 13:30				
<b>Anions by E300</b>	<b>Extracted:</b>					
	<b>Analyzed:</b>	Dec-06-10 10:19				
	<b>Units/RL:</b>	mg/kg RL				
Chloride		72.9 8.78				
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b>	Dec-07-10 13:50				
	<b>Analyzed:</b>	Dec-08-10 04:08				
	<b>Units/RL:</b>	mg/kg RL				
Benzene		ND 0.0010				
Toluene		ND 0.0021				
Ethylbenzene		ND 0.0010				
m_p-Xylenes		ND 0.0021				
o-Xylene		ND 0.0010				
Total Xylenes		ND 0.0010				
Total BTEX		ND 0.0010				
<b>Percent Moisture</b>	<b>Extracted:</b>					
	<b>Analyzed:</b>	Dec-06-10 12:55				
	<b>Units/RL:</b>	% RL				
Percent Moisture		4.31 1.00				
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b>	Dec-06-10 10:00				
	<b>Analyzed:</b>	Dec-06-10 18:02				
	<b>Units/RL:</b>	mg/kg RL				
C6-C12 Gasoline Range Hydrocarbons		ND 15.7				
C12-C28 Diesel Range Hydrocarbons		ND 15.7				
C28-C35 Oil Range Hydrocarbons		ND 15.7				
Total TPH		ND 15.7				

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.  
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.  
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.  
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

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Brent Barron, II  
Odessa Laboratory Manager

## Flagging Criteria

- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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(432) 563-1800	(432) 563-1713
(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399250,

Project ID:

Lab Batch #: 834972

Sample: 590647-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:00

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 834972

Sample: 590647-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 16:21

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0284	0.0300	95	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 834972

Sample: 590647-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/07/10 17:26

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0224	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 834972

Sample: 399258-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:09

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 18:30

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0320	0.0300	107	80-120	
4-Bromofluorobenzene	0.0314	0.0300	105	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] =  $100 * A / B$

A)) results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399250,

Project ID:

Lab Batch #: 834972

Sample: 399250-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/08/10 04:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0226	0.0300	75	80-120	*
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

Lab Batch #: 834654

Sample: 590471-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:51

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.7	100	72	70-135	
o-Terphenyl	37.9	50.2	75	70-135	

Lab Batch #: 834654

Sample: 590471-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:10

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.6	99.9	72	70-135	
o-Terphenyl	36.7	50.0	73	70-135	

Lab Batch #: 834654

Sample: 590471-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:28

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	71.4	100	71	70-135	
o-Terphenyl	35.5	50.1	71	70-135	

Lab Batch #: 834654

Sample: 399250-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:02

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	72.4	100	72	70-135	
o-Terphenyl	36.6	50.0	73	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: Southern Union Gas Landfarm

Work Orders : 399250,

Project ID:

Lab Batch #: 834654

Sample: 399335-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:21

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	70.3	99.5	71	70-135	
o-Terphenyl	37.4	49.8	75	70-135	

Lab Batch #: 834654

Sample: 399335-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:40

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	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: Southern Union Gas Landfarm

Work Order #: 399250

Analyst: SEE

Date Prepared: 12/07/2010

Project ID:

Date Analyzed: 12/07/2010

Lab Batch ID: 834972

Sample: 590647-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	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
Analytes											
Benzene	ND	0.1000	0.1002	100	0.1	0.1036	104	3	70-130	35	
Toluene	ND	0.1000	0.0896	90	0.1	0.0903	90	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0874	87	0.1	0.0885	89	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1701	85	0.2	0.1713	86	1	70-135	35	
o-Xylene	ND	0.1000	0.0894	89	0.1	0.0900	90	1	71-133	35	

Analyst: LATCOR

Date Prepared: 12/06/2010

Date Analyzed: 12/06/2010

Lab Batch ID: 834907

Sample: 834907-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300	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
Analytes											
Chloride	ND	10.0	10.3	103	10	10.2	102	1	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: Southern Union Gas Landfarm**

**Work Order #: 399250**

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834654**

**Sample: 590471-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	914	91	999	939	94	3	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	878	88	999	878	88	0	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: Southern Union Gas Landfarm



