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

# MONITORING REPORTS YEAR(S):

\_\_\_2010\_\_\_



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 1/4 of the NW 1/4 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.

Respectfully submitted.

Curt D. Stanley

**EHS Compliance Specialist** 

Southern Union Gas Services, Ltd

801 S. Loop 464

Monahans, Texas 79756

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

Fax: (575) 396-1429 2011 FEB 28 FEFFective Solutions

# **Annual Report - 2010**

# SOUTHERN UNION GAS SERVICES

Southern Union Landfarm Lea County, New Mexico Permit # NM-02-0019

UNIT LTR "F" (SE 1/4 of the NW 1/4 ), 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

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 1/4 of the NW 1/4 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, bimonthly 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**

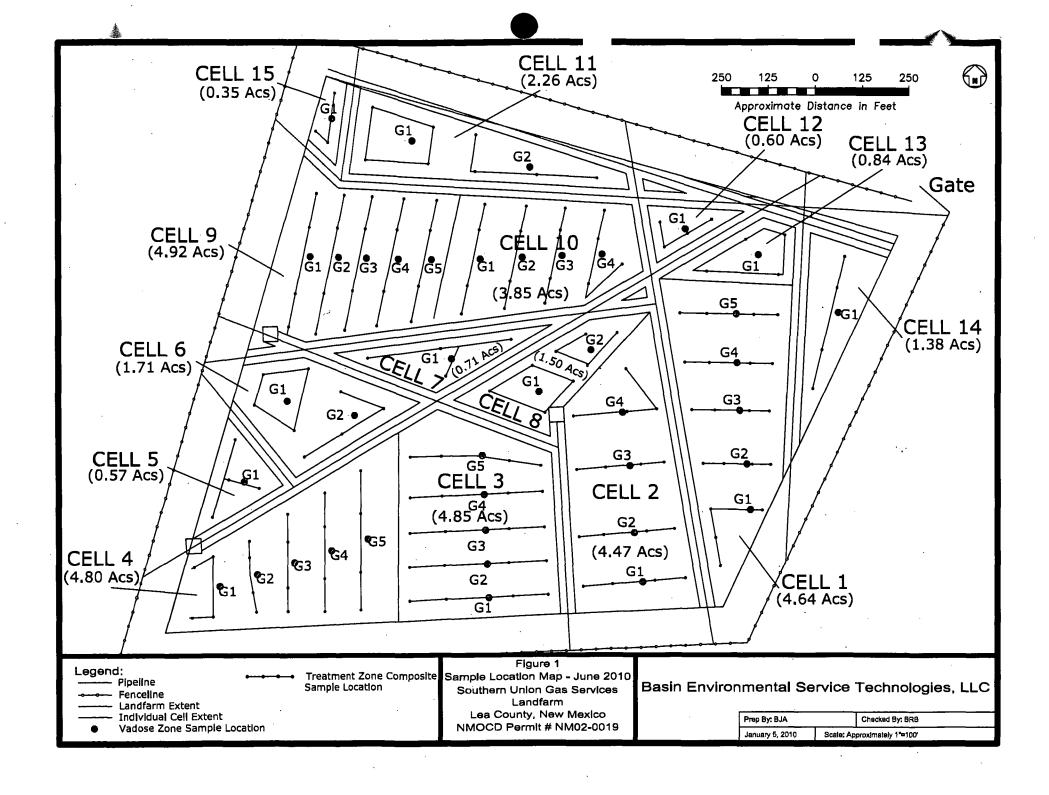
# **Photographs**

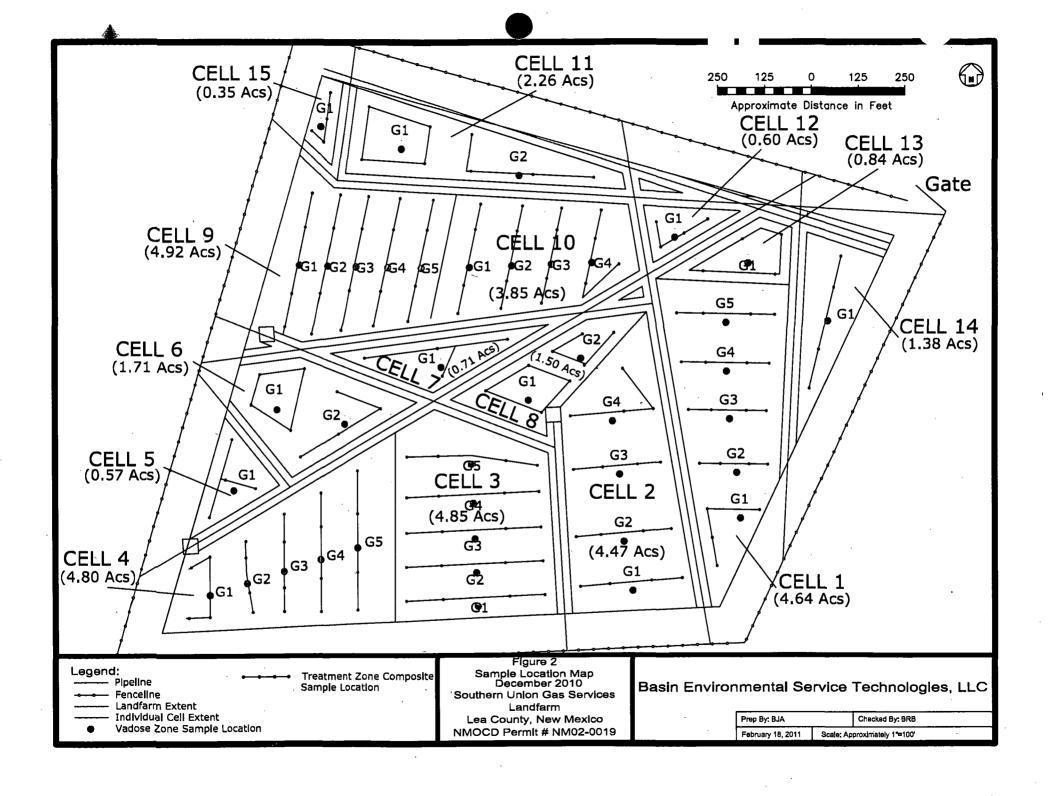
#### **LIMITATIONS**

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** 





**Tables** 

# TABLE 1 2010 CONCENTRATIONS OF TPH & CHLORIDE IN THE TREATMENT ZONE

			ME.	THOD: 8015	M	TOTAL	EPA 300
	SAMPLE	SAMPLE	GRO	DRO	ORO	TPH	
SAMPLE LOCATION	DEPTH	DATE	C <sub>6</sub> -C <sub>12</sub>	C <sub>12</sub> -C <sub>28</sub>	C <sub>28</sub> -C <sub>35</sub>	C <sub>6</sub> -C <sub>35</sub>	Chloride
	(bgs)		(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/kg)
T7 Call 4 C4		6/44/2040			· · · · · · · · · · · · · · · · · · ·		40.0
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
1 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/2 1/			4			.,***	
TZ Cell 2 G1	-	6/14/2010	<15.5	1220	189	1,409	24
TZ Cell 2 G2	<u>.</u>	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
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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
			23.5		10人不得機	State of the state	() [[] [[] []
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/
		*** ***		and the second	1.00		
TZ Cell 5 G1	-	6/14/2010	<15.4	73.1	29.4	102.5	12.5
				300	1 1 1 1	49	李遵子的 人
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
<b>的解除。"以神经</b>		<b>装</b> 门的"比层型		TOTAL ST	**************************************	<b>集型流影点</b>	
TZ Cell 7 G1	_	6/14/2010	<15.8	525	77.9	602.9	15.5
			F. 195	14 N 4 1	**	3.5	1978
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
		5. 特性人类的		Sign of the	本小规划	Marin Commit	
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
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# TABLE 1 2010 CONCENTRATIONS OF TPH & CHLORIDE IN THE TREATMENT ZONE

			ME.	THOD: 8015	М	TOTAL	EPA 300
	SAMPLE	SAMPLE	GRO	DRO	ORO	TPH	
SAMPLE LOCATION	DEPTH	DATE	C <sub>6</sub> -C <sub>12</sub>	C <sub>12</sub> -C <sub>28</sub>	C <sub>28</sub> -C <sub>35</sub>	C <sub>6</sub> -C <sub>35</sub>	Chloride
	(bgs)		(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(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
医异类磷酸物 被投资	4.000	985-2-3-5-5		77. 16. 3 h	1112 26		
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
			, , ,			d S. A.	
TZ Cell 12 G1	-	6/14/2010	<15.6	449	78.1	527.1	47.3
						9	
TZ Cell 13 G1	-	6/14/2010	<15.7	288	71.6	359.6	347
The state of the s				\$ B .		Also I	
TZ Cell 14 G1	-	6/14/2010	<16.9	48.4	<16.9	48.4	5.37
	4. 人名英森		2. 少二次的	W/ Asset	<b>2000</b>	**********	1912 1919
TZ Cell 15 G1	-	6/14/2010	<16.2	209	82.2	291	79.7
	1.6. TEST			**************************************	7. 7. 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
	17.38.39A	WALL TO STATE	STATE OF THE STATE		A. Colon	MARK C	The second second
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	1	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
		\$			1. 3		200
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
はいの構造されたと	SHOP TO	EMP A SERVE		ed to the end of the	5.世史教育	A CONTRACT	
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
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TZ Cell 5 G-1		12/1/2010	<15.1	143	51.6	194.6	<4.26
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TABLE 1
2010 CONCENTRATIONS OF TPH & CHLORIDE IN THE TREATMENT ZONE

			ME	THOD: 8015	M	TOTAL	EPA 300
SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	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)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	Chloride (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
	W. 1979	j.					
TZ Cell 7 G-1		12/1/2010	<15.8	166	16.2	182.2	5.69
発発する。これでも必	生,1963年	1 1 2 m			The Carlo	100	
TZ Cell 8 G-2		12/1/2010	<15.5	556	41.1	597.1	24.3
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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
· · · · · · · · · · · · · · · · · · ·						Service and the service and th	
TZ Cell 10 G-1		12/1/2010	<15.2	643	76.3	719.3	<4.25
TZ Cell 10 G-2	I	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
EN THAT IN THE		<b>基础。"生成</b> "		<b>"特别"的</b>	19/19/19		
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
							5.70
TZ Cell 12 G-1		12/1/2010	<15.6	374	42.4	416.4	<43.5
Service of the servic	A CONTRACTOR		Carlo Andrews	333 T.	392		
TZ Cell 13 G-1		12/1/2010	<15.9	185	16.2	201.2	425
				14 (20) 3.8			
TZ Cell 14 G-1	1	12/1/2010	<15.3	127	15.6	142.6	<4.27
The second secon	1961 1961 1961		Version 1			j. 4 1 1 1	origination to
TZ Cell 15 G-1		12/1/2010	<15.7	218	29.7	247.7	26.2
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# TABLE 2 HISTORIC CONCENTRATIONS OF HYDROCARBONS, CHLORIDES, SULFATES & 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
	1 12 12 12 12 12 12 12 12 12 12 12 12 12		<b>强激验</b>				8. 5	A TOTAL			L. M. William	

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
Total	a hand all a									

# TABLE 3

# HISTORIC CONCENTRATIONS OF METALS IN THE VADOSE ZONE

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

SAMPLE LOCATION	SAMPLE DEPTH (bgs)	SAMPLE DATE	SILVER (mg/Kg)	ARSENIC (mg/Kg)	BARIUM (mg/Kg)	CADMIUM (mg/Kg)	CHROMIUM (mg/Kg)	MERCURY (mg/Kg)	LEAD (mg/Kg)	SELENIUM (mg/Kg)
Landfarm Background	2' bgs	4/11/2001	ND	0.923	47.92	0.3605	4.21	ND	ND	1.959
		4	\$ ************************************	34. K. 1. 1. 1.	194	1 3 3	40000000000000000000000000000000000000	Balain (A)	and solution of	, r.

TABLE 4
2010 CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN THE VADOSE ZONE

	CAMPLE			MET	HOD: EPA SV	V 846-8021B,	5030		ME	THOD: 8015	M	TOTAL	EPA 300
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)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	Chloride .(mg/kg)
A STATE OF THE STA	27.	7.7			147.15		* *		No.	\$4.7°	in the standard	1 m	A CASE
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
<b>区内以及环境</b> 点及 4.1	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	しられた 不発賞	( <b>秦</b> 代:17]。		W. W.	12-14/46经少			、マススを維	2865 A. J. J. J.	Charlet Me	翻稿件 点	1. 大阪の変
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
1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A 1 A		7 5 4 4 4 .		1997 (1997) 1997 (1997)	55 5 11	4.	1 1	33.	4.5				
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
	The state of the s		7				1.4	1 2 1 2	6. 2.	1.0		N	الْحُ سِيَ
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
	7.5	11.64.7	1	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	13.4				-		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3.	1.565%
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
			2.4	1 - 1 - 2	1			100		ر فيوم	. hg <sup>2</sup>		1 8 3 3 3
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
CONTRACTOR OF THE	ME SALAR TON	Y) A SOLE	Part of the	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	e programme de la companya de la com	· 1000	in gray		244	State of the	1 3 Mes 4 V	K	BUSINESS OF THE SECOND
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
1000000	A STATE OF THE STA	a feet	West in	The state of the s	1 To 1 To 1		3 (4.3, -1)	3.78 P. 7	. き おば霧		1	% + ~g ≥ °, € .	

TABLE 4
2010 CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN THE VADOSE ZONE

	CANADIE			MET	HOD: EPA S\	V 846-8021B	, 5030		ME	THOD: 8015	М	TOTAL	EPA 300
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)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	Chloride (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
	いる時間	5. J. J. J. 10. 10. 10. 10. 10. 10. 10. 10. 10. 10	grant nower	Mark of the second	10 F	少规则(2.4)			E BURN	200	E	· Bas	4 V . Brix 18
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
Tally to the Mine?		""。1、"美维	41 mm 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	18 · · · · · · · · · · · · · · · · · · ·	(\$1) A. A.	1.65			THE WAR	1. T. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	<b>操物</b> 。		1. 10.00
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
\$P\$	0-130		- 7 - 424	\$1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	10 per 1 4	AND THE STATE OF	,	1	TO THE STATE OF TH	-14. 2. p	100	A State	42.30
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
1241 - 1 2291		1 15 16		¥ 0		4			41.	1 46 1:	i ja		15.
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
<b>《胡</b> 花》			ではいるな意		W65"	Market .		·	2 二世代数	The Control	18	A TOP BANK	
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
大道:	1, 15.35	Sec. 2	** L		ia. J.	- 4		100	***		Q2.5 1 N	del	
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
HART CONTRACT	The state	The State of the S	1		1 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- M. S	14. IM 87. H	1,48	to . 7		12 6	L'EN A.	
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
ABB MALE WAY	in the second		. 19	39			No. of the second	2 A	Section 2	" ( *, ) S	***		
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
注意1007年,他的1	v same	11 4 4	1.54	*		Services .	1.2	ايوالايلاطان الوالايلاطان	2549	1 1	Party S.	Trains	2.47

TABLE 4

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

	CAMPLE			METI	IOD: EPA SV	V 846-8021B	5030		ME	THOD: 8015	М	TOTAL	EPA 300
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)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	Chloride (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
The state of the s		Mag.	13.84	g ·		erete e e i	Section 1		160	100	Rya mi	2	Sec.
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
the state of the s			2.5	- '					D > 12		777	1	
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
		Y		\$ 1.			****	14	760		素類する。	4.00	75
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
Note that the second		N 3.13	1.530	. ,	1.5		Bet But		Exp. 1	1.54	15 " "	103	
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
	W. W. Carlot	Bertin Kiloni	15-844		1.74		10 mg		Section 1		2 C	y - Ho	Zila II.
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
		327	- 18 AT	Tare to		. P. S. S. S. S. S.	计算数别可	*. 一次流	数26000000000000000000000000000000000000		11.	ii dankta	
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
7.7.70		*.			-1.		1. (4) 1.	1.4		3.4	1,	1 m	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
A Same of the		14	· TRANS	). · · · ·			88 D. H. Y.	e e e	F. V.	2,000	A STEELEN		and the second