Work Order #: 399250

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Reporting Units: mg/kg

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - N MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399250

Project ID:

Lab Batch ID: 834972

QC- Sample ID: 399258-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1081	0.1024	95	0.1074	0.1046	97	2	70-130	35	
Toluene	ND	0.1081	0.0911	84	0.1074	0.0920	86	1	70-130	35	
Ethylbenzene	ND	0.1081	0.0899	83	0.1074	0.0912	85	1	71-129	35	
m_p-Xylenes	ND	0.2161	0.1736	80	0.2148	0.1770	82	2	70-135	35	
o-Xylene	ND	0.1081	0.0903	84	0.1074	0.0912	85	1	71-133	35	

Lab Batch ID: 834654

QC- Sample ID: 399335-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1160	1050	91	1170	1050	90	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1160	948	82	1170	929	79	2	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \cdot (C-A)/B$   
Relative Percent Difference  $RPD = 200 \cdot |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \cdot (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399250**

**Lab Batch #: 834907**

**Date Analyzed: 12/06/2010 10:19**

**Date Prepared: 12/06/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399244-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 834594**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399244-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Spike Relative Difference  $RPD = 200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

# 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: Ben Arguijo**

**Project Name: Southern Union Gas Landfarm**

**Company Name**      **Basin Environmental Services Technologies, LLC**

**Project #:**

**Company Address: P.O. Box 381**

**Project Loc: Lea County, NM**

City/State/Zip: Lovington, NM 88260

PO #: 91785

Telephone No: (575) 396-2378

Fax No: (575) 396-1429

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399250  
Initials: AM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

**Analytical Report 399251**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



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**12600 West I-20 East Odessa, Texas 79765**

**Xenco-Houston (EPA Lab code: TX00122):**

**Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)**  
**Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)**  
**New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)**  
**Rhode Island (LAO00312), USDA (S-44102)**

**Xenco-Atlanta (EPA Lab Code: GA00046):**

**Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALI1), West Virginia (362), Kentucky (85)**  
**Louisiana (04176), USDA (P330-07-00105)**

**Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)**

**Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)**

**Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)**

**Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)**

**Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)**

**Xenco-Boca Raton (EPA Lab Code: FL01273):**

**Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)**  
**North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)**

**Xenco Phoenix (EPA Lab Code: AZ00901):**

**Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)**

**Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)**

**Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)**



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399251**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399251. 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. 399251 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

---

**Brent Barron, II**

Odessa Laboratory Manager

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## Sample Cross Reference 399251



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 14 G-1	S	Dec-01-10 08:55		399251-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399251*

*Report Date: 13-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834726 TPH By SW8015 Mod

Batch: LBA-834760 BTEX by EPA 8021B  
SW8021BM

Batch 834760, 1,4-Difluorobenzene, 4-Bromofluorobenzene recovered below QC limits. Matrix interferences is suspected; data not confirmed by re-analysis  
Samples affected are: 399251-001 S.

Batch: LBA-834907 Anions by E300



**Certificate of Analysis Summary 399251**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**  
**Contact:** Rose Slade  
**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399251-001 <b>Field Id:</b> VZ Cell 14 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 08:55					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 10:19 <b>Units/RL:</b> mg/kg RL					
Chloride	ND 9.38					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b> Dec-06-10 14:00 <b>Analyzed:</b> Dec-06-10 17:27 <b>Units/RL:</b> mg/kg RL					
Benzene	ND 0.0011					
Toluene	ND 0.0022					
Ethylbenzene	ND 0.0011					
m_p-Xylenes	ND 0.0022					
o-Xylene	ND 0.0011					
Total Xylenes	ND 0.0011					
Total BTEX	ND 0.0011					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 12:55 <b>Units/RL:</b> % RL					
Percent Moisture	10.4 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 10:00 <b>Analyzed:</b> Dec-06-10 14:15 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 16.8					
C12-C28 Diesel Range Hydrocarbons	ND 16.8					
C28-C35 Oil Range Hydrocarbons	ND 16.8					
Total TPH	ND 16.8					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

  
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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399251,

Project ID:

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 15:08

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0326	0.0300	109	80-120	

Lab Batch #: 834760

Sample: 590531-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:18

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0306	0.0300	102	80-120	

Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 16:41

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834760

Sample: 399251-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:27

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0323	0.0300	108	80-120	

Lab Batch #: 834760

Sample: 399251-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 17:51

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene	0.0132	0.0300	44	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: Southern Union Gas Landfarm

Work Orders : 399251,

Project ID:

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 18:14

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0308	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 12:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	44.6	50.2	89	70-135	

Lab Batch #: 834726

Sample: 590506-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 834726

Sample: 590506-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	44.8	50.1	89	70-135	

Lab Batch #: 834726

Sample: 399251-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 14:15

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	49.6	50.1	99	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: Southern Union Gas Landfarm

Work Orders : 399251,

Lab Batch #: 834726

Sample: 399258-005 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

Lab Batch #: 834726

Sample: 399258-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 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	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	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: Southern Union Gas Landfarm**

**Work Order #: 399251**

**Analyst: SEE**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834760**

**Sample: 590531-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.0924	92	0.1	0.0967	97	5	70-130	35	
Toluene	ND	0.1000	0.0858	86	0.1	0.0895	90	4	70-130	35	
Ethylbenzene	ND	0.1000	0.0851	85	0.1	0.0891	89	5	71-129	35	
m_p-Xylenes	ND	0.2000	0.1750	88	0.2	0.1837	92	5	70-135	35	
o-Xylene	ND	0.1000	0.0851	85	0.1	0.0908	91	6	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834907**

**Sample: 834907-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Anions by E300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	ND	10.0	10.3	103	10	10.2	102	1	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 / BSB Recoveries



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399251**

**Analyst: BEV**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834726**

**Sample: 590506-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	840	84	999	889	89	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	854	85	999	917	92	7	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: Southern Union Gas Landfarm



Work Order #: 399251

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Date Prepared: 12/06/2010

Batch #: 1

Project ID:

Analyst: LATCOR

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \times (C-A)/B$

Relative Percent Difference [E] =  $200 \times (C-A)/(C+B)$

All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399251

Project ID:

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35	
Toluene	ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35	
Ethylbenzene	ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35	
m_p-Xylenes	ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35	
o-Xylene	ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	35	

Lab Batch ID: 834726

QC- Sample ID: 399258-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1040	874	84	1040	956	92	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	891	86	1040	983	95	10	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 Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399251**

**Lab Batch #: 834907**

**Date Analyzed: 12/06/2010 10:19**

**Date Prepared: 12/06/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399244-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 834594**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399244-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

### SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Spike Relative Difference  $RPD = 200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

# 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: Ben Arguljo**

**Project Name: Southern Union Gas Landfarm**

**Company Name** Basin Environmental Services Technologies, LLC

**Project #:**

Company Address: P.O. Box 301

Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378

**Fax No: (575) 396-1429**

**Report Format:** ☒ Standard ☐ TRRP ☐ NPDES

**Sampler Signature:**

e-mail: [pm@basinenv.com](mailto:pm@basinenv.com)

[illegible]



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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399251  
Initials: DM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

**Analytical Report 399252**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Rose Slade**  
**Southern Union Gas Landfarm**

**13-DEC-10**



**Celebrating 20 Years of commitment to excellence in Environmental Testing Services**



**12600 West I-20 East Odessa, Texas 79765**

Xenco-Houston (EPA Lab code: TX00122):

Texas (T104704215-10-6-TX), Arizona (AZ0738), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002)  
Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054)  
New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610)  
Rhode Island (LAO00312), USDA (S-44102)

Xenco-Atlanta (EPA Lab Code: GA00046):

Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AAL11), West Virginia (362), Kentucky (85)  
Louisiana (04176), USDA (P330-07-00105)

Xenco-Miami (EPA Lab code: FL01152): Florida (E86678), Maryland (330)

Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900)

Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)

Xenco-Corpus Christi (EPA Lab code: TX02613): Texas (T104704370)

Xenco-Boca Raton (EPA Lab Code: FL01273):

Florida(E86240),South Carolina(96031001), Louisiana(04154), Georgia(917)

North Carolina(444), Texas(T104704468-TX), Illinois(002295), Florida(E86349)