TABLE 4
2010 CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN THE VADOSE ZONE

	CANADI E			METI	HOD: EPA SV	V 846-8021B	, 5030		ME	THOD: 8015	M	TOTAL	EPA 300
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)	TPH C <sub>6</sub> -C <sub>35</sub> (mg/Kg)	Chloride (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
art.		a.		1.772	. 14	1. 35 3 1	1.55	ž			2 5 E	1	· · · · · ·
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
	201. 美國	MASS. C	Same of the	1.14	[18] 医 / 10]	Kon .					1.50		
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
	25	f .	1400 CH.	12 gs				20 L	1.852.35	10年の	10 C		Maria Car
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
a delicate	4		Sp. 1. 2.	10 1 m	5. <sup>11</sup>	1 1 1		1 0				44	
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
Activities and the second	120	\$100 July 1	Transaction .		3 5 7	<b>7/2</b> .7	* 3	المراجعة الأ		1 1 1 1 2 2	ate. s	en and	* 6
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
	1 1	11 1 1 1	34.45	1		(1) 新蒙蒙尔人人	1. 11. 17.24	<b>38</b> (1) (4)	7.7 (M. )	THE SEP	The second second		THAT AND

# 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 (AALII), West Virginia (362), Kentucky (85) Louisiana (04176), USDA (P330-07-00105)

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

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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: 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 Analys ummary 377657

# Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

nelad:

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

								_Project Ma	nager:	Brent Barron,	11	
	Lab Id:	377657-0	01	377657-0	02	377657-0	003	377657-0	004	377657-0	05	
Analysis Requested	Field Id:	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	
Analysis Kequesiea	Depth:											
,	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Jun-14-10 0	8:10	Jun-14-10 (	8:20	Jun-14-10 (	08:30	Jun-14-10 (	08:40	Jun-14-10 (	8:50	
Anions by E300	Extracted:					-						 
	Analyzed:	Jun-18-10 1	0:48	Jun-18-10 1	0:48	Jun-18-10	10:48	Jun-18-10	10:48	Jun-18-10 1	0:48	
	Units/RL:	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	
Percent Moisture	Extracted:											
	Analyzed:	Jun-18-10 (	8:30	Jun-18-10 (	8:30	Jun-18-10 (	08:30	Jun-18-10 (	08:30	Jun-18-10 (	8:30	
	Units/RL:	%	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	
TPH By SW8015 Mod	Extracted:	Jun-18-10 1	0:55	Jun-18-10 1	0:55	Jun-18-10 1	0:55	Jun-18-10	0:55	Jun-18-10	0:55	
,	Analyzed:	Jun-19-10 1	4:42	Jun-19-10 1	5:09	Jun-19-10 1	5:37	Jun-19-10	6:05	Jun-19-10 1	6:32	
	Units/RL:	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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Final Ver. 1.000

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

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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

<sup>\*</sup> Outside XENCO's scope of NELAC Accreditation.



# Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

ork Orders: 377657,

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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes		,	[D]					
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:14	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	-		[D]					
I-Chlorooctane	104	100	104	70-135				
o-Terphenyl .	49.6	50.1	99	70-135				

Lab Batch #: 811568

Sample: 377657-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 14:42	SU	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	SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	97.7	99.7	98	70-135	
o-Terphenyl	45.7	49.9	92	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il 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 A	nalyzed: 06/19/10 15:37	SURROGATE RECOVERY STUDY							
TPH By SW801	5 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes		, ,		[D]					
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:

Matrix: Soil

Units: mg/kg Date Analyz	zed: 06/19/10 16:05	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod  Analytes		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
				[D]					
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 16:32	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	213	200	107	70-135	
o-Terphenyl	101	100	101	70-135	

Lab Batch #: 811568

Sample: 377657-005 D / MD

Batch:

Matrix; Soil

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 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			[2]					
1-Chlorooctane	221	200 .	111	70-135				
o-Terphenyl	103	100	103	70-135				

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution







Project Name: Southern Union Gas Landfarm

Work Order #: 377657

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	·	[B]	[C]	[D]	[E]	Result [F]	[G]				
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 SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY						Y					
TPH By SW8015 Mod Analytes	Btank 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	<b>†</b>
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

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

**QC- Sample ID:** 377603-001 S **Batch #:** 

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

BRL - Below Reporting Limit



# Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377657

Lab Batch #: 811425

Date Prepared: 06/18/2010

Date Analyzed: 06/18/2010 QC- Sample ID: 377603-001 D

Analyst: LATCOR

Project ID:

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE A	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
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	DUPLIC	ATE REC	COVERY
Parent Sample	Sample		Control	

Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 / SAMPLE DUPLICATE RECOVERY													
TPH By SW8015 Mod	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag										
Analyte		[B]													
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

# age 12 of 13

# **Environmental Lab of Texas**

3

# CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

THE STATE OF THE S

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

	Project Manager:	Camille Bryant																	Pro	ject	Nan	ne: <u>3</u>	Sou	the	m L	<u> Inic</u>	on G	ìas	Lar	ndfa	<u>rm</u>			_
	Company Name	Basin Environm	nental C	onsultir	19, LLC	<u> </u>				,										Pro	oject	#:_												
	Company Address:	P.O. Box 381								¥									P	roje	ct Lo	ж: <u>і</u>	ea l	Cou	nty, (	MM								
	City/State/Zip:	Lovington, NM	88260																		PO	#:_												
	Telephone No:	(575)605-7210					Fax No	:	(54	) <b>5</b> ) 3	<b>196-</b> 1	429	)					Re	port	Fon	mat:		<b>3</b> s	itan	dard		Ε	] TR	≀RP			NPDE	ES	
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ÖI		Sell 1 G-1	<del></del>	<del>  **</del>	<u> </u>	6/14/10	0810	T T	1	<del>                                     </del>	_	Ĥ	Ė	-		┧	Ť	SO		X	<del>-</del>	4	1	7	2	弋	╬	۴	╁	X	$\dashv$	╬	7	<u>≥</u>
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# **XENCO** Laboratories

Atlanta, Boca Raton. Corpus Christi. Dalles
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 11:10					
Lab ID#: 377057					
Initials: AL					
Samp	ole Receipt Chec	klist			
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 lottles?	(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 / receiv	red?	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 cus	stody?	Yes	No		
11. Samples in proper container / bottle?		Yes	No		
12. Samples property 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	NA	
18. Cooler 1 No. Cooler 2 No. Coo	ler 3 No.	Cooler 4 No		Cooler 5 No.	
ibs 3.6°C lbs °C	odl	lbs	°C	lbs	°C
Nonconf	ormance Docum	entation		• .	٠
Contact:Contacted by:		<u>-</u>	Date/Time:_		
Regarding:	······································			·	
Corrective Action Taken:					
Check all that apply:   Cooling process has begun condition acceptable in Initial and Backup Temperate Client understands and would be conditionally as a condition acceptable in Initial and Backup Temperate Client understands and would be conditionally as a conditional acceptable in Initial and Backup Temperate Client understands and would be conditionally as a conditional acceptable in Initial and Backup Temperate Client understands and would be conditionally as a conditional acceptable in Initial and Backup Temperate Client understands and would be conditionally as a conditional acceptable in Initial and Backup Temperate Client understands and would be conditionally as a conditional acceptable in Initial and Backup Temperate Client understands and would be conditionally as a conditional acceptable in Initial and Backup Temperate Client understands and Backup Temperate Client understand and Backup Temperate Client understand under Client understand understand under Client understand under Client understand under Client und	by NELAC 5.5.8.3.1.a. ture confirm out of ter	1. π <b>perature co</b> i		ature	

# **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 (AALII), 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.

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. 377666 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 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

#### 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 Analys. ummary 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

								Project Ma	uager:	Brent Barron, II	
	Lab Id:	377666-0	001	377666-0	02	377666-0	003	377666-0	04		
Analysis Requested	Field Id:	TZ Cell 2	G-1	TZ Cell 2	G-2	TZ Cell 2	G-3	TZ Cell 2	G-4		
Analysis Requesieu	Depth:		ĺ	٠	ļ					,	
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Jun-14-10	09:10	Jun-14-10 (	9:20	Jun-14-10 0	9:40	Jun-14-10 (	9:50		
Anions by E300	Extracted:					•					
	Analyzed:	Jun-18-10	20:38	Jun-18-10 2	:0:38	Jun-18-10 2	20:38	Jun-18-10 2	20:38		
	Units/RL:	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		
Percent Moisture	Extracted:										
	Analyzed:	Jun-18-10	08:30	Jun-18-10 (	8:30	Jun-18-10 0	08:30	Jun-18-10 (	08:30		
	Units/RL:	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		3.53	1.00	3.47	1.00	8.01	1.00	3.80	1.00		
TPH By SW8015 Mod	Extracted:	Jun-18-10	11:05	Jun-18-10 1	1:05	Jun-18-10 1	11:05	Jun-18-10	1:05		
	Analyzed:	Jun-19-10	02:57	Jun-19-10 (	3:24	Jun-19-10 0	3:51	Jun-19-10 (	04:18		
	Units/RL:	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	(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: 377666,

Lab Batch #: 811327

Project ID:

Sample: 566133-1-BKS / BKS

Batch: 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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 00:	44 SU	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							
	sy 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		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]					
I-Chlorooctane		122	100	122	70-135				
o-Terphenyl		55.4	50.2	110	70-135				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery  $[\dot{D}] = 100 * A / B$ 

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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: | 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	Control Limits %R	Flags			
Analytes				[D]					
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/19/10 04:18	SURROGATE RECOVERY STUDY						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
I-Chlorooctane	111	99.6	111	70-i35				
o-Terphenyl	51.7	49.8	104	70-135	<u></u>			

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## BS / BSL recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377666

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

Date Frepareu: 00/16/20

**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	Blank Spike Result	Blauk Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	_ [E]	Result [F]	[G]	•			
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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	•	[B]	[C]	[D]	(E)	Result [F]	[G]				
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

- 06/10/2010

**Project ID:** 

Date Prepared: 06/18/2010

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	TRIX 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	1			

 $\label{eq:matrix_pike_precent_recovery} \begin{tabular}{l} Matrix Spike Percent Recovery $[D] = 100*(C-A)/B$ \\ Relative Percent Difference $[E] = 200*(C-A)/(C+B)$ \\ All Results are based on MDL and Validated for QC Purposes \\ \end{tabular}$ 

**BRL** - Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377666

Lab Batch #: 811430

Project ID:

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst:LATCOR

QC- Sample ID: 377662-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
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 #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE/SAMPLE DUPLICATE RECOVER									
Percent Moisture Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE/SAMPLE DUPLICATE RECOVERY										
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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							

## **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				· · · · · · · · · · · · · · · · · · ·					٠					-	Pro	ject	Nam	): <u>S</u>	outh	lem	ı Un	ion	Ga	<u>s La</u>	ndfa	<u>rm</u>		
	Company Name	Basin Environment	al Consult	ng, LL(	<u> </u>											-		Pro	ject 1	<b>#</b> :										
	Company Address:	P.O. Box 381			<del></del>											_	P	rojec	at Lo	:: <u>Lo</u>	a Co	unt	y, Ni	M						
	City/State/Zip:	Lovington, NM 8826	60													_			PO	<sub>}:</sub>										
	Telephone No:	(575)605-7210				Fax No	:	(50	5) 3:	96-1	429					Re	port	For	nat:	X	Sta	ındaı	rd		ר 🛘	TRRF	,		NPDE	s
	Sampler Signature	( Emiss	الم	ببر	ut_	e-mail	:	cit	гуа	ant	<u>@</u> b	asi	in-c	ons	ultii	ng.co	<u>m</u>		•			—Ai	nalvz	œ Fo	ж: -				_	7
(lab use	only)			0																	CLP:		Á		X	Т		T	27 Pag	
ORDEF	<u> 37</u>	7666						Ц	Pro	serv	atlo	n & (	of C	ontal	ners	Mat	-	98	Т	T	_	-	H	-	_		Ŕ		1	1
LAB # (tab use only)	FIEI	LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	tce	HNO,	HQ.	N-SO.	NeOH	None	Other (Specify)	DW-Ortnidng Water SL-Sludg GW - Groundwater S-SOUSOL	NP - Non-Potable specify Oth	418.1 (80158)	Cations (Ca Mo Na K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Votebles	Semivoladies	BTEX 80218/5030 or BTEX 8280	NORM	अरोपिक ह	1	RUSH TAT (Pre-schedule) 24,	
	TZ C	eil 2 G-1			6/14/10	0910		1	X							so	L	x		$oxed{\mathbb{L}}$			$\square$	$\Box$	floor	$oxed{oxed}$	X	$\Box$	$oldsymbol{\mathbb{T}}$	x
٠.	TZ C	ell 2 G-2			6/14/10	0920		1	X				┙			so	L	x	$\perp$	丄			Ц	$\perp$	$\perp$		X		$\perp$	x
	TZ C	Cell 2 G-3			6/14/10	0940	L	1	X				$\perp$			so	L	X	$\perp$	丄		Ш	$\Box$	ightharpoonup	$\bot$	丄	X	$\dashv$	$\perp$	X
	TZC	all 2 G-4			6/14/10	0950	↓	1	X	4	4	_	_	$\bot$	<u> </u>	SO	니	X	4	_		Щ	$\dashv$	$\downarrow$	4	$\downarrow$	x	_	4	X
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(Ellinguis	hed by:	10/17 Dat		Time	Received by:	eyer								+-	0/1 <sup>4</sup> De			ime	-S	am ple	Hai	nd D	leave	ered:					N	
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Refinquis	hed by:	Dai		Time	Received by EL	17	n	•						6		·10		ime - Ze	ء در	mpe	ratur	e Ur	.9[6	GS Rece	が 数:		3.		•c	

Page 12 of 13

inal 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 1	1.20				-
Lab ID#:	377664					
Initials:	AL					•
	•	Sample Receipt Che	ecklist			
1. Samples on ice?			Blue	Water	No	
2. Shipping container in	good condition?		Yes	No	None	
3. Custody seals intact	on shipping contain	ner (cooler) and tottles?	(Yes)	No	NA	
4. Chain of Custody pre	sent?	· · · · · · · · · · · · · · · · · · ·	Yes	No		
5. Sample instructions	complete on chain	of custody?	Yes	No No		
6. Any missing / extra s	amples?		Yes	No		
7. Chain of custody sig	ned when relinquis	hed / received?	Yes	No		
8. Chain of custody aga	ees with sample lab	pel(s)?	(YES)	No		
9. Container labels legi	ble and intact?	*	Yes	No		
10. Sample matrix / pro	perties agree with c	hain of custody?	(Yeg)	No		
11. Samples in proper	container / bottle?		Yes	No		
12. Samples property p	reserved?		(Yes)	No	N/A	
13. Sample container in	rtact?		(Yes)	No		
14. Sufficient sample a	mount for indicated	tast(s)?	(Yes)	No		
15. All samples receive	d within sufficient h	rold time?	(Yes)	No		
16. Subcontract of same	ple(s)?		Yes	No	(NA)	_
17. VOC sample have z	ero head'space?		(Yes	No	NA	
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 Docu	mentation		-	
Contact:	Contac	:ted by:		Date/Time:		<u> </u>
Regarding:			`			
<u></u>						
Corrective Action Take	n:					
·		·	·			
				<del></del>		····
Check all that apply:	☐ Cooling process	has begun shortly after samp cceptable by NELAC 5.5.8.3.1	ling event and o	out of tempe	erature	
	□ Initial and Backu	p Temperature confirm out of	temperature co	nditions	•	

☐ Client understands and would like to proceed with analysis

## **Analytical Report 377660**

for

## **Basin Environmental Consulting, LLC**

**Project Manager: Camille Bryant** 

Sothern 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: 377660

**Sothern 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

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## **Sample Cross Reference 377660**



## Basin Environmental Consulting, LLC, Lovington, NM

Sothern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	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

#### 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 Analys ummary 377660

#### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Sothern Union Gas Landfarm