Xenco Phoenix (EPA Lab Code: AZ00901):

Arizona(AZ0757), California(06244CA), Texas(104704435-10-2), Nevada(NAC-445A), DoD(65816)

Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



13-DEC-10

Project Manager: **Rose Slade**  
**Southern Union Gas Services- Monahans**  
1507 W. 15th Street  
Monahans, TX 79756

Reference: XENCO Report No: **399252**  
**Southern Union Gas Landfarm**  
Project Address: Lea County, NM

**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 399252. 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. 399252 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

*Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.*

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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## Sample Cross Reference 399252



**Southern Union Gas Services- Monahans, Monahans, TX**  
Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
VZ Cell 15 G-1	S	Dec-01-10 13:05		399252-001



## CASE NARRATIVE

*Client Name: Southern Union Gas Services- Monahans*

*Project Name: Southern Union Gas Landfarm*



*Project ID:*

*Work Order Number: 399252*

*Report Date: 13-DEC-10*

*Date Received: 12/03/2010*

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**Sample receipt non conformances and Comments:**

None

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**Sample receipt Non Conformances and Comments per Sample:**

None

**Analytical Non Conformances and Comments:**

Batch: LBA-834653 BTEX by EPA 8021B  
SW8021BM

Batch 834653, 1,4-Difluorobenzene recovered below QC limits Data not confirmed by re-analysis. Samples affected are: 590469-1-BLK,399252-001.

Batch: LBA-834726 TPH By SW8015 Mod

Batch: LBA-834907 Anions by E300



**Certificate of Analysis Summary 399252**  
**Southern Union Gas Services- Monahans, Monahans, TX**



**Project Id:**

**Contact:** Rose Slade

**Project Location:** Lea County, NM

**Project Name:** Southern Union Gas Landfarm

**Date Received in Lab:** Fri Dec-03-10 01:45 pm


**Report Date:** 13-DEC-10

**Project Manager:** Brent Barron, II

<b>Analysis Requested</b>	<b>Lab Id:</b> 399252-001 <b>Field Id:</b> VZ Cell 15 G-1 <b>Depth:</b> <b>Matrix:</b> SOIL <b>Sampled:</b> Dec-01-10 13:05					
<b>Anions by E300</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 10:19 <b>Units/RL:</b> mg/kg RL					
Chloride	10.6 9.25					
<b>BTEX by EPA 8021B</b>	<b>Extracted:</b> Dec-06-10 08:30 <b>Analyzed:</b> Dec-06-10 20:11 <b>Units/RL:</b> mg/kg RL					
Benzene	ND 0.0011					
Toluene	ND 0.0022					
Ethylbenzene	ND 0.0011					
m_p-Xylenes	ND 0.0022					
o-Xylene	ND 0.0011					
Total Xylenes	ND 0.0011					
Total BTEX	ND 0.0011					
<b>Percent Moisture</b>	<b>Extracted:</b> <b>Analyzed:</b> Dec-06-10 12:55 <b>Units/RL:</b> % RL					
Percent Moisture	9.21 1.00					
<b>TPH By SW8015 Mod</b>	<b>Extracted:</b> Dec-06-10 10:00 <b>Analyzed:</b> Dec-06-10 14:43 <b>Units/RL:</b> mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons	ND 16.5					
C12-C28 Diesel Range Hydrocarbons	ND 16.5					
C28-C35 Oil Range Hydrocarbons	ND 16.5					
Total TPH	ND 16.5					

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use.  
The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories.  
XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented.  
Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

  
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 effect the recovery of the spike concentration. This condition could also effect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the MQL and above the SQL.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.
- BRL** Below Reporting Limit.
- RL** Reporting Limit
- MDL** Method Detection Limit
- PQL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

*A Small Business and Minority Status Company that delivers SERVICE and QUALITY*

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	Phone	Fax
4143 Greenbriar Dr, Stafford, Tx 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
5757 NW 158th St, Miami Lakes, FL 33014	(305) 823-8500	(305) 823-8555
12600 West I-20 East, Odessa, TX 79765	(432) 563-1800	(432) 563-1713
842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders : 399252,

Project ID:

Lab Batch #: 834653

Sample: 590469-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:06

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	
4-Bromofluorobenzene	0.0272	0.0300	91	80-120	

Lab Batch #: 834653

Sample: 590469-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 10:28

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 834653

Sample: 590469-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 11:32

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0214	0.0300	71	80-120	*
4-Bromofluorobenzene	0.0276	0.0300	92	80-120	

Lab Batch #: 834653

Sample: 399338-002 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 12:16

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0288	0.0300	96	80-120	
4-Bromofluorobenzene	0.0282	0.0300	94	80-120	

Lab Batch #: 834653

Sample: 399338-002 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 12:37

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	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: Southern Union Gas Landfarm

Work Orders : 399252,

Project ID:

Lab Batch #: 834653

Sample: 399252-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 20:11

### SURROGATE RECOVERY STUDY

BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1,4-Difluorobenzene	0.0210	0.0300	70	80-120	*
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 12:50

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	99.5	100	100	70-135	
o-Terphenyl	44.6	50.2	89	70-135	

Lab Batch #: 834726

Sample: 590506-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:19

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	100	99.9	100	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

Lab Batch #: 834726

Sample: 590506-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 12/06/10 13:48

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	44.8	50.1	89	70-135	

Lab Batch #: 834726

Sample: 399252-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 14:43

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	49.3	50.1	98	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: Southern Union Gas Landfarm

Work Orders : 399252,

Lab Batch #: 834726

Sample: 399258-005 S / MS

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 00:42

### SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	44.7	50.0	89	70-135	

Lab Batch #: 834726

Sample: 399258-005 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 12/07/10 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	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	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: Southern Union Gas Landfarm**

**Work Order #: 399252**

**Analyst: SEE**

**Date Prepared: 12/06/2010**

**Project ID:**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834653**

**Sample: 590469-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>BTEX by EPA 8021B</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Benzene	ND	0.1000	0.1079	108	0.1	0.1072	107	1	70-130	35	
Toluene	ND	0.1000	0.0938	94	0.1	0.0946	95	1	70-130	35	
Ethylbenzene	ND	0.1000	0.0936	94	0.1	0.0929	93	1	71-129	35	
m_p-Xylenes	ND	0.2000	0.1815	91	0.2	0.1807	90	0	70-135	35	
o-Xylene	ND	0.1000	0.0935	94	0.1	0.0919	92	2	71-133	35	

**Analyst: LATCOR**

**Date Prepared: 12/06/2010**

**Date Analyzed: 12/06/2010**

**Lab Batch ID: 834907**

**Sample: 834907-1-BKS**

**Batch #: 1**

**Matrix: Solid**

**Units: mg/kg**

### BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

<b>Anions by E300</b>	<b>Blank Sample Result [A]</b>	<b>Spike Added [B]</b>	<b>Blank Spike Result [C]</b>	<b>Blank Spike %R [D]</b>	<b>Spike Added [E]</b>	<b>Blank Spike Duplicate Result [F]</b>	<b>Blk. Spk Dup. %R [G]</b>	<b>RPD %</b>	<b>Control Limits %R</b>	<b>Control Limits %RPD</b>	<b>Flag</b>
<b>Analytes</b>											
Chloride	ND	10.0	10.3	103	10	10.2	102	1	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 / BSL Recoveries



**Project Name:** Southern Union Gas Landfarm

**Work Order #:** 399252

**Analyst:** BEV

**Date Prepared:** 12/06/2010

**Project ID:**

**Date Analyzed:** 12/06/2010

**Lab Batch ID:** 834726

**Sample:** 590506-1-BKS

**Batch #:** 1

**Matrix:** Solid

**Units:** mg/kg

### BLANK / BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod	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
Analytes											
C6-C12 Gasoline Range Hydrocarbons	ND	1000	840	84	999	889	89	6	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1000	854	85	999	917	92	7	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: Southern Union Gas Landfarm



Work Order #: 399252

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

MATRIX / MATRIX SPIKE RECOVERY STUDY						
Inorganic Anions by EPA 300	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Analytes						
Chloride	ND	212	212	100	75-125	