**nelad** 

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

								Project Ma	nager:	Brent Barron,	11		
	Lab Id:	377660-0	001	377660-0	02	377660-0	003	377660-0	004 ·	377660-0	005		
Analysis Requested	Field Id:	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		
Anuiysis Requesieu	Depth:				İ								
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL			
	Sampled:	Jun-14-10	10:10	Jun-14-10 1	0:20	Jun-14-10 1	0:30	Jun-14-10	10:40	Jun-14-10	10:50		
Anions by E300	Extracted:									•			
	Analyzed:	Jun-18-10	10:48	Jun-18-10 1	0:48	Jun-18-10 1	10:48	Jun-18-10	10:48	Jun-18-10	10:48		
	Units/RL:	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		
Percent Moisture	Extracted:											·	
·	Analyzed:	Jun-18-10	08:30	Jun-18-10 (	8:30	Jun-18-10 (	08:30	Jun-18-10	08:30	Jun-18-100	8:30		
·	Units/RL:	%	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		
TPH By SW8015 Mod	Extracted:	Jun-18-10	10:55	Jun-18-10 1	0:55	Jun-18-10 1	0:55	Jun-18-10	10:55	Jun-18-10	0:55		
·	Analyzed:	Jun-21-10	08:16	Jun-21-10 (	8:43	Jun-21-10 (	9:10	Jun-21-10	09:37	Jun-21-10	0:04		
	Units/RL:	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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Odessa Laboratory Manager
Final Ver. 1.000

Brent Barron, II



## 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: Sothern Union Gas Landfarm

ork Orders: 377660,

Sample: 566290-1-BKS / BKS

Project ID:

Lab Batch #: 811568

Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 06/19/10 13:19	SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		(
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 13:47	St	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes		'	· [D]								
1-Chlorooctane	Ì22	99.7	122	70-135							
o-Terphenyl	46.6	49.9	93	70-135							

Lab Batch #: 811568

**Sample:** 566290-1-BLK / BLK

Batch:

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			
· · · · · · · · · · · · · · · · · · ·		100						
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							
ТРН 1	By SW8015. Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1 Chi	Analytes			1					
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			
I-Chlorooctane	82.9	100	83	70-135				
o-Terphenyl	42.1	50.1	84	70-135				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;I results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Sothern 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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
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:

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	Control Limits %R	Flags		
Analytes			[D]				
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/21/10 09:37	SURROGATE RECOVERY STUDY							
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]	<u> </u>	•			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/21/10 10:04	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	89.6	99.5	90	70-135			
o-Terphenyl	44.6	49.8	90	70-135			

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## BS / BSL \*\*Aecoveries



Project Name: Sothern Union Gas Landfarm

Work Order #: 377660

Lab Batch ID: 811425

Analyst: LATCOR

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

**Project ID:** 

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

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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		<b>[B]</b>	[C]	[D] .	(E)	Result [F]	[G]					
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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1180	118	2	70-135	35	<u> </u>
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

Project ID:

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377603-001 S Batch #:

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

BRL - Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Sothern Union Gas Landfarm

Work Order #: 377660

Lab Batch #: 811425

Date Analyzed: 06/18/2010

Project ID:

Date Prepared: 06/18/2010

Analyst:LATCOR

QC- Sample ID: 377603-001 D

Batch #:

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg

Anions by E300  Analyte	 Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

	211111111111111111111111111111111111111								
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag				
Analyte	1 1	[B]							
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE / SAMPLE DUPLICATE RECOVERY										
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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							

## Page 12 of 13

## **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			·											<b>-</b> '	Proje	ct Na	ıme:	50	ıtve	rn (	Jnio	<u>ın G</u>	88	Lan	dfar	m		
	Company Name	Basin Environmental C	onsultir	ıg, LLC	:	·							·····			•	F	roje	ct #:											_
	Company Address:	P.O. Box 381			<u> </u>											•	Pro	ject I	Loc:	Lea	Cou	nty,	NM			Pa				
	City/State/Zip:	Lovington, NM 88260									<b></b>					-		. Р	O #:											
	Telephone No:	(575)605-7210				Fax No	:	(50	5) 3	96-1	429					Rep	ort F	oma	t:	X	Stane	dard			TR	:RP		□ N	PDE	S
	Sampler Signature:	Camille	B	ہیلا	aut	e-mail	:	gi	υгγ	ant	<u>@b</u>	asir	<u>1-co</u>	กรเ	ıltir	ng.cor	<u>n</u>				·	4						_		•
(lab use				'	7												E				LP:	Ana	lyze l	T.	厂	П	T	$\overline{T}$	┫╻	l
ORDER	r#: . 377	1660							Př	esen	ation	8/	of Co	ntain	ers	Matri	K gg	Т		TOT	7	<b>.</b>	$\perp$	X	┥	]	300		2 2	
LAB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Floid Filtered	Total #. of Containers					Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>			ter SL-Sludg ær S-Soji/Sof	TPH: 418.1 (8015M) 8015	TPH: TX 1005 TX 1006	Cettons (Ca, Mg. Na, K)	Arions (CI, SO4, Alkainity)	SAR / ESP / CEC	Volatiles	Serrivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI		Chloridos E 3		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	
	TZ C	eli 3 G-1			6/14/10	1010 ·	L	1	X			$\perp$	$\bot$			કભા	. X		Ц				$\perp$				x	$oldsymbol{\perp}$		X
	TZ Co	eli 3 G-2	_		6/14/10	1020	L	-	X				_			SOIL	<u>.   x</u>		Ц	$\bot$	$\perp$	┵	⊥_	<u> </u>	Ш	Ц	x	丄		X
	TZ Co	ell 3 G-3			6/14/10	1030		1	X		$\perp$		$\perp$			SOIL	. <u> </u> x				$\perp$		丄			$\sqcup$	x	丄		X
	TZ Co	ell 3 G-4			6/14/10	1040		1	X							SOIL	<u>.   х</u>								$\square$	Ц	x		Ш	X
•	TZ Co	ell 3 G-5	·		6/14/10	1050		1	X							SOIL	. x						$oldsymbol{\perp}$				X			X
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	nstructions:															. (			Lab VOC	orato & Fn	ry C	omr Hea	nent dspr	B: CB?				N.	N	
Kelinguisi	mala Ki	10 Date 6/17	7:0	me	Received by:	· • · · · · · · · · · · · · · · · · · ·					•			G	Dai //^ Dai	<b>&gt;</b>	Ծնո 7:0 Ծնո			nv sin	mole	ш	anı Ka	8O. 7	•		· CL	) × Lor	N	- 1
Relinquish	ned by:	Date	Ti	me	Received by ELC	1.7	m							6	Dar -17	~ . l	-Tim / 1:7	o Ø	Tem	pera	07 ure (	Jpor	UPS 1 Rec	Š xeipt: ——	:		3.0		•c	



Basin Env.

#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dalias 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

Date/Time:	<u> </u>	. 10		•		-
Lab ID#:	377660					
Initials:	AL	<del></del>				
		Sample Receipt Ch	ecklist		•	
1. Samples on ice?			Blue	Water	No	
2. Shipping container	in good condition?		(Yes)	No	None	
3. Custody seals intac	t on shipping containe	r (cooler) and kottles?	(Yes)	No	NA	
4. Chain of Custody p	resent?		Yes	No		
5. Sample instructions	complete on chain of	custody?	Yes	No_		
6. Any missing / extra	samples?		Yes	(No)		
7. Chain of custody sl	gned when relinguishe	d / received?	Yes	No		
8. Chain of custody as	rees with sample label	(s)?	(Yes)	No		
9. Container labels leg	rible and intact?		(Yes)	No		
10. Sample matrix / pr	operties agree with cha	in of custody?	(Yee)	No		
11. Samples in proper	container / bottle?		Yes	No		
12. Samples properly	preserved?		(Yes)	No_	NA	
13. Sample container	ntact?		(Yes	No		
14. Sufficient sample a	amount for Indicated te	st(s)?	(Yes)	No		
15. All samples receiv	ed within sufficient hol	d time?	(Yes)	No		
16. Subcontract of sar	nple(s)?		Yes	No	(NA)	
17. VOC sample have	zero head space?		(Yes)	No_	NA	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No	) <u>.</u>	Cooler 5 No.	
ibs 3.6	°C lbs	°C lbs	°C lbs	°(	lbs	°C
	No.	onconformance Docu	mentation		- ·- ·- ·-	
Contact:	Contacte			Date/Time:		
Oonacc	Oomace	u by	<del></del> -	Date inne.		
Regarding:						
Corrective Action Tak	en:					
		- to	Dan 200 - 1 1 -			
Check all that apply:		s begun shortly after samp optable by NELAC 5.5.8.3.		out or tempe	rature	
	□Initial and Backup	Temperature confirm out or and would like to proceed	f temperature co	nditions		

## **Analytical Report 377661**

## for Basin Environmental Consulting, LLC

**Project Manager: Camille Bryant** 

Southern Union Gas Landfarm

21-FEB-11



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):
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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)

Final 1.002





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 Analys ummary 377661

#### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inelad:

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

								Project Mai	nager:	Brent Barron,	11	
	Lab Id:	377661-0	001	377661-0	02	377.661-0	003	377661-0	004	377661-0	05	
Analysis Requested	Field Id:	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	
Analysis Requesteu	Depth:	•										
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Jun-14-10	11:00	Jun-14-10 1	1:10	Jun-14-10 1	1:20	Jun-14-10 1	1:30	Jun-14-10	1:40	
Anions by E300	Extracted:											
•	Analyzed:	Jun-18-10	10:48	Jun-18-10 1	0:48	Jun-18-10 1	0:48	Jun-18-10 1	0:48	Jun-18-10	0:48	I
·	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	1
Chloride		37.7	4.36	36.1	4.32	41.0	4.49	126	8.67	75.9	8.60	
Percent Moisture	Extracted:											
	Analyzed:	Jun-18-10	08:30	Jun-18-100	8:30	Jun-18-10 0	08:30	Jun-18-10 (	8:30	Jun-18-10 (	8:30	
	Units/RL:	· %	RL	%	RL	%	RL	%	RL	%	RL	ļ
Percent Moisture		3.70	1.00	2.69	1.00	6.38	1.00	3.08	1.00	. 2.34	1.00	
TPH By SW8015 Mod	Extracted:	Jun-18-10	10:55	Jun-18-10 1	0:55	Jun-18-10 1	0:55	Jun-18-10 1	0:55	Jun-18-10 J	0:55	
	Analyzed:	Jun-21-10	10:59	Jun-21-10 1	1:26	Jun-21-10 l	1:53	Jun-21-10 1	2:21	Jun-21-10 1	2:48	
·	Units/RL:	mg/kg	RL ·	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Rånge 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 KENCO 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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Final 1.002

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 Corms 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 STUI									Y		
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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
Analytes		(-)	[0]	(~)		1100211 (1)	[0]				
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 **QC- Sample ID:** 377603-001 S

Project ID:

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

Analyst: LATCOR

Batch #:

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

**BRL** - Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377661

Lab Batch #: 811425

Date Analyzed: 06/18/2010 10:48

Project ID:

Date Prepared: 06/18/2010

Batch #:

Analyst:LATCOR

QC- Sample ID: 377603-001 D

Matrix: Soil

Reporting Units: mg/kg		SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY										
Anions by E.	300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte			[B]										
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 #:

Matrix: Soil

Reporting Units: %

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

Lab Batch #: 811568

Percent Moisture

Date Analyzed: 06/21/2010 07:50

**Percent Moisture** 

Analyte

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

Analyst:BEV

QC- Sample ID: 377657-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY										
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result  B	RPD	Control Limits %RPD	Flag							
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								

# Page 10 of 11

## **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			<del></del>		_									_	•	roj	ect 1	lame	: 3	outi	neri	n U	IIOI	IGB	18 L	<u>.ano</u>	Tarn	<u> </u>		
	Company Name	npany Name Basin Environmental Consulting, LLC							_	•		Proj	ect #:																			
	Company Address:	P.O. Box 381														_		Pr	ojec	t Loc	:: <u>Le</u>	a Ç	ount	ly, N	M							
	City/State/Zip:	Lovington, NM 88260														_				PO #	: <u> </u>							·				
	Telephone No:	(575)605-7210				Fax No		(50	)5) 3	96-1	429	1				-	Rep	ort /	om	ıst:	X	Sta	anda	ırd			TRE	₹P	[	] NP	DES	3
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(lab use	_	1661		•					_									Ⅎ				TCLP				X		ľ	2000		72 hrs	
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LAB # (lab use only)	FIE	LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	<u>80</u>	HNO <sub>3</sub>	HCI	H <sub>2</sub> SO,	NeOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None Offer ( Specify)	DW-Drinking Water SL-Shudg	29	on-Pocable Specify	Ē	Cations (Ce. Ma. Na. K)	Anlons (Cl. SQ4, Albalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	Volaties	Semivolatiles	BTEX 80218/5030 or BTEX 8260	RCI		sopisoli.		RUSH TAT (Pre-Schedule) 2	Standard TAT 4 DAY
	TZ	Cell 4 G-1			6/14/10	1100		1	X		-						3OIL	7	x		Γ							_	х	$\perp$		X
	TZC	ceil 4 G-2			6/14/10	1110		1	X								SOIL		x							$\square$		$\perp$	x			X
	TZ C	Cell 4 G-3			6/14/10	1120		1	X							L	3OIL		x		$\perp$	_	L		Ш				x L	丄	L	X
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Relinquish	molle	Cuput 0/17 Date	7:0		Received by:  TOOT (6)  Received by:	ruser.	_							$\perp$	6/		_	<b>?</b> :	me me	10 G	lamı	e Ha	ınd [	Deliv	<b>Selec</b>	iner( r(s)	( <b>5)</b> * 4999 "U.E.S	KRAM MARKA MARKA	V	<i>)</i>	N N	and Miles
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#### **XENCO** Laboratories

Attanta, Boca Raton, Corpus Christi, Dalles 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#: 377 (66)				•
Initials: AL				
Sample Receipt Chec	cklist			:
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 pottles?	(Yas)	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)?	(YE)	No		
9. Container labels legible and intact?	Yes	No No		
10. Sample matrix / properties agree with chain of custody?	(Yeg)	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	(NA)	
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.	
Ibs 3.6 °c Ibs °c Ibs	°C lbs	°c		°C
Nonconformance Docum	nentation		<del></del>	
Contacted by:		Date/Time:_		
Regarding:				
regarding.		<del></del>		
	······································	<del></del>	<del></del>	<del></del>
Corrective Action Taken:	1			
7		<u> </u>		
Check all that apply: ☐Cooling process has begun shortly after sampling condition acceptable by NELAC 5.5.8.3.1.a	1.1.	-	rature	· · · · · · · · · · · · · · · · · · ·

Final 1.002

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

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

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# **Sample Cross Reference 377674**



# Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
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

Final Ver. 1.000



### Certificate of Analys.

### ummary 377674

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inelad:

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

Lab Id:   377674-001     TZ Cell 5 G-1     Depth:   Matrix:   SOIL   Sampled:   Jun-14-10 11:50     Anions by E300   Extracted:   Analyzed:   Jun-18-10 20:38     Jun-18-10 20:38     Analyzed:   Jun-18-10 20:38     Analyzed:   Jun-18-10 20:38     Jun-18-10 20:38   Jun-18-10 20:38     Jun-18-10 20:38	
Analysis Requested  Depth:  Matrix: SOIL  Sampled: Jun-14-10 11:50  Anions by E300  Extracted:  Analyzed: Jun-18-10 20:38	
Depth:   Matrix:   SOIL     Sampled:   Jun-14-10 11:50         Anions by E300   Extracted:   Analyzed:   Jun-18-10 20:38	
Sampled: Jun-14-10 11:50	·
Anions by E300  Extracted: Analyzed: Jun-18-10 20:38	
Analyzed: Jun-18-10 20:38	
Units/RL: mg/kg RL	
Chloride 12.5 4.28	
Percent Moisture Extracted:	
Analyzed: Jun-18-10 08:30	
Units/RL: % RL	
Percent Moisture 1.98 1.00	
TPH By SW8015 Mod	
Analyzed: Jun-19-10 08:46	
Units/RL: 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	

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 OC 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.
- RPD exceeded lab control limits.
- 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
- **POL** 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: 377674,

**Sample:** 566133-1-BKS / BKS

Project ID:

Lab Batch #: 811327

Batch: Matrix: Solid

Units: mg/kg Date Analyzed: 06/18/10 23:51	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	45.7	50.0	91	70-135	l

Lab Batch #: 811327

' Sample: 566133-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 00:18	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 00:44	SU	RROGATE RI	ECOVERY S	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 06:5	9 <b>SU</b>	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY :	STUDY	
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	Analytes	107	101	106	70-135	
o-Terphenyl	•	49.4	50.3	98	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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		BLAN	K/BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	ICATE	RECOVE	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]		Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				İ
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		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE	RECOVI	RY STUD	Y	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[ <b>B</b> ]	[C]	[D]	[E]	Result [F]	[G]				
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



"ork Order #: 377674

Lab Batch #: 811430

Project ID:

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
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\*(C-A)/B Relative Percent Difference [E] = 200\*(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 Date Analyzed: 06/18/2010

Project ID:

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 D Deporting United marka

Batch #: Matrix: Soil SAMPLE / SAMPLE DUPLICATE DECOVEDY

Reporting Units: mg/kg	SAMPLE	SAMIFLE	DULLIC	AIE KEC	OVEKI
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
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  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
TPH By SW8015 Mod  Analyte	Parent Sample . Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

# En ...ronmental 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			·												Pre	ojec	t Nau	ne: _	Sou	the	rn L	Inic	on G	ias	Lar	ndfar	m		
	Company Name	Basin Environmental C	onsultin	g, LLC	3													Pı	ojec	t#:_		•								<i>-</i>	
	Company Address:	P.O. Box 381															F	roje	ect L	oc: <u>I</u>	.ea (	Çou	nty, I	NM			_				
	City/State/Zip:	Lovington, NM 88260	_										_						PC	) #:_											
	Telephone No:	(575)605-7210 CMM(000	2.		-cL	_ Fax No:			5) 396					<u> </u>			•	Fo	rmat	. [	X s	tano	dard			] TR	(RP		□ N	PDE	s
		COM ROLL	70	<del>y</del>		e-mail:		CIC	orya	TUC	yba	SIN	<u>-co</u>	1SU	lun	g.cc	<u>m</u>						Anal	yze	For:	_				Т	7
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LAB # (lab use only)		LD CODE	Beginning Dapth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	#. of Containers	BOI CALL	!	H,SO.					DW-Drinking Water SL-Sludg	NP-Non-Potable Specify Oth	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cetions (Ca, Mg. Na. K)	SAD JESO JOEC	Metale: As As Bo CA Cr By Lan Co	Voleties	Serrivolatikes	BTEX 8021B/5030 or BTEX 8280	RCI	1 1	Chlericles Ez			Standard TAT 4 DAY
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dalias Houston, Mizmi, Odessa, Philadelohia Phoenix, San Antonio, Tampa Document Trite: 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.	ŕ	•		
Date/Time: 6:17:10 11:20		-		-
Lab ID#: 377674				
Initials: AL				
Sample Receipt Ch	ecklist		•	
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 tottles?	(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?	(Yé)	No		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	(Yes	No	N/A	
13. Sample container intact?	CYES	No		
14. Sufficient sample amount for indicated test(s)?	(Ŷes)	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?	(fes)	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	<u>-</u>	Cooler 5 No.	
ibs 3.6 °C ibs °C ibs	°C lbs	. "(	lbs	°C
Nonconformance Docu		Date/Time:		
Regarding:				
Corrective Action Taken:	·			
Check all that apply: ☐ Cooling process has begun shortly after same	pling event and o	ut of tempe	erature	

Page 12 of 12

condition acceptable by NELAC 5.5.8.3.1.a.1.

☐ Client understands and would like to proceed with analysis

□ Initial and Backup Temperature confirm out of temperature conditions

# **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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# **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

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

Final Ver. 1.000



## Certificate of Analys ummary 377668

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

nelad

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

						 Project Manager:	Brent Barron, II	
·	Lab Id:	377668-0	01 .	377668-0	002			
Analysis Requested	Field Id:	TZ Cell 6	G-1	TZ Cell 6	G-2			
Anutysis Requesteu	Depth:							
	Matrix:	SOIL		SOIL		,		
	Sampled:	Jun-14-10 1	2:00	Jun-14-10 1	12:10			
Anions by E300	Extracted:							
	Analyzed:	Jun-18-10 2	0:38	Jun-18-10 2	20:38			
	Units/RL:	mg/kg	RL	mg/kg	RL			
Chloride		48.9	17.3	98.0	8.69			
Percent Moisture	Extracted:					,		
	Analyzed:	Jun-18-10 0	8:30	Jun-18-10 0	08:30			
	Units/RL:	%	RL	%	RL			
Percent Moisture		2.72	1.00	3.38	1.00			
TPH By SW8015 Mod	Extracted:	Jun-18-10 l	1:05	Jun-18-10 1	1:05			
·	Analyzed:	Jun-19-10 0	4:45	Jun-19-10 0	)5:12			
	Units/RL:	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 KENCO 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

Final Ver. 1.000

Page 5 of 13



### **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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	Pnone	rax
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: 377668,

**Project ID:** 

Lab Batch #: 811327

Sample: 566133-1-BKS/BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 06/18/10 23:51	St	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	1	121	[D]	/**	ι .
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	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 00:44	SU	RROGATE R	ECOVERY	STUDY	٠
TPH By SW8015 Mod	· Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{D}		
I-Chlorooctane	103	100	103	70-135	
o-Terphenyl	49.0	50.1	. 98	70-135	

Lab Batch #: 811327

Sample: 377668-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 04:45	, St	JRROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
t-Chlorooctane	104	99.7	104	70-135	
o-Terphenyl	49.0	49.9	98	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders: 377668,

Project ID:

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	Control Limits %R	Flags					
Analytes			[D]	]						
1-Chlorooctane	111	99.6	111	70-135	-					
o-Terphenyl	51.7	49.8	104	70-135						

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



# BS / BSD 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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	Blank Spike Result	Blauk Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B] .	[C]	[D]	[E]	Result [F]	[G]				
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

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

Batch #:

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

BRL - Below Reporting Limit



### **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377668

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 / SAMPLE DUPLICATE RECOVERY									
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag						
Analyte		[B]									
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 #:

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE/SAMPLE DUPLICATE RECOVERY										
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte		[B]										
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY										
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag							
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				· · ·										_	F	roje	ct N	mê:	<u>So</u>	uth	em	<u>Un</u>	<u>ion</u>	Ga	<u> </u>	andf	arm			
	Company Name	Basin Environmental C	onsulti	ng, LL(	<u>c</u>									_				F	roje	ct #:												
	Company Address:	P.O. Box 381														_		Pro	ject	Loc	Les	. Co	unt	y, Ni	и							
	City/State/Zip:	Lovington, NM 88260			. <u></u>														P	O#:												
	Telephone No:	(575)605-7210				Fax No	:	<u>(50</u>	)5) <u>3</u>	96-	1429	9					Rep	ort Fo	ome	ıt:	X	Ste	ndaı	rd		□ ·	TRR	P.		NPD	ES	
	Sampler Signature	amile	$\mathbb{Z}$	الم	cut	e-mail	:	<u>ci</u>	bry	ant	@	bas	sin-	con	sul	tíng	ı.con	<u> </u>					<u>A</u> -	aba	e Fo						_	
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Trile: Sample Receipt Checkfist

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.	nance rep	ort • Oample	z Eog-ni		
(- 17 10 11:70	*******				_
Date/Time: 01110 11.00 Lab ID#: 377(408					
Initials:				•	
		,		•	
Sample F	Receipt Che	cklist			•
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	Kottles?	(Yes)	No	NA	
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	NA	
18. Cooler 1 No. Cooler 2 No. Cooler 3	No.	Cooler 4 No.		Cooler 5 No.	
ibs 3.6 °c lbs °c	Ibs	°C lbs	<b>°</b> C	lbs	သို
Nonconform	ance Docun	nentation			
Contact: Contacted by:		ı	Date/Time:		
		<del></del>			<del></del>
Regarding:			<del> </del>	·	
	·				
Corrective Action Taken:					
			···		
					_
	// 0		4 - 5		
Check all that apply:   Cooling process has begun shor condition acceptable by NE			or rempe	uemué	

□ Initial and Backup Temperature confirm out of temperature conditions

□Client understands and would like to proceed with analysis

Final Ver. 1.000

15

# **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 (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: 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

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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

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 Analys.

ummary 377670

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inelad:

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	
Lab Id:	377670-001					
Field Id:	TZ Cell 7 G-1				·	
Depth:				·		
Matrix:	SOIL					
Sampled:	Jun-14-10 12:20					
Extracted:						
Analyzed:	Jun-18-10 20:38	,				
Units/RL:	mg/kg RL					
	15.5 4.41					
Extracted:						
Analyzed:	Jun-18-10 08:30					
Units/RL:	% RL					
	. 4.81 1.00			,		
Extracted:	Jun-18-10 11:05					
Analyzed:	Jun-19-10 07:26					
Units/RL:	mg/kg RL					
	ND 15.8					
	525 15.8					
	77.9 15.8					
	603 15.8					
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Analyzed: Analyzed:	Field Id: Depth:  Matrix: SOIL  Sampled: Jun-14-10 12:20  Extracted: Analyzed: Jun-18-10 20:38  Units/RL: mg/kg RL  15.5 4.41  Extracted: Analyzed: Jun-18-10 08:30  Units/RL: % RL  4.81 1.00  Extracted: Jun-18-10 11:05  Analyzed: Jun-18-10 07:26  Units/RL: mg/kg RL  ND 15.8  525 15.8  77.9 15.8	Field Id: Depth:  Matrix: SOIL Sampled: Jun-14-10 12:20  Extracted: Analyzed: Jun-18-10 20:38 Units/RL: mg/kg RL 15.5 4.41  Extracted: Analyzed: Jun-18-10 08:30 Units/RL: % RL 4.81 1.00  Extracted: Jun-18-10 11:05 Analyzed: Jun-19-10 07:26 Units/RL: mg/kg RL ND 15.8 525 15.8 77.9 15.8	Field Id: TZ Cell 7 G-1  Depth:  Matrix: SOIL  Sampled: Jun-14-10 12:20  Extracted:  Analyzed: Jun-18-10 20:38  Units/RL: mg/kg RL  15.5 4.41  Extracted:  Analyzed: Jun-18-10 08:30  Units/RL: % RL  4.81 1.00  Extracted: Jun-18-10 11:05  Analyzed: Jun-19-10 07:26  Units/RL: mg/kg RL  Units/RL: mg/kg RL  ND 15.8  525 15.8  77.9 15.8	Lab Id: 377670-001 Field Id: TZ Cell 7 G-1  Depth:  Matrix: SOIL  Sampled: Jun-14-10 12:20  Extracted:  Analyzed: Jun-18-10 20:38  Units/RL: mg/kg RL  15.5 4.41  Extracted:  Analyzed: Jun-18-10 08:30  Units/RL: % RL  4.81 1.00  Extracted: Jun-18-10 11:05  Analyzed: Jun-19-10 07:26  Units/RL: mg/kg RL  ND 15.8  525 15.8  77.9 15.8	Field Id: TZ Cell 7 G-1  Depth:  Matrix: SOIL  Sampled: Jun-14-10 12:20  Extracted: Analyzed: Jun-18-10 20:38  Units/RL: mg/kg RL  15.5 4.41  Extracted: Analyzed: Jun-18-10 08:30  Units/RL: % RL  4.81 1.00  Extracted: Jun-18-10 11:05  Analyzed: Jun-19-10 07:26  Units/RL: mg/kg RL  ND 15.8  525 15.8  77.9 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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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: 377670,

**Project ID:** 

Lab Batch #: 811327

Sample: 566133-1-BKS/BKS

Batch: Matrix: Solid

Units: mg/kg	Date Analyzed: 06/18/10 23:51	SURROGATE RECOVERY STUDY							
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes	1,	, (D)	[D]	/ /				
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/19/10 00:18	SU	RROGATE R	ECOVERY :	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 00:4	4 SU	RROGATE R	ECOVERY S	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:

Matrix: Soil

Units: mg/kg Date	Analyzed: 06/19/10 06:59	SURROGATE RECOVERY STUDY						
TPH By SW8	-	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							
ТРН	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				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

I 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
ſ	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				Y							
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 IFI	Bik. Spk Dup. %R [G]	·RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		ر ما	[C]	[Β,	լեյ	result [1]	. [0]				
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



rk Order #: 377670

Lab Batch #: 811430

Date Analyzed: 06/18/2010

QC- Sample ID: 377662-005 S

Project ID:

Date Prepared: 06/18/2010

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	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\*(C-A)/BRelative Percent Difference [E] = 200\*(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

Project ID:

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE SAMPLE DUPLICATE RECOVERY						
Anions by E300	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag			
Analyte		[B]						
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]	Duplicate Result	RPD	Control Limits %RPD	Flag	
Analyte		[B]				
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE / SAMPLE DUPLICATE RECOVERY							
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
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				

#### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765 Phone: 432-563-1600 Fax: 432-563-1713

Company Name    Beach Environmental Consulting, LLC		Company Name Basin Environmental Consulting, LLC												_		Pro	jec	t Nar	ne:	So	uth	ern	Un	ion	Gæ	يا ه	andf	arm	1		_			
City/State/Zip: Telephone No: (375686-7210 Fax No: (305) 396-1429 Report Formet: X Standard TRRP NPDES  Sampler Signatura Community City Analyza Formatic																Project #:																		
Telephone No: G75/808-7210  Sampler Signature  Gib view entry  GRAPH Signature  Graph Signa														P	Project Loc: Lea County, NM																			
Sampler Signature  (lab use only)  ORDER 8:  ORDER 8:  ORDER 9:  FIELD CODE  ORDER 9:  FIELD CODE  ORDER 9:  FIELD CODE  ORDER 9:  ORDER 9:  FIELD CODE  ORDER 9:  FIELD CODE  ORDER 9:  O		City/State/Zip:	Lovington, NM 88260																		PC	)#:												
(lab use only)  ORDER 6:  TUP   X   X   X   X   X   X   X   X   X		Telephone No:	-	$\overline{}$			Fax No:		(50	)5) 3	96-1	1429	)				_	Re	port	Fo	mat	.	X	Ster	ıdan	 ქ			RRI	,		NPI	DES	 3
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Sor lowey (e/l? 1/20 by Sampler/Client Rep.? Y N by Sampler/Client Rep.? Y N by Courter? UPS DHL FedEx Lone Star Retinquished by:  Date Time Received by ELOT:	Comicae Kauset 6/17			7:0	00 3002 loway 6/11								7	7:00				Contraction to properly (1)																
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Page 11 of 12

nat Ver. 1.000



#### XENCO Laboratories

Atlanta, Boca Raton, Corous Christi, Delles 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						
Samp	ole Receipt Checki	ist			:	
1. Samples on ice?		Blue	Water	No		j
2. Shipping container in good condition?		Yes	No	None		Ī
3. Custody seals intact on shipping container (cooler)	and bottles?	(Yes)	No	N/A		1
Sample Receipt Champles on ice?  signification in good condition?  stody seals Intact on shipping container (cooler) and lettles?  ain of Custody present?  mple instructions complete on chain of custody?  y missing / extra samples?  ain of custody signed when relinquished / received?  ain of custody agrees with sample label(s)?  mainer labels legible and intact?  ample matrix / properties agree with chain of custody?  amples in proper container / bottle?  amples properly preserved?  ample container intact?  ufficient sample amount for indicated test(s)?  Usamples received within sufficient hold time?  ubcontract of sample(s)?  OC sample have zero head space?  ooler 1 No.		(Yes)	No			]
5. Sample instructions complete on chain of custody?	}	Yes	No			]
6. Any missing / extra samples?	<u> </u>	Yes	(No)			i
7. Chain of custody signed when relinquished / receiv	red?	Yes	No			
8. Chain of custody agrees with sample label(s)?		(Yes)	No			Ì
9. Container labels legible and intact?		Yes	No			]
10. Sample matrix / properties agree with chain of cus	tody?	(Yes)	No			7
11. Samples in proper container / bottle?		Yes	No			_
12. Samples properly preserved?		(Yes)	No	N/A		]
13. Sample container intact?		(Yeg)	No			
14. Sufficient sample amount for indicated test(s)?		(Yes)	No			1
15. All samples received within sufficient hold time?		Yes	No			1
16. Subcontract of sample(s)?		Yes	No	(N/A)	-	1
2. Shipping container in good condition? 3. Custody seals intact on shipping container (cooler) and kottles? 4. Chain of Custody present? 5. Sample instructions complete on chain of custody? 6. Any missing / extra samples? 7. Chain of custody signed when relinquished / received? 8. Chain of custody agrees with sample label(s)? 9. Container labels legible and intact? 10. Sample matrix / properties agree with chain of custody? 11. Samples in proper container / bottle? 12. Samples properly preserved? 13. Sample container intact? 14. Sufficient sample amount for indicated test(s)? 15. All samples received within sufficient hold time? 16. Subcontract of sample(s)? 17. VOC sample have zero head space? 18. Cooler 1 No. Cooler 2 No. Cooler 3 No. lbs 3 (o °C lbs °C lbs Nonconformance Document Contact: Contacted by:		(Yes)	No	N/A		1
	ier 3 No.	Cooler 4 No	•	Cooler 5 No.		1
ibs 3.6 °C ibs °C	lbs °C	lbs	°c	lbs	°c	
Nonconfe	ormance Documer	ntation		,		_
Contact: Contacted by:			Date/Time:_			
Regarding:				<del></del>		_
			····			_
Corrective Action Taken:			·			_
		<del></del>				_
						_
Check all that apply:     Cooling process has begun	shortly after sampling	event and o	ut of temper	ahire		•
condition acceptable !	by NELAC 5.5.8.3.1.a.1.	•	•	www. <del>Q</del>		
□ Initial and Backup Temperat □ Client understands and wou			nditions			

# **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 (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: 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

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 377672**



## Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

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





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

Final Ver. 1.000



# Certificate of Analys un

ummary 377672

Basin Environmental Consulting, LLC, Lovington, NM Project Name: Southern Union Gas Landfarm

**nelad** 

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

					 Project Manager:	Diene Dailon, II	
	Lab Id:	377672-0	01				
Analysis Requested	Field Id:	TZ Cell 8	G-1				
Anutysis Requesteu	Depth:	,			·		
	Matrix:	SOIL					
	Sampled:	Jun-14-10 1	2:30				
Anions by E300	Extracted:					·	
	Analyzed:	Jun-18-10 2	20:38				
	Units/RL:	mg/kg	RL				
Chloride		81.2	8.84	,			
Percent Moisture	Extracted:						
	Analyzed:	Jun-18-10 0	8:30				
<u> </u>	Units/RL:	%	RL		·		
Percent Moisture		4.99	1.00				
TPH By SW8015 Mod	Extracted:	Jun-18-10 1	1:05				
	Analyzed:	Jun-19-10 0	7:52		·		
	Units/RL:	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.

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
- **POL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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	I HOHE	ı ax
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: 377672,

Sample: 566133-1-BKS / BKS

**Project ID:** 

Lab Batch #: 811327

Matrix: Solid Batch:

Units: mg/kg	Date Analyzed: 06/18/10 23:51	SURROGATE RECOVERY STUDY							
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
<b>.</b>	Analytes	IA]	[15]	[D]	7610				
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	Control Limits %R	Flags				
Analytes			[D]						
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				
I-Chlorooctane	103	100	103	70-135	L				
o-Terphenyl	49.0	50.1	98	70-135					

Lab Batch #: 811327

Sample: 377669-002 D / MD

Batch: 1

Matrix: Soil

Units: mg/kg Dat	e 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	Flags				
1-Chlorooctane	tes	111	99.6	111	70-135					
o-Terphenyl		51.7	49.8	104	70-135					

Lab Batch #: 811327

Sample: 377672-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 07:52	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1-Chlorooctane	103	99.7	103	70-135					
o-Terphenyl	49.0	49.9	98	70-135					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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	Blank Spike Result	Blank Spike %R  D	Spike Added	Blank Spike Duplicate Result  F	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[10]	[E]	Result [F]	[6]				
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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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	<del>                                     </del>
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



`rk Order #: 377672

Lab Batch #: 811430

Project ID: .

Date Analyzed: 06/18/2010 QC- Sample ID: 377662-005 S Date Prepared: 06/18/2010

Analyst: LATCOR

Batch #:

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\*(C-A)/BRelative Percent Difference [E] = 200\*(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

Project ID:

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg SAMPLE / SAMPLE DUPLICATE R							
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag		
Analyte		[B]					
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

**Percent Moisture** 

**Analyte** 

Batch #: 1

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

Lab Batch #: 811327

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

Date Prepared: 06/18/2010

Analyst: BEV

QC- Sample ID: 377669-002 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	E/SAMPLE DUPLICATE RECOVERY									
TPH By SW8015 Mod	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
Analyte		[2]									
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

# **En...**ronmental 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														-	Pr	ojec	t Na	me:	So	uthe	ern '	<u>Unl</u>	on (	}as	Lar	ndfa	<u>rm</u>		
	Company Name	Basin Environmen	ital Consu	ting, Ll	<u>.c</u>											_		P	roje	zt #:											
	Company Address:	P.O. Box 381	····							•						_		Proj	ect L	.oc:	Lea	Cou	unty,	, NM							
	City/State/Zip:	Lovington, NM 882	260																P	) #: <sub>.</sub>											
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₩ ₩	FÆL	D CODE	4500	Ending Depth	Date	Ĭ	ield Filtered	Total #. of Conteiners	8	HNO,	豆	D S	Na Start	Norse	Other	DW - Drinking Water	GW - Groundwater NP-Non-Potable (	TPH: 418.1 (801544) 801	TPH: TX 1005 TX 1006	affor	Anions (Cl. SO4, Alkatinity)	SAR / ESP / CEC	Metals: A	Semiwalation	EX.	豆	N.O.R.M.	A		ESS.	Standard TAT 4 DAY
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dalias 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				-
ab 10#: 377672				
nitials: AL				
Sample Receipt Che	cklist			
I. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(Yes)	No	None	,
3. Custody seals intact on shipping container (cooler) and kottles?	(Yes)	No	N/A	
. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No		
S. Any missing / extra samples?	Yes	No		
?. Chain of custody signed when relinquished / received?	Yes	No		
3. Chain of custody agrees with sample label(s)?	(Yes)	No		
9. Container labels legible and intact?	Yes	No	<u> </u>	
10. Sample matrix / properties agree with chain of custody?	(Yes)	No		
11. Samples in proper container / bottle?	(Yes)	No		
12. Samples property preserved?	(Yes)	No	N/A	
13. Sample container intact?	(Yes	No	<u> </u>	
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	ەر	lbs	
Nonconformance Docu	mentation			
Contact:Contacted by:		Date/Time:		
	·· <del>-</del>			
Regarding:		<del></del>		
Corrective Action Taken:				
Check all that apply: ☐ Cooling process has begun shortly after samp				

☐ 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 (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: 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

Final Ver. 1,000



## Certificate of Analys ummary 377673

## Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

nelad:

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
r roject wranager:	Dient Danon, II

				Troject Manager.	Dicili Dalloli, II	
Lab Id:	377673-001					
Field Id:	TZ Cell 8 G-2					•
Depth:						
Matrix:	SOIL					
Sampled:	Jun-14-10 12:40					
Extracted:						
Analyzed:	Jun-18-10 20:38			]	·	
Units/RL:	mg/kg RL					
	146 9.13					
Extracted:						
Analyzed:	Jun-18-10 08:30					
Units/RL:	% RL				:	
	7.96 1.00					
Extracted:	Jun-18-10 11:05					
Analyzed:	Jun-19-10 08:19					
Units/RL:	mg/kg RL					
	ND 16.3					<u></u> ,
	537 16.3					
	87.0 16.3					
	624 16.3					
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Units/RL: Extracted: Analyzed: Analyzed: Analyzed: Analyzed:	Field Id:	Field Id: TZ Cell 8 G-2  Depth: Matrix: SOIL  Sampled: Jun-14-10 12:40  Extracted: Analyzed: Jun-18-10 20:38  Units/RL: mg/kg RL  146 9.13  Extracted: Analyzed: Jun-18-10 08:30  Units/RL: % RL  7.96 1.00  Extracted: Jun-18-10 11:05  Analyzed: Jun-19-10 08:19  Units/RL: mg/kg RL  ND 16.3  537 16.3  87.0 16.3	Field Id: Depth: Matrix: SOIL Sampled: Jun-14-10 12:40  Extracted: Analyzed: Jun-18-10 20:38 Units/RL: mg/kg RL 146 9.13  Extracted: Analyzed: Jun-18-10 08:30 Units/RL: % RL 7.96 1.00  Extracted: Jun-18-10 11:05: Analyzed: Jun-19-10 08:19 Units/RL: mg/kg RL ND 16.3 537 16.3 87.0 16.3	Lab Id: 377673-001   Field Id: TZ Cell 8 G-2   Depth:   Matrix: SOIL   Sampled: Jun-14-10 12:40     Extracted: Analyzed: Jun-18-10 20:38   Units/RL: mg/kg	Field Id: TZ Cell 8 G-2  Depth: Matrix: SOIL  Sampled: Jun-14-10 12:40  Extracted: Analyzed: Jun-18-10 20:38  Units/RL: mg/kg RL  146 9.13  Extracted: Analyzed: Jun-18-10 08:30  Units/RL: % RL  7.96 1.00  Extracted: Jun-18-10 11:05  Analyzed: Jun-19-10 08:19  Units/RL: mg/kg RL  ND 16.3  537 16.3  87.0 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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Breht 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: 377673,

**Project ID:** 

Lab Batch #: 811327

**Sample:** 566133-1-BKS/BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 06/18/10 23:51	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	(-)		[D]		
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 00:1	8 St	JRROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		, ,	[D]		
I-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	SU	RROGATE RI	ECOVERY S	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											
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane	Analytes	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	SU	RROGATE RI	ECOVERY S	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]							
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20				

Analyst: BEV

Lab Batch ID: 811327

Sample: 566133-1-BKS

**Date Prepared:** 06/18/2010 Batch #: 1

Date Analyzed: 06/18/2010

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]	Bik. 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



rk Order #: 377673

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	MATI	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\*(C-A)/B
Relative Percent Difference [E] = 200\*(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

Project ID:

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLI	SAMPLE/SAMPLE DUPLICATE RECOVERY										
Anions by E3	00 Parent Samp Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte		[B]										
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	DUPLICAT	E REC	OVERY
Paraent Maistura	Parent Sample	Sample		Control	

Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	[24]	[B]			
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE / SAMPLE DUPLICATE RECOVERY											
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag							
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				<u> </u>	······································										_		Pr	ojec	t Na	me:	So	uthe	m	Jnie	on (	Gas	La	ndfa	rm			
	Company Name	Basin Environmen	ntal Co	nsultin	g, LLC	;														Pr	ojec	t#:											_	
	Company Address:	P.O. Box 381																	F	roje	ect L	.oc:	Lea	Cou	nty,	NM								
	City/State/Zip:	Lovington, NM 88	260																		PC	) <b>#</b> :												
	Telephone No:	(575)605-7210				<b>A</b>	_ Fax No:		(50	)5) 3	96-1	429					_	Re	port	For	rmai	:	X .	Stan	dard		[	] TF	- RP			NPD	ES	
	Sampler Signature	amile	<u> </u>	لابلا	تلاز	<u> </u>	e-mail:		<u>ci</u>	bry	ant	<u>@</u> t	as	in-c	noc	sul	ting	1. CC	<u>m</u>														_	
(lab use	only)	1673		U																			TC TOT	LP:	Ana	yze  -	For:	J	Γ	300		1	72 hrs	]
AB # (lab use only) TO		D CODE	<u>.l</u>	Seginning Depth	Ending Depth	Date Sampled	Time Sampled	ietd Filtered	Total #. of Conteiners		HNO,		1,50,		Na,S.O.		Other (Specify)		specify Oth	Ŕ	TPH: TX 1005 TX 1008	Cettons (Ca, Mg, Na, K)	nions (Ct. SO4, Alkelinity)	SAR / ESP / CEC	Metalis. As Ag tal CG Cr PD Hig Se	Serrivolatiles	BTEX 80218/5030 or BTEX 8280	ACI	O.R.M.	Moviclose		tibit	KUSH TAT (Pre-Schedule) 24, 48,	tandard TAT 4 DAY
01		ell 8 G-2		-		6/14/10	1240	<u> </u>	1	X	-		+	1		+	_	so		X	<u> </u>	3	₹	3	2   3	100	1 2	T T	=	X	+	+	4	<u>s</u>
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Page 11 of 12

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Client

Date/Time:

#### XENCO Laboratories

11.20

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

Lab ID#:	37	1673					•	
Initials:	A1							
		,	Sample Receipt Ch	neck!	ist			
1. Samples on ice?				1	Blue	Water	No	
2. Shipping container	n good con	dition?	·		Yes	No	None	
3. Custody seals intac	t on shippin	g container (c	cooler) and bottles?		(Yes)	No	N/A	
4. Chain of Custody pr	esent?				Yes	No		
5. Sample Instructions	complete o	л chain of cu	stody?		Yes	No		
6. Any missing / extra	samples?				Yes	No		
7. Chain of custody sig	gned when r	elinquished /	received?		Yes	No		
8. Chain of custody ag	rees with sa	umple label(s)	?		(Yes)	No		
9. Container labels leg	ible and inta	act?			Yes	No		
10. Sample matrix / pro	operties agr	ee with chain	of custody?		(Yes)	No		
11. Samples in proper	container /	bottle?			Yes	No		
12. Samples property	preserved?		·		Yes	No	N/A	
13. Sample container i	ntact?				(Yes)	No		
14. Sufficient sample a	mount for i	ndicated test	s)?		(Yes)	No		
15. Ali samples receive	ed within su	fficient hold t	ime?		(Yes)	No		
16. Subcontract of sar	npie(s)?				Yes	No	(N/A)	
17. VOC sample have	zero head s	pace?			(Yes)	No	N/A	
18. Cooler 1 No.	Cooler 2		Cooler 3 No.		Cooler 4 No	).	Cooler 5 No.	
1bs 3.6	°C lb	s °(	lbs	°င	ibs	ەر	lbs	°C
	1 1	Non	conformance Doc	ume	ntation			
Contact:		_ Contacted 3	w:			Date/Time:		
COMMENT		_ 00	·}·			<b>5</b> 440 . 2		
Regarding:		<u></u>						
			·					
Corrective Action Tak	en:							
		-						
Check all that apply:	co	ndition accep	pegun shortly after san table by NELAC 5.5.8.3 nperature confirm out	.1.a.1.	•		rature	
			d would like to procee					

# **Analytical Report 377662**

#### for

## **Basin Environmental Consulting, LLC**

Project Manager: Camille Bryant

Sothern 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 (AALII), 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

Sothern 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

Sothern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	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	· <b>S</b>	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





Client Name: Basin Environmental Consulting, LLC

Project Name: Sothern Union Gas Landfarm



Project ID:

Work Order Number: 377662

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-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.

Final Ver. 1.000



Certificate of Analys

**Jummary 377662** 

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Sothern Union Gas Landfarm

inelad:

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

								Project Ma	nager:	Brent Barron,	11	
	Lab Id:	377662-0	Ю1-	377662-0	02	377662-0	003	377662-0	004	377662-0	005	
Analysis Requested	Field Id:	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	
Analysis Requesteu	Depth:									1	1	
	Matrix:	SOIL	·	SOIL		SOIL		SOIL		SOIL		
	Sampled:	Jun-14-10	12:50	Jun-14-10 1	3:00	Jun-14-10 1	3:10	Jun-14-10	13:20	Jun-14-10	3:30	,
Anions by E300	Extracted:											
	Analyzed:	Jun-18-10	10:48	Jun-18-10 1	0:48	Jun-18-10 1	10:48	Jun-18-10	10:48	Jun-18-10 2	20:38	
	Units/RL:	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	
Percent Moisture	Extracted:											
	Analyzed:	Jun-18-10	08:30	Jun-18-10 (	8:30	Jun-18-10 0	08:30	Jun-18-10 (	08:30	Jun-18-10 (	8:30	
	Units/RL:	%	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	
TPH By SW8015 Mod	Extracted:	Jun-18-10	10:55	Jun-18-10 1	0:55	Jun-18-10 1	10:55	Jun-18-10	10:55	Jun-18-10	0:55	
	Analyzed:	Jun-21-10	13:16	Jun-21-10 13:44		Jun-21-10 14:12		Jun-21-10 14:39		Jun-21-10	5:07	
	Units/RL:	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	<u> </u>	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

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## 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.
- RPD exceeded lab control limits.
- 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
, ,	(361) 884-0371	(361) 884-911



# Form 2 - Surrogate Recoveries

Project Name: Sothern Union Gas Landfarm

Vork Orders: 377662,

Lab Batch #: 811568

Sample: 566290-1-BKS/BKS

Matrix: Solid Batch:

Project ID:

Units: mg/kg Date Analyzed: 06/19/10 13:19	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery Control Limits %R %R [D]		Flags
Analytes			,-,		
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 13:4	7 St	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
I-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 <b>SU</b>	JRROGATE R	ECOVERY	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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	[78]		[D]	,,,,				
1-Chlorooctane	99.0	99.9	99	70-135				
o-Terphenyl	46.8	50.0	94	70-135				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



# Form 2 - Surrogate Recoveries

Project Name: Sothern 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	SU	RROGATE F	True Amount [B] Recovery   Control			
TPH By SW8015 Mod	Amount Found [A]	Amount	%R	Limits	Flags	
Analytes			[D]			
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:

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	Control Limits %R	Flags			
Analytes	. ,		[D]					
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 Anal	yzed: 06/21/10 14:39	SU	RROGATE R	<b>ECOVERY</b>	STUDY	
TPH By SW8015	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
I-Chlorooctane	77.0	99.5	77	70-135	<u> </u>			
o-Terphenyl	38.1	49.8	77	70-135				

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### BS / BSD 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]				
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  Analytes	Blank Sample Result [A]	Spike Added	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 #: 377662

Lab Batch #: 811425

Date Prepared: 06/18/2010

**Project ID:** 

Date Analyzed: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377603-001 S

Batch #:

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	[A]	[D]						
Chloride	. 413	227	648	104	75-125			

Lab Batch #: 811430

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

**Analyst: LATCOR** 

QC- Sample ID: 377662-005 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATE	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\*(C-A)/B Relative Percent Difference [E] = 200\*(C-A)/(C+B)
All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Sothern Union Gas Landfarm

Work Order #: 377662

Lab Batch #: 811425

Project ID:

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: LATCOR Matrix Soil

QC- Sample ID: 377603-001 D

Batch #:	1	Matrix: So	ì
		CARADIE DID	-

Reporting Unit	ts: mg/kg	SAMPLE/SAMPLE DUPLICATE RECOVERY							
	Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
Chloride		413	439	-6	20				

Lab Batch #: 811430

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

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE / SAMPLE DUPLICATE RECOVERY							
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag			
Analyte	'	{ <b>B</b> }	1	}				
Chloride	55.9	48.5	14	20				

Lab Batch #: 811178

Date Analyzed: 06/18/2010

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

Analyst: JLG

OC- Sample ID: 377654-001 D

Batch #: 1

Matrix: Soil

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

Lab Batch #: 811180

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Analyst: JLG

QC- Sample ID: 377662-005 D

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE / SAMPLE DUPLICATE RECOVERY							
Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
Percent Moisture	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**

240

30.5



Project Name: Sothern Union Gas Landfarm

Work Order #: 377662

Lab Batch #: 811568

Project ID:

71

3

35 35

Date Analyzed: 06/21/2010

TPH By SW8015 Mod

Analyte

Date Prepared: 06/18/2010

Analyst: BEV

QC- Sample ID: 377657-005 D

C6-C12 Gasoline Range Hydrocarbons
C12-C28 Diesel Range Hydrocarbons

C28-C35 Oil Range Hydrocarbons

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
 ND	16.7	NC	35	

503

29.5

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

# <sup>2</sup>age 13 of 14

# **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									-					_ P	roje	nt Na	me:	201	ithe	m U	Julo	<u>и G</u>	as L	Land	term	<u> </u>		
	Company Name Basin Environmental Co	nsultin	g, LLC	;											<u>.</u>	P	roje	at #:											
	Company Address: P.O. Box 381														_	Proi	ect l	.oc:	Laa	Cou	inty,	NM							
•	-														_			•											_
	City/State/Zip: LovIngton, NM 88260														-		P	O#:						—					
*	Telephone No: (575)605-7210	د ،	-	•	Fax No	:	<u>(50</u>	5) 3	96-1	429					Repo	rt Fo	ma	t:	Χ,	Stanc	dard			TRE	₹P		] NPt	DES	j
	Sampler Signature:	15	بعلا	xuet .	e-mail	:	<u>ci</u> l	рιλ	ant	@t	asi	in-c	cons	ulti	ng.com	<u> </u>													
(lab use	only)	•	,	5	•											F			TC		Anad	yze I	För:		16	<b>₹</b>	$\dashv$	ç	
ORDE	377662							Pr	eser	vatic	n & 4	of	Conta	Iners	Matrix		T		101/	-	#	Ŧ	X		200	7		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	
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AB # (lath		Seginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Cotal #. of Containers		HNO,	_	H <sub>2</sub> SO,	₽ B B B B	Q Star	Other (Specify)	DW-Drinking Water GW - Groundwater	TPH: 418.1 (80154)	٦	Cetions (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkelimity)	Metate: As An Bo CA CY ON Ha S.	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260		NORM	3		FE	nda
	FIELD CODE	8	Ü			į	_	-	-	호	Ť	2	2 2	8	<del></del>	4-	+	3	<u> </u>	3 3		18	鰛	Σ.			igspace		
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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 P

Page 1 of 1

client: Basin Env.				
Date/Time: 6:17:10 11:20			•	•
ab ID#: 377662				
nitials: AL				
Sample Receipt	t 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 kottles	Yes)	No	NA	
1. Chain of Custody present?	Yes	No		
5. Sample instructions complete on chain of custody?	Yes	No	•	
3. 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 property 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	) <u>.</u>	Cooler 5 No.	
lbs 3.6 °C lbs °C lbs	°C lbs	٥.	lbs	-
Nonconformance D	Ocumentation			
Contact: Contacted by:		Date/Time:		
B Can.				
Regarding:				
Corrective Action Taken:				
•			<del></del>	
				•
Check all that apply:   Cooling process has begun shortly after		ut of tempe	rature	
condition acceptable by NELAC 5.5		ar or write	temie	

☐ 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

Sothern 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)

Final Ver. 1.000





22-JUN-10

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

Reference: XENCO Report No: 377663

**Sothern 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

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 377663**



## Basin Environmental Consulting, LLC, Lovington, NM

Sothern 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

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 Analys ummary 377663

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Sothern Union Gas Landfarm

inelad:

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

							rroject Mai	iagei:	brein barron, n	
Lab Id:	377663-0	01	377663-0	002	377663-0	03	377663-0	04		
Field Id:	TZ Cell 10	<b>G</b> -1	TZ Cell 10	G-2	TZ Cell 10	G-3	TZ Cell 10	G-4		
Depth:										
Matrix:	SOIL		SOIL	SOIL		-	SOIL			,
Sampled:	Jun-14-10 l	3:40	Jun-14-10 13:50		Jun-14-10 14:00		Jun-14-10 1	4:10		-
Extracted:	1111									
Analyzed:	Jun-18-10 2	Jun-18-10 20:38		Jun-18-10 20:38		0:38	Jun-18-10 2	0:38		
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
	16.7	4.32	11.3	4.35	25.7	8.58	44.8	8.61		
Extracted:	Jun-18-10 11:05		Jun-18-10 11:05		Jun-18-10 11:05		Jun-18-10 11:05			
Analyzed:	Jun-19-10 (	01:11	Jun-19-10 (	01:38	Jun-19-10 0	2:04	Jun-19-10 0	2:31		ļ.
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
	ND	15.5	, ND	15.5	ND	15.2	ND	15.3		
	600	15.5	329	15.5	200	15.2	. 576	15.3		
	135	15.5	80.5	15.5	58.2	15.2	137	15.3		
	735	15.5	410	15.5	258	15.2	713	15.3		
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL:  Extracted: Analyzed:	Field Id: Depth: Matrix: SOIL Sampled: Jun-14-10 1  Extracted: Analyzed: Units/RL: mg/kg 16.7  Extracted: Jun-18-10 1  Analyzed: Jun-18-10 0  Mis/RL: mg/kg ND 600 135	Field Id: TZ Cell 10 G-1  Depth: Matrix: SOIL  Sampled: Jun-14-10 13:40  Extracted: Analyzed: Jun-18-10 20:38  Units/RL: mg/kg RL  16.7 4.32  Extracted: Jun-18-10 11:05  Analyzed: Jun-19-10 01:11  Units/RL: mg/kg RL  ND 15.5  600 15.5  135 15.5	Field Id:         TZ Cell 10 G-1         TZ Cell 10           Depth:         Matrix:         SOIL         SOIL           Sampled:         Jun-14-10 13:40         Jun-14-10 1           Extracted:         Analyzed:         Jun-18-10 20:38         Jun-18-10 1           Units/RL:         mg/kg         RL         mg/kg           Extracted:         Jun-18-10 11:05         Jun-18-10 1           Analyzed:         Jun-19-10 01:11         Jun-19-10 0           Units/RL:         mg/kg         RL         mg/kg           ND         15.5         ND           600         15.5         329           135         15.5         80.5	Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2           Depth:         Matrix:         SOIL         SOIL           Sampled:         Jun-14-10 13:40         Jun-14-10 13:50           Extracted:         Analyzed:         Jun-18-10 20:38         Jun-18-10 20:38           Units/RL:         mg/kg         RL         mg/kg         RL           Extracted:         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05           Analyzed:         Jun-19-10 01:11         Jun-19-10 01:38         mg/kg         RL           Wints/RL:         mg/kg         RL         mg/kg         RL           ND         15.5         ND         15.5           600         15.5         329         15.5           135         15.5         80.5         15.5	Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2         TZ Cell 10           Depth:         Matrix:         SOIL         SOIL	Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2         TZ Cell 10 G-3           Depth:         Matrix:         SOIL         SOIL         SOIL         SOIL         SOIL         Jun-14-10 13:50         Jun-14-10 14:00           Extracted:         Analyzed:         Jun-18-10 20:38         Jun-18-10 20:38         Jun-18-10 20:38         Jun-18-10 20:38         mg/kg         RL         mg/kg         RL         mg/kg         RL           Lonits/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL           Lonits/RL:         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05         Jun-19-10 02:04         Jun-19-10 01:38         Jun-19-10 02:04         mg/kg         RL         mg/kg         RL         mg/kg         RL         mg/kg         RL           ND         15.5         ND         15.5         ND         15.2         200         15.2           600         15.5         80.5         15.5         58.2         15.2	Lab Id:         377663-001         377663-002         377663-003         377663-03           Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2         TZ Cell 10 G-3         TZ Cell 10           Depth:         Matrix:         SOIL         SOIL <th< td=""><td>Lab Id:         377663-001         377663-002         377663-003         377663-004           Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2         TZ Cell 10 G-3         TZ Cell 10 G-4           Depth:         Matrix:         SOIL         <th< td=""><td>Lab Id:         377663-001         377663-002         377663-003         377663-004           Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2         TZ Cell 10 G-3         TZ Cell 10 G-4           Depth:         Matrix:         SOIL         SOIL         SOIL         SOIL           Sampled:         Jun-14-10 13:40         Jun-14-10 13:50         Jun-14-10 14:00         Jun-14-10 14:10           Extracted:         Analyzed:         Jun-18-10 20:38         Jun-18-10 20:38         Jun-18-10 20:38         Jun-18-10 20:38           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           Extracted:         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05           Analyzed:         Jun-19-10 01:11         Jun-19-10 01:38         Jun-19-10 02:04         Jun-19-10 02:31           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           ND         15.5         ND         15.5         ND         15.2         ND         15.3           600         15.5         329         15.5         200         15.2         576         15.3           135         15.5         80.5         15.5</td></th<></td></th<>	Lab Id:         377663-001         377663-002         377663-003         377663-004           Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2         TZ Cell 10 G-3         TZ Cell 10 G-4           Depth:         Matrix:         SOIL         SOIL <th< td=""><td>Lab Id:         377663-001         377663-002         377663-003         377663-004           Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2         TZ Cell 10 G-3         TZ Cell 10 G-4           Depth:         Matrix:         SOIL         SOIL         SOIL         SOIL           Sampled:         Jun-14-10 13:40         Jun-14-10 13:50         Jun-14-10 14:00         Jun-14-10 14:10           Extracted:         Analyzed:         Jun-18-10 20:38         Jun-18-10 20:38         Jun-18-10 20:38         Jun-18-10 20:38           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           Extracted:         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05           Analyzed:         Jun-19-10 01:11         Jun-19-10 01:38         Jun-19-10 02:04         Jun-19-10 02:31           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           ND         15.5         ND         15.5         ND         15.2         ND         15.3           600         15.5         329         15.5         200         15.2         576         15.3           135         15.5         80.5         15.5</td></th<>	Lab Id:         377663-001         377663-002         377663-003         377663-004           Field Id:         TZ Cell 10 G-1         TZ Cell 10 G-2         TZ Cell 10 G-3         TZ Cell 10 G-4           Depth:         Matrix:         SOIL         SOIL         SOIL         SOIL           Sampled:         Jun-14-10 13:40         Jun-14-10 13:50         Jun-14-10 14:00         Jun-14-10 14:10           Extracted:         Analyzed:         Jun-18-10 20:38         Jun-18-10 20:38         Jun-18-10 20:38         Jun-18-10 20:38           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           Extracted:         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05         Jun-18-10 11:05           Analyzed:         Jun-19-10 01:11         Jun-19-10 01:38         Jun-19-10 02:04         Jun-19-10 02:31           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           ND         15.5         ND         15.5         ND         15.2         ND         15.3           600         15.5         329         15.5         200         15.2         576         15.3           135         15.5         80.5         15.5

Brent Barron, II



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

## Certificate of Analysis Summary 377663

Basin Environmental Consulting, LLC, Lovington, NM



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

Report Date: 22-JUN-10

								Project Man	ager:	Brent Barron, II	
	Lab Id:	377663-0	01	377663-0	02	377663-0	03	377663-0	04		
Analysis Passastad	Field Id:	TZ Cell 10	G-1	TZ Cell 10	G-2	TZ Cell 10	G-3	TZ Cell 10	G-4		
Analysis Requested	Depth:									í	
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Jun-14-10 1	3:40	Jun-14-10 1	3:50	Jun-14-10	4:00	Jun-14-10 1	4:10		
Percent Moisture	Extracted:										
	Analyzed:	Jun-18-10 0	8:30	Jun-18-100	8:30	Jun-18-10 (	08:30	Jun-18-10 0	8:30	į.	
	Units/RL:	%	RL	%	RL	%	RL	%	RL		<u></u>
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

Page



# 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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	(214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800



# Form 2 - Surrogate Recoveries

Project Name: Sothern Union Gas Landfarm

Work Orders: 377663,

**Project ID:** 

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Matrix: Solid Batch:

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	Control Limits %R	Flags							
Analytes			[D]									
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:

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	Control Limits %R	Flags							
Analytes			[D]									
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 00:44	SU	RROGATE R	<b>ECOVERY</b>	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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  Analytes	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	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	213	200	107	70-135	· · ·
o-Terphenyl .	99.0	100	99	70-135	· · · ·

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



# Form 2 - Surrogate Recoveries

Project Name: Sothern Union Gas Landfarm

Vork Orders: 377663,

Lab Batch #: 811327

Sample: 377663-003 / SMP

**Project ID:** 

Matrix: Soil Batch:

Units: mg/kg	Date Analyzed: 06/19/10 02:04	SURROGATE RECOVERY STUDY												
	y 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 02:3	SU	SURROGATE RECOVERY STUDY												
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags									
Analytes			[D]											
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									

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution Surrogate Recovery [D] = 100 \* A / B



## **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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]								
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 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					
				<u> </u>		1010	101		70.125	25	<del></del>					
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	<u> </u>	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



ork Order #: 377663

Lab Batch #: 811430

Date Prepared: 06/18/2010

Batch #:

**Project ID:** 

Date Analyzed: 06/18/2010 Date Prepared:

Analyst: LATCOR

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

Matrix: Soil

MATI	MATRIX / MATRIX SPIKE RECOVERY STUDY													
Parent Sample Result	Spike Added	Result	%R	Control Limits %R	Flag									
[A]	[B]		1-7											
55.9	206	270	104	75-125										
	Parent Sample Result [A]	Parent Sample Spike Result Added [A] [B]	Parent Spiked Sample Sample Result Added [C]	Parent Sample Result [A] Spiked Sample Result Result [B] Spiked Sample Result [C] [D]	Sample Spike Result %R Limits Result Added [C] [D] %R  [A] [B]									

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

Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Sothern Union Gas Landfarm

Work Order #: 377663

Lab Batch #: 811430

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

Project ID: Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
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  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 / SAMPLE DUPLICATE RECOVERY												
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag									
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

#### 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														_	P	roje	ct Ne	me:	Soi	ıthe	ern	<u>Uni</u>	on (	<u>Gas</u>	Lan	ıdfar	m		
	Company Name	Basin Environmental (	Consulti	1g, LLC	<u> </u>											_		P	roje	ct #:			·····								
	Company Address:	P.O. Box 381														_		Pro	ect l	Loc:	Lea	Cou	ınty,	, NM	<u> </u>						
	City/State/Zip:	Lovington, NM 88260														_			P	O #:											
	Telephone No:	(575)605-7210				_ Fax No:		<u>(50</u>	)5) <u>3</u>	96-1	429						Repo	rt Fo	arma	t:	X,	Stan	dard	ı	. [	] TF	₹.		□ N	POE	s
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LAB # (lab use only)		LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers					HOSA			ter StStudg	CW - Groundwater S. Soil/Soil NP-Mon-Potable Soedfy Oth	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1008	Cations (Ca. Mg, Ne, K)	Anions (Cl. SO4, Albatinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Semivolatiles	BTEX 8021B/5030 or BTEX 8280	RCI	N.O.R.M.	Chloridas E		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
	TZ Co	ell 10 G-1			6/14/10	1340			х				$\neg$		T	1	OIL	x				T	7	Ť	7	忊	Ħ	x	T	丰	X
	TZ Ce	ell 10 G-2			6/14/10	1350		1	x					Ι		s	OIL	x				T	T	T	T	1	П	x		T	x
	TZ Ce	ell 10 G-3			6/14/10	1400		1	X							S	OIL	x				T	I	I	T	Π		Х	I	Τ	x
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Page 13 of 14



#### XENÇO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadeiphia 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.			-		4
Date/Time:	17.10 11	.70				•
Lab ID#:	377663					
Initials:	A) -					
		Comple Bessiet Ch	-			
,		Sample Receipt Ch	ecklist			
1. Samples on ice?			Blue	Water	No	
2. Shipping container in	good condition?		Yes	No	None	
3. Custody seals intact of	on shipping containe	(Yes)	No	N/A		
4. Chain of Custody pre-	sent?		Yes	No		
5. Sample instructions of	complete on chain of	custody?	Yes	No		
6. Any missing / extra sa	amples?		Yes	No		
7. Chain of custody sign	ned when relinquishe	d / received?	(Yes)	No		
8. Chain of custody agre	es with sample labe	I(s)?	(Yes)	No		
9. Container labels legit	ole and intact?		Yes	No		],
10. Sample matrix / prop	perties agree with ch	ain of custody?	(Yeg)	No		
11. Samples in proper c	ontainer / bottle?		Yes	No		
12. Samples properly pr	reserved?		(Yes)	No	N/A	
13. Sample container in	tact?		(Yes)	No		
14. Sufficient sample an	nount for indicated to	est(s)?	(Yes)	No		
15. All samples received	d within sufficient ho	ld time?	(Yes)	No		
16. Subcontract of samp	ple(s)?		Yes	No	(N/A)	
17. VOC sample have ze	ero head space?		(Yes)	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 No	o	Cooler 5 No.	
ibs 3.6 °€	lbs	°C lbs	°C lbs	°(	lbs	°C
•	N	onconformance Docu	mentation			
Cantach	Contacts			Date/Time:		
Contact	oonacu	.d by		Date i une.		<del></del>
Regarding:						
				,		
Corrective Action Taker	•					
Collective Monoli Javes			- <u></u>			
Check all that apply:		as begun shortly after samp ceptable by NELAC 5.5.8.3.		out of tempe	rature	
<b>!</b>		Temperature confirm out or		nditions		

☐ 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

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Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Utah (AALII), 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

Final Ver. 1.000



#### **Certificate of Analys** ummary 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

							Project Manager:	Dient Ballon, II	
	Lab Id:	377669-0	001	377669-0	02				•
Analysis Requested	Field Id:	TZ Cell 11	G-1	TZ Cell 11	G-2		_		
Analysis Kequesieu	Depth:								
	Matrix:	SOIL		SOIL			İ		
	Sampled:	Jun-14-10	14:20	Jun-14-10 1	4:30				
Anions by E300	Extracted:	•				,			
	Analyzed:	Jun-18-10	20:38	Jun-18-10 2	20:38				
٠.	Units/RL:	mg/kg	RL	mg/kg	RL				`
Chloride		469	43.4	169	21.6	•			
Percent Moisture	Extracted:								
	Analyzed:	Jun-18-10	08:30	Jun-18-10 0	8:30				
	Units/RL:	%	RL	%	RL				
Percent Moisture		3.28	1.00	2.79	1.00				
TPH By SW8015 Mod	Extracted:	Jun-18-10	11:05	Jun-18-10 1	1:05				
	Analyzed:	Jun-19-10	06:06	Jun-19-10 (	06:32				
	Units/RL:	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.

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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: 377669,

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	Control Limits %R	Flags		
Analytes			[D]				
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/19/10 00:18	SURROGATE RECOVERY STUDY						
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	Mayes	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	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount (B)	Recovery %R [D]	Control Limits %R	Flags			
I-Chlorooctane	103	100	103	70-135				
o-Terphenyl	49.0	50.1	98	70-135				

Lab Batch #: 811327

Sample: 377669-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/19/10 06:06	SURROGATE RECOVERY STUDY						
•	SW8015 Mod nalytes	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						
ТРН	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			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>\*</sup>Il results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders: 377669,

Project ID:

Lab Batch #: 811327

Sample: 377669-002 D / MD

Matrix: Soil Batch: 1

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	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	111	99.6	111	70-135			
o-Terphenyl	51.7	49.8	104	70-135			

Surrogate Recovery [D] = 100 \* A / B
All results are based on MDL and validated for QC purposes.

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### BS / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377669

**Date Prepared:** 06/18/2010 **Batch #:** 1

**Project ID:** 

Analyst: LATCOR Lab Batch ID: 811430

Sample: 811430-1-BKS

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

Matrix: Solid

Units: mg/kg

Anions by E300

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
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
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

Analytes Chloride

Sample: 566133-1-BKS

Batch #: 1

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg TPH By SW8015 Mod Blank Spike Biank Blank Spike Blank Blk. Spk Control Control Sample Result Added Spike Spike RPD Added Spike Dup. Limits Limits Flag Result %R Duplicate % %R %RPD %R [A] [B] [C] Result |F| [D] [E] [G]**Analytes** C6-C12 Gasoline Range Hydrocarbons ND 1000 1160 116 997 1210 121 70-135 35 C12-C28 Diesel Range Hydrocarbons ND 1000 842 997 82 70-135 815 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 Prepared: 06/18/2010

Project ID:

Date Analyzed: 06/18/2010 **QC- Sample ID:** 377662-005 S

Analyst: LATCOR

Reporting Uniter marka

Batch #: Matrix: Soil MATRIY / MATRIY SPIKE DECOVERY STUDY

Reporting Units: mg/kg	MAIRIA / MAIRIA SPIRE RECOVERT STUDI							
Inorganic Anions by EPA 300	Parent Sample	Spike	Spiked Sample Result	%R	Control Limits	Flag		
Analytes	Result [A]	Added {B}	{C}	[D]	%R			
Chloride	55.9	206	270	104	75-125			

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

BRL - Below Reporting Limit



## **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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE / SAMPLE DUPLICATE RECOVERY							
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag			
Chloride	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	RPD	Control Limits %RPD	Flag
Analyte		[B]			
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 / SAMPLE DUPLICATE RECOVERY									
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
C6-C12 Gasoline Range Hydrocarbons	ND	ND	NC	35	<u> </u>						
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														-	Pı	rojec	:t Na	ıme:	Sc	uth	ern	Uni	on (	Gas	La	ndfa	<u>rm</u>		
	Company Name	Basin Environment	ni Consulti	ng, LLC	>											_		P	roje	ct #:											
	Company Address:	P.O. Box 381	-			<del> </del>		· · · ·			-					-		Proj	ect (	Loc:	Lei	Co	unty,	, NM							
	City/State/Zip:	Lovington, NM 8826	10													-			P	O#:											<u> </u>
	Telephone No:	(575)605-7210	_			Fax No:		<u>(50</u>	5) 3	96-1	429	)				. 1	Repo	rt Fo	rma	t	X	Sta	ndaro	i		] TF	RP			NPDE	S
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LAB # (lab use onby)		_D CODE	Beginning Depth	Ending Depth	Date Sempled	Time Sampled	Field Fittered	Total #. of Containers	82				Nach Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		Other ( Specify)	SI-Stude		TPH: 418.1 (8015M) 8015	TPH: TX 1005 TX 1006	Cattons (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkatinity)	i I	Metals: As Ag Ba Cd Cr Pb Hg Se	Voisities	BTEX 8021B/3030 or BTEX 8280	RCI	N.O.R.M.	"Mericlos Ez		Ī₹	
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miemi, 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 10#: 377669	·			
Initials: AL				
Sample Receipt Chec	kiist	'n		
1. Samples on ice?	8lue_	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?	(Yè	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)?	(Ŷes)	No		
15. All samples received within sufficient hold time?	(Yes)	No		
16. Subcontract of sample(s)?	Yes	No	(NA)	
17. VOC sample have zero head space?	(Yes)	· No	NA	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	).	Cooler 5 No.	
	C lbs	%(	T	°C
Nonconformance Docum	entation			
		Date/Time:		
Contacted by:		Date: IIIIe.		
Regarding:		· · · · · · · · · · · · · · · · · · ·		
Corrective Action Taken:				
	<del></del>			
	·			
Check all that apply:	ng event and d	ut of tempe	erature	

condition acceptable by NELAC 5.5.8.3.1.a.1.

☐ Client understands and would like to proceed with analysis

☐ Initial and Backup Temperature confirm out of temperature conditions

# **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 (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: 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

Final Ver. 1.000



# Certificate of Analy. Su

**Summary 377676** 

Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inelad:

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	
	Lab Id:	377676-001				
Analysis Requested	Field Id:	TZ Cell 12 G-1			•	
Anatysis Kequesteu	Depth:					-
	Matrix:	SOIL				
	Sampled:	Jun-14-10 14:40			_	
Anions by E300	Extracted:					
	Analyzed:	Jun-18-10 20:38				
· .	Units/RL:	mg/kg RL				
Chloride		47.3 21.8				
Percent Moisture	Extracted:					
	Analyzed:	Jun-18-10 08:30	,			
	Units/RL:	% RL				
Percent Moisture		3.79 1.00				
TPH By SW8015 Mod	Extracted:	Jun-18-10 11:05				
	Analyzed:	Jun-19-10 09:40				
	Units/RL:	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 warramty 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

Vork Orders: 377676, 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	Control Limits %R	Flags								
Analytes	[A]	[15]	[D]	/ <b>U</b> K									
I-Chlorooctane	120	100	120	70-135	<del></del>								
o-Terphenyl	45.7	50.0	91	70-135									

Lab Batch #: 811327

**Sample:** 566133-1-BSD / BSD

Batch:

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	Control Limits %R	Flags								
				[D]										
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								
I-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	Control Limits %R	Flags								
Analytes		,	[D]	-									
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	Control Limits %R	Flags								
Analytes	,		[D]										
1-Chlorooctane	117	99.8	117	70-135									
o-Terphenyl	53.5	49.9	107	70-135									

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analytes		[B]	[C]	[ <b>D</b> ]	[E]	Result [F]	[G]						
Chloride	ND	10.0	10.5	105	10	10.6	106	1	75-125	20 •			

Analyst: BEV

Lab Batch ID: 811327

Date Prepared: 06/18/2010

Date Analyzed: 06/18/2010

Sample: 566133-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
C6-C12 Gasoline Range Hydrocarbons	ND	1000	1160	116	997	1210	121	4	70-135	35	<del> </del>			
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



rk Order #: 377676

Lab Batch #: 811430

**Date Analyzed:** 06/18/2010 QC- Sample ID: 377662-005 S

Date Prepared: 06/18/2010

**Project ID:** 

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUDY												
Inorganic Anions by EPA 300  Analytes  Chloride		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\*(C-A)/B Relative Percent Difference [E] = 200\*(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

Project ID:

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
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

**Percent Moisture** 

**Analyte** 

Batch #:

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE / SAMPLE DUPLICATE RECOVERY											
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag							
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

1 . Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE / SAMPLE DUPLICATE RECOVERY												
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
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									

# Enteronmental 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			·											_	Pr	ojec	t Na	me:	So	uthe	<u>ern</u>	<u>Uni</u>	on (	3as	Lar	ıdfa	rm		
	Company Name	Basin Environmental Co	onsultin	g, LLC	:											-		Pi	rojec	t#:						·					
	Company Address:	P.O. Box 381														_	1	Proje	ect i	.oc:	Lea	Cou	ınty,	, NM	i						
	City/State/Zip:	Lovington, NM 88260				· · · · · · · · · · · · · · · · · · ·					_					_	PO #:														
	Telephone No:	(575)605-7210				Fax No:		(50	5) 3	96-1	429					. F	lepor	t Fo	mai	=	X,	Sten	ndard	i		] TR	≀RP			1PDE	s
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ORDER	1#: 5	17676							Pre	serv	ado	n & /	of C	ontal	ners	M	etrix	g			101/	-	+	+	X	-1		18	Í	\$. 25.	
LAB # (leb use only)	FIE	LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce	HNO,	HCI	H,SO.	NBOH NBOH	None	Other (Spedfy)	<b>1</b>	UV = Groundwater S=Sou/Sou NP=Non-Potable Specify oth	TPH: 418.1 (8015M) 8018	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Be Cd Cr Pb Hg Se	Volaties	BTEX 80218/5030 or BTEX 8280	RCI	N.O.R.M.	Chloridge E300)		- 1 - €	Standard TAT 4 DAY
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Page 11 of 12



#### 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	1. U	<u>ව</u>						
Lab ID#:	377671	P		<del></del>					
Initials:	AL			<del></del>					
		ş	ample Re	 ceipt Cl	ieck	list			
1. Samples on ice?						Blue	(Water)	No	
2. Shipping container in		<del></del>				(Yes)	<u>No</u>	None	
3. Custody seals intact of	on shipping contai	ner (co	oler) and ito	ttles?		(Yes)	No	N/A	i
4. Chain of Custody pres	sent?					(Yes)	No		
5. Sample instructions c	omplete on chain	of cus	tody?			(Yes)	No_		
6. Any missing / extra sa	imples?					Yes	(No)	<u> </u>	
7. Chain of custody sign	ed when relinquis	hed / r	eceived?			(Yes)	No		
8. Chain of custody agree	es with sample la	bel(s)?				(Yes)	No		
9. Container labels legib	le and intact?					(Yes)	No		
10. Sample matrix / prop	erties agree with	hain c	of custody?			(Yes)	No		
11. Samples in proper co	ontainer / bottle?					(Yes)	No		
12. Samples properly pro	eservød?					(Yes	No	N/A	
13. Sample container int	act?					(Yes)	No		
14. Sufficient sample an	ount for indicated	test(s	)?			(Ŷes)	No		
15. All samples received	within sufficient l	noid tit	ne?			(Yes)	No		
16. Subcontract of samp	ole(s)?					Yes	No	(NA)	
17. VOC sample have ze						(fes )	No	NA	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No	) <u>.</u>		Cooler 4 No	).	Cooler 5 No.	
1bs 3.6 °C	lbs	°C		lbs	°c	ibs	°c	T	°c
,		None	onforman	ce Doc	ume	ntation			
Contact:	Conta	rend bu	,				Date/Time:		
Contact		cied by	·			<u> </u>	Date: I tille		
Regarding:								· · · · · · · · · · · · · · · · · · ·	
Corrective Action Taker	n:								
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		_							·····
Check all that apply:	Cooling process	has be	egun shortly	वधित ह्या	pling	event and o	ut of tempe	rature	

and the second

Final Ver. 1.000

condition acceptable by NELAC 5.5.8.3.1.a.1.

Client understands and would like to proceed with analysis

☐ Initial and Backup Temperature confirm out of temperature conditions

# **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.

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. 377677 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 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

Final Ver. 1.000



#### **Certificate of Analys** ummary 377677

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Analysis Requested

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	
,		
 ,		

	Matrix:	SOIL					
	Sampled:	Jun-14-10 14:50		·	,		
Anions by E300	Extracted:	•					
	Analyzed:	Jun-18-10 20:38					
	Units/RL:	mg/kg RL					
Chloride		347 22.0	-				
Percent Moisture	Extracted:				10 10 10 10 10 10 10 10 10 10 10 10 10 1		
	Analyzed:	Jun-18-10 08:30					
	Units/RL:	% RL				·	
Percent Moisture		4.66 1.00					
TPH By SW8015 Mod	Extracted:	Jun-18-10 11:05					
	Analyzed:	Jun-19-10 10:07					
	Units/RL:	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 Laboratorics 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

Lab Id:

Field Id:

Depth:

377677-001

TZ Cell 13 G-1

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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	Pnone	rax .
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: 377677,

**Project ID:** 

Lab Batch #: 811327

Sample: 566133-1-BKS / BKS

Batch: 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				
· · · · · · · · · · · · · · · · · · ·	<del></del>								
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:

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	Control Limits %R	Flags				
Analytes			[D]						
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 00:44	SU	RROGATE RI	ECOVERY S	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/19/10 10:07	SURROGATE RECOVERY STUDY								
ТРН	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					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;il 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		BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUL	DY							
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag						
Analytes		[B]	· [C]	[D]	[Æ]	Result, [F]	[G] .										
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  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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



irk Order #: 377677

Lab Batch #: 811430

QC- Sample ID: 377662-005 S

Date Analyzed: 06/18/2010

Date Prepared: 06/18/2010

Project ID:

Analyst: LATCOR

Batch #:

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\*(C-A)/BRelative Percent Difference [E] = 200\*(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

Project ID:

Date Prepared: 06/18/2010

Analyst: LATCOR

QC- Sample ID: 377662-005 D Batch #: Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 #:

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

	J 2				
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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	

# **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		•												_	1	Proje	ect i	Nan	10:	Sou	the	rn '	Uni	on (	Gas	<u>. La</u>	ndfa	<u>rm</u>			
	Company Name	Basin Environmental	Consulti	ng, LLC	<u> </u>	······································										_			Pro	ject	#:_										<del></del>		_
	Company Address:	P.O. Box 381														-		Pr	ojec	t Lo	x: <u> </u>	.08	Çou	inty,	, NM	<u>.</u>							_
	City/State/Zip:	Lovington, NM 88260									_				•	_				PO	<b>#</b> :_											_	_
	Telephone No:	(575)605-7210			<u>.</u>	Fax No:		<u>(50</u>	5) 3	96-1	429					_	Rep	ort F	om	nat:		X s	Stan	dard	t	ſ	□ т	RRP	ı		NPO	ES	
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LAB # (tab use only)		LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		64			NBOH		Specify)	ater StStudg	CW - Groundwater S-SolkSol	NP-Non-Potable Specify Oth	TPH: 418.16 80154 801	174: TX 1005 TX 1008	Cations (Ca, Mg, Na, K)	Artons (Cl. SO4, Alkalnity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BIEK WZTBISOSO OFBIEK 826	N.O.R.M.	Mides &	$\{\  $	1 1	RUSH TAT (Pre-Behadule) 24.	Standard TAT 4 DAY
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dalias 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 Che	ecklist		,	٠.
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	NA	
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?	(fes )	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	•	Cooler 5 No.	
ibs 3.6 °c ibs °c ibs	°C lbs	°c	lbs	°C
Nonconformance Documents:  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 (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: 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

Final Ver. 1,000



# Certificate of Analysi ummary 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

				Project Manager:	Diciti Dalion, II
	Lab Id:	377675-001			
Analysis Requested	Field Id:	TZ Cell 14 G-1			
Anatysis Requesteu	Depth:				
	Matrix:	SOIL			
	Sampled:	Jun-14-10 08:00			
Anions by E300	Extracted:				
	Analyzed:	Jun-18-10 20:38			,
	Units/RL:	mg/kg R			
Chloride		5.37 4.7			
Percent Moisture	Extracted:				·
	Analyzed:	Jun-18-10 08:30		. •	
·	Units/RL:	% R			
Percent Moisture		11.5 1.0			
TPH By SW8015 Mod	Extracted:	Jun-18-10 11:05	·		
•	Analyzed:	Jun-19-10 09:13			
•	Units/RL:	mg/kg R			
C6-C12 Gasoline Range Hydrocarbons		ND 16.			
C12-C28 Diesel Range Hydrocarbons		48.4 16.			
C28-C35 Oil Range Hydrocarbons		ND 16.			
Total TPH		48.4 16.			

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

Final Ver. 1.000



### **Flagging Criteria**

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to 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

/ork Orders: 377675,

**Project ID:** 

Lab Batch #: 811327

**Sample:** 566133-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 06/18/10 23:51	Su	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount / [B]	Recovery %R	Control Limits %R	Flags
Analytes		t 	{D}		
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	SU	RROGATE R	ECOVERY	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	SU	RROGATE RI	ECOVERY S	STUDY	
ТРН	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	SU	RROGATE RI	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE RI	<b>ECOVERY</b> S	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	110	99.8	110 .	70-135	
o-Terphenyl	52.5	49.9	105	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il 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	Units: mg/kg BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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



"'ork Order #: 377675

Lab Batch #: 811430

**Date Analyzed:** 06/18/2010 **QC- Sample ID:** 377662-005 S

Project ID:

Date Prepared: 06/18/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATI	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\*(C-A)/BRelative Percent Difference [E] = 200\*(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

Project ID:

Date Prepared: 06/18/2010 Analyst: LATCOR

**Date Analyzed:** 06/18/2010 QC- Sample ID: 377662-005 D

Batch #:

**Percent Moisture** 

Analyte

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
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												
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								

2.51

Lab Batch #: 811327

Date Analyzed: 06/19/2010

Percent Moisture

Date Prepared: 06/18/2010

2.78

Analyst: BEV

QC- Sample ID: 377669-002 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY											
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
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

# Env.. onmental 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														_	۶	roje	ct N	ame	: <u>S</u>	uth	ıerr	<u>ı Ur</u>	101	ı G	as I	Land	dfar	m		
	Company Name	Basin Environmental	Consultir	19, Ц.С												_		ı	oroje	oct #	:											
	Company Address:	P.O. Box 381														_		Pro	ject	Loc	: <u>Le</u>	ı Cc	wnt	y, Ni	M							
	City/State/Zip:	Lovington, NM 88260		_												-,				PO#												
	Telephone No:	(575)605-7210				Fax No:		(51	05) 3	19 <b>6</b> -1	1429	)					Repo	ort F	om	at:	X	Sta	ında	nd			TRE	RP.			NPDE	s
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#### XENCO Laboratories

Atlanta, Boca Reton. 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							
Date/Time:		r. 20					
Lab ID#:	377675						
Initials:	AL						
		Sample Receipt Cl	hecki	ist			
1. Samples on ice?				Blue	Water	No	
2. Shipping container in	good condition?			(Yes)	No	None	
3. Custody seals intact of	on shipping contair	ner (cooler) and lottles?		Yes	No	N/A	
4. Chain of Custody pre-	sent?			(Yes)	No		
5. Sample instructions of	omplete on chaîn o	of custody?		Yes	No_		
6. Any missing / extra sa	amples?			Yes	(No)		
7. Chain of custody sign	ed when relinquish	red / received?		Yes	No		
8. Chain of custody agre	es with sample lat	pel(s)?		(Yes)	No		
9. Container labels legib	ole and intact?	<del>-</del>		Yæs	No		
10. Sample matrix / prop	erties agree with c	hain of custody?		(Yee)	No		
11. Samples in proper c	ontainer / bottle?			Yes	No		
12. Samples properly pr	eserved?			(Yes)	No	N/A	
13. Sample container in	tact?			(Yes	No		
14. Sufficient sample an	nount for indicated	test(s)?		(Yes)	No		
15. Ali samples received	i within sufficient h	old time?		Yes	No		
16. Subcontract of samp	ple(s)?			Yes	No	NA	
17. VOC sample have ze	ro head space?			(Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.		Cooler 4 No	)	Cooler 5 No.	
10s 3.60 °C	ibs	°C lbs	၁°	lbs	°C	lbs	<b>℃</b>
	1	Nonconformance Doc	umei	ntation			
Contact:	Contac	ted by:_			Date/Time:		
				<del></del>	_		
Regarding:							
Corrective Action Taker	n:						
Charles II shaka anaka 1	Cooling pro-	han hagun ahadir da		mont one	urt of towns	- Andrews	
oneck an triat apply:		has begun shortly after san cceptable by NELAC 5.5.8.3			PER OF SERVICE	GM: 4	

4000

☐ 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.

Final Ver. 1,000



Total TPH

# Certificate of Analys Jummary 377678

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inelad:

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	
	Lab Id:	377678-001				,	
Analysis Requested	Field Id:	TZ Cell 15 G-1					
Anaiysis Kequesiea	Depth:					•	
	Matrix:	SOIL					
	Sampled:	Jun-14-10 15:10	, .				
Anions by E300	Extracted:						
	Analyzed:	Jun-19-10 06:27	,			-	
	Units/RL:	mg/kg I	RL		 		·
Chloride		79.7 45	5.3				
Percent Moisture	Extracted:						
	Analyzed:	Jun-18-10 08:30	)		•		
	Units/RL:	% F	RL				
Percent Moisture		7.28	00				
TPH By SW8015 Mod	Extracted:	Jun-18-10 11:05	,				
	Analyzed:	Jun-19-10 10:34		•			
	Units/RL:	mg/kg F	RL				
C6-C12 Gasoline Range Hydrocarbons		ND 16	5.2				
C12-C28 Diesel Range Hydrocarbons		. 209 16	5.2				
C28-C35 Oil Range Hydrocarbons		82.2 16	5.2				

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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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



Project Name: Southern Union Gas Landfarm

'ork Orders: 377678,

Lab Batch #: 811327

**Sample:** 566133-1-BKS / BKS

**Project ID:** 

Matrix: Solid Batch:

Units: mg/kg	Date Analyzed: 06/18/10 23:51	SURROGATE RECOVERY STUDY											
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			[D]									
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/19/10 00:18	SU	SURROGATE RECOVERY STUDY												
TPH By SW8015 Mod  Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags									
				\ \ \{\nu_1}											
1-Chlorooctane		126	99.7	126	.70-135	1									
o-Terphenyl		48.7	49.9	98	70-135										

Lab Batch #: 811327

Sample: 566133-1-BLK / BLK

Batch:

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	<b>Date Analyzed:</b> 06/19/10 06:59	SURROGATE RECOVERY STUDY												
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags								
	Analytes			{D}										
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												
ТРН	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									

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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 Spike Blank Blank Spike Sample Result Added Spike Spike Added [A] Result %R					Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analytes		[ <b>B</b> ]	[C]	[D]	{E}	Result [F]	[G]	<u> </u>					
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

Matrix: Solid

Lab Batch ID: 811327

Sample: 566133-1-BKS

Batch #: 1

Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod Analytes					Blank Spike Duplicate Result [F]	Bik. 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



rk 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 #: Matrix: Soil

Reporting Units: mg/kg	MAIRIX / MAIRIX SPIKE RECOVERY STUDY												
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag							
Analytes	[A]	[B]		[2]	/ // /								
Chloride	79.7	1080	1180	102	75-125								

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

Below Reporting Limit



#### **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377678

Lab Batch #: 811435

Date Analyzed: 06/19/2010

Project ID:

Date Prepared: 06/19/2010

Analyst: LATCOR

QC- Sample ID: 377678-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

g Units: mg/kg	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Anions by E300	Parent Sample Result	Sample Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte	[A]	[B]		70KFD								
	79.7	60.3	28	20	F							

Lab Batch #: 811182

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

Date Prepared: 06/18/2010

Analyst: JLG

QC- Sample ID: 377678-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

Chloride

SAMPLE / SAMPLE DUPLICATE RECOVERY

reporting ourest to	5711.11 227												
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag								
Analyte		[B]											
Percent Moisture	7.28	7.31	0	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  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
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

# En onmental 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	ant												Pro	ject	Name: Southern Union Gas Landfarm															
,	Company Name	Basin Environmen	ntal Consulti	ng, LLC	<u> </u>								_			_			Pr	ojec	t#:											
	Company Address:	P.O. Box 381	<u></u>															P	roje	ct L	oc:	Lea	Cou	inty,	, <u>NM</u>							
	City/State/Zip:	Lovington, NM 882	260																	PO #:												
	Telephone No:	(575)605-7210			<u>-</u>	Fax No:		<u>(50</u>	) <b>5</b> ) 3	96-1	429					_	Re	port	For	mat	.	X Standard TRF			IRRP			NPDES	:s			
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lab use			1	,	<i>G</i>											^-						ΤC	LP:	Ana	ilyze	T	T	_	$\Box$	_	$\exists$ :	
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AB # (tab use only)		D COD€	Jeginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Fittered	Total #. of Containers	8	нио,	HQ	H <sub>2</sub> SO <sub>4</sub>	NaOH	Nes-S <sub>2</sub> U <sub>3</sub>	Other (Specify)	DW-Drinking Water SL - Stude		ion-Potable specify	TPH: 418.1 (8015M) 8015B	PH: TX 1005 TX 1006	Cetions (Ca, Mg, Na, K)	nions (Cl. SO4, Alkelinity)	:	Metals: As Ag Es Cd C7 Pb Hg S	Semivoletiles	BTEX 8021B/5030 or BTEX 8260	ğ	O.R.W.	Cherids 23		-   -₹	Standard TAT 4 DAY
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#### XENCO Laboratories

Atlantz, 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.				•	
74102 11110:	:. 10				-
ab ID#: 377678					٠
nitials: AL					
	Sample Receipt Che	ecklist			٠.
1. Samples on ice?		Blue	Water	No	
2. Shipping container in good condition?		Yes	No	None	
3. Custody seals intact on shipping contains	er (cooler) and bottles?	(Yes)	No	NA	
1. 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	nd / received?	Yes	No		
8. Chain of custody agrees with sample labe	l(s)?	(Yes)	No		
3. Container labels legible and intact?		Yes	No		
10. Sample matrix / properties agree with ch	aln 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 to	est(s)?	(Ŷes)	No		
15. All samples received within sufficient ho	ld time?	(Yes)	No		
16. Subcontract of sample(s)?		Yes	No	(NA)	
17. VOC sample have zero head space?		(Yes	No	NA	
18. Cooler 1 No. Cooler 2 No.	Cooler 3 No.	Cooler 4 No	<u> </u>	Cooler 5 No.	
lbs 3.6 °c lbs	°C lbs	°C lbs	°c		°C
N	onconformance Docu	mentation			
_		cabo	Date/Time:		
Contact: Contacte	ed by	<del></del>	Date/ i ime;		
Regarding:			<del></del>		<del></del>
Corrective Action Taken:					
·					
<u>, , , , , , , , , , , , , , , , , , , </u>					
Check all that apply:   Cooling process has condition according to the cond	as begun shortly