Matrix Spike Percent Recovery [D] =  $100 \cdot (C-A)/B$   
Relative Percent Difference [E] =  $200 \cdot (C-A)/(C+B)$   
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399252

Project ID:

Lab Batch ID: 834653

QC- Sample ID: 399338-002 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
Benzene	ND	0.1086	0.0871	80	0.1086	0.1079	99	21	70-130	35	
Toluene	ND	0.1086	0.0779	72	0.1086	0.0949	87	20	70-130	35	
Ethylbenzene	ND	0.1086	0.0783	72	0.1086	0.0933	86	17	71-129	35	
m_p-Xylenes	ND	0.2172	0.1560	72	0.2172	0.1824	84	16	70-135	35	
o-Xylene	ND	0.1086	0.0807	74	0.1086	0.0948	87	16	71-133	35	

Lab Batch ID: 834726

QC- Sample ID: 399258-005 S

Batch #: 1 Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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
C6-C12 Gasoline Range Hydrocarbons	ND	1040	874	84	1040	956	92	9	70-135	35	
C12-C28 Diesel Range Hydrocarbons	ND	1040	891	86	1040	983	95	10	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
N = See Narrative, EQL = Estimated Quantitation Limit



## Sample Duplicate Recovery



**Project Name: Southern Union Gas Landfarm**

**Work Order #: 399252**

**Lab Batch #: 834907**

**Date Analyzed: 12/06/2010 10:19**

**Date Prepared: 12/06/2010**

**Project ID:**

**Analyst: LATCOR**

**QC- Sample ID: 399244-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: mg/kg**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Chloride	ND	ND	NC	20	

**Lab Batch #: 834594**

**Date Analyzed: 12/06/2010 12:55**

**Date Prepared: 12/06/2010**

**Analyst: JLG**

**QC- Sample ID: 399244-001 D**

**Batch #: 1**

**Matrix: Soil**

**Reporting Units: %**

SAMPLE / SAMPLE DUPLICATE RECOVERY					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte					
Percent Moisture	5.58	5.83	4	20	

Spike Relative Difference RPD  $200 * |(B-A)/(B+A)|$

All Results are based on MDL and validated for QC purposes.

BRL - Below Reporting Limit

# 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:** Ben Arguljo

Project Name: Southern Union Gas Landfarm

**Company Name** Basin Environmental Services Technologies, LLC

Project #:

Company Address: P.O. Box 301

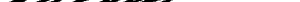
Project Loc: Lea County, NM

City/State/Zip: Lovington, NM 88260

PO #: 91787

Telephone No: (575) 396-2378 Fax No: (575) 396-1429

Report Format: ☒ Standard ☐ TRRP ☐ NPDES

Sampler Signature:  e-mail: [pm@basineny.com](mailto:pm@basineny.com)

e-mail: [pm@basineny.com](mailto:pm@basineny.com)

[illegible]



**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: Basin Environmental  
Date/Time: 12/3/10 1:45  
Lab ID #: 399252  
Initials: YM

#### Sample Receipt Checklist

1. Samples on ice?	Blue	<u>Water</u>	No	
2. Shipping container in good condition?	<u>Yes</u>	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	<u>Yes</u>	No	N/A	
4. Chain of Custody present?	<u>Yes</u>	No		
5. Sample instructions complete on chain of custody?	<u>Yes</u>	No		
6. Any missing / extra samples?	Yes	<u>No</u>		
7. Chain of custody signed when relinquished / received?	<u>Yes</u>	No		
8. Chain of custody agrees with sample label(s)?	<u>Yes</u>	No		
9. Container labels legible and intact?	<u>Yes</u>	No		
10. Sample matrix / properties agree with chain of custody?	<u>Yes</u>	No		
11. Samples in proper container / bottle?	<u>Yes</u>	No		
12. Samples properly preserved?	<u>Yes</u>	No	N/A	
13. Sample container intact?	<u>Yes</u>	No		
14. Sufficient sample amount for indicated test(s)?	<u>Yes</u>	No		
15. All samples received within sufficient hold time?	<u>Yes</u>	No		
16. Subcontract of sample(s)?	Yes	<u>No</u>	N/A	
17. VOC sample have zero head space?	Yes	No	<u>N/A</u>	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No.	Cooler 5 No.
lbs <u>0</u> °C	lbs °C	lbs °C	lbs °C	lbs °C

#### Nonconformance Documentation

Contact: \_\_\_\_\_ Contacted by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Regarding: \_\_\_\_\_

Corrective Action Taken: \_\_\_\_\_

- Check all that apply:
- ☐ Cooling process has begun shortly after sampling event and out of temperature condition acceptable by NELAC 5.5.8.3.1.a.1.
  - ☐ Initial and Backup Temperature confirm out of temperature conditions
  - ☐ Client understands and would like to proceed with analysis

# Photographs



Southern Union Landfarm Cell 1



Southern Union Landfarm Cell 2





Southern Union Landfarm Cell 3



Southern Union Landfarm Cell 4



Southern Union Landfarm Cell 5



Southern Union Landfarm Cell 6





Southern Union Landfarm Cell 7



Southern Union Landfarm Cell 8

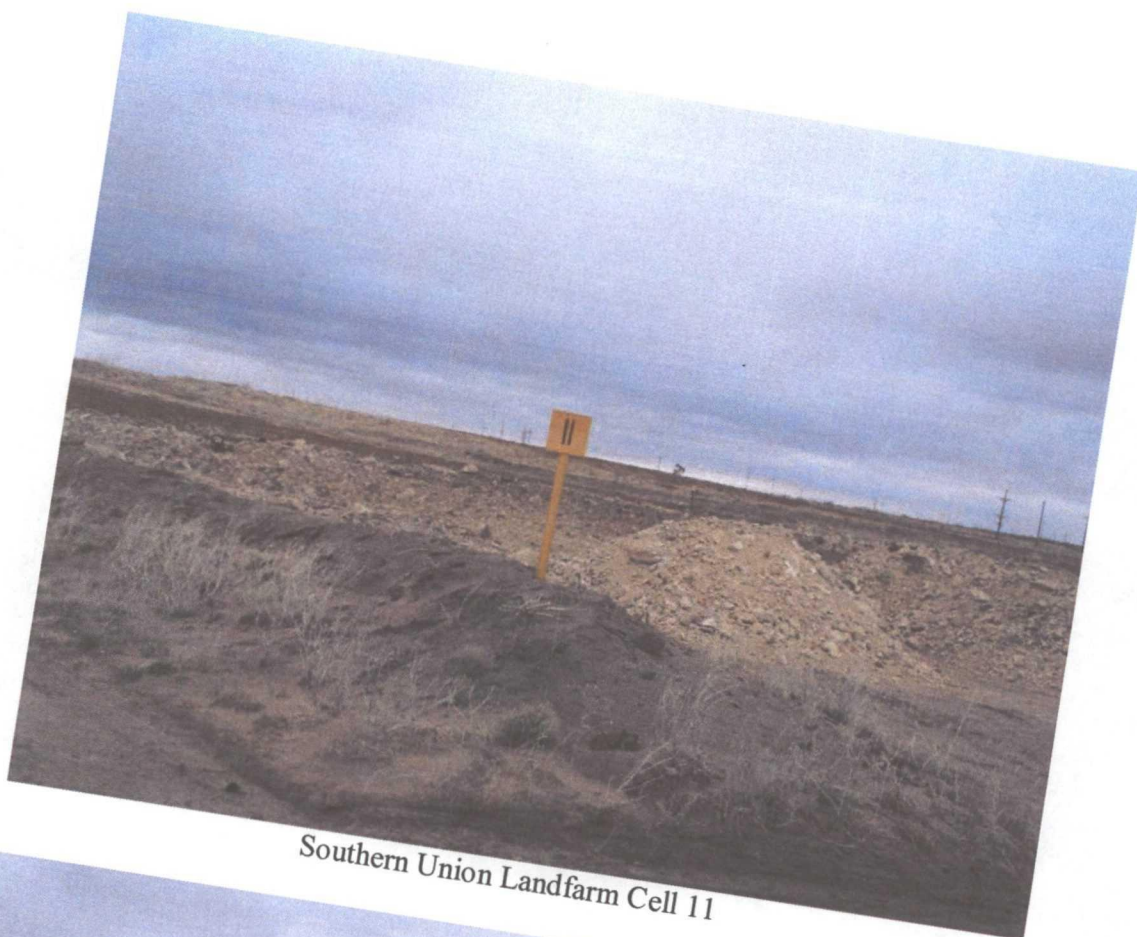


Southern Union Landfarm Cell 9

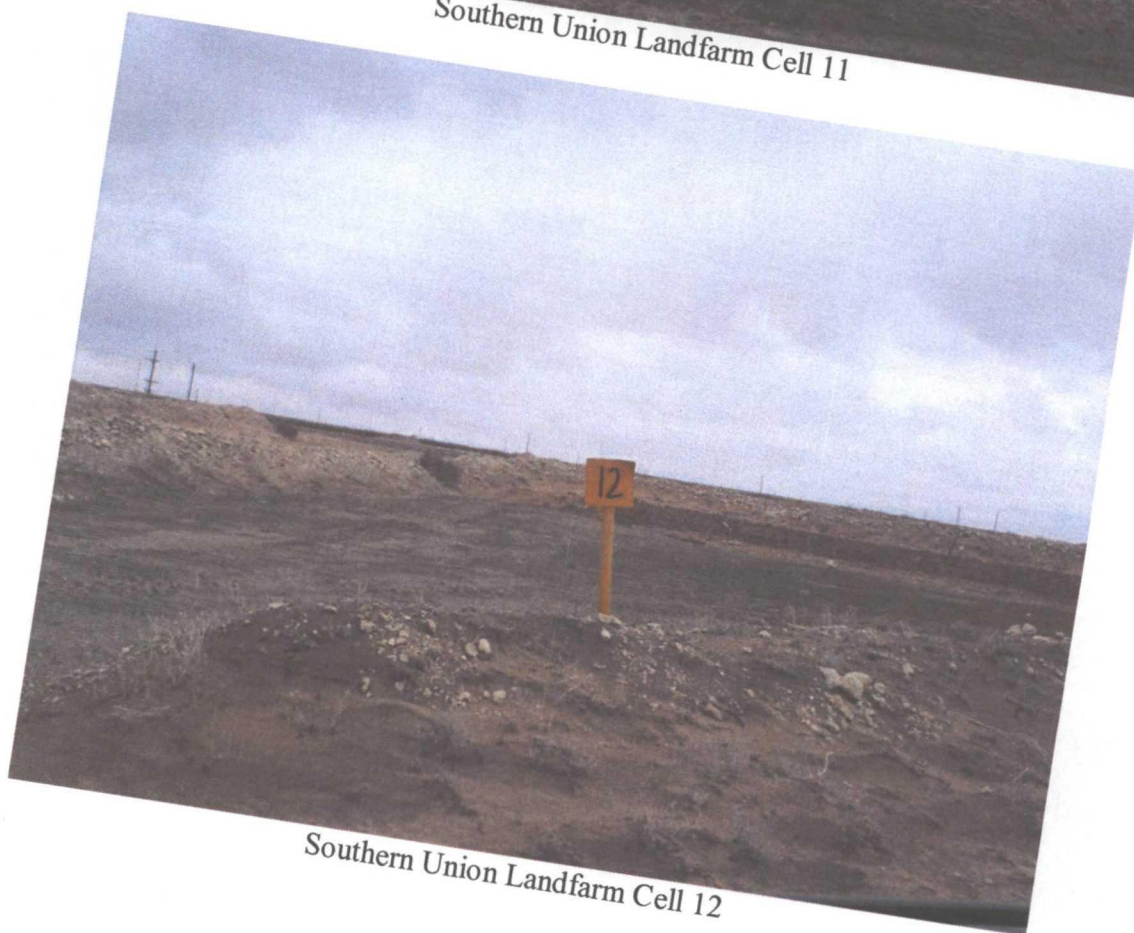


Southern Union Landfarm Cell 10





Southern Union Landfarm Cell 11



Southern Union Landfarm Cell 12



Southern Union Landfarm Cell 13



Southern Union Landfarm Cell 14





Southern Union Landfarm Cell 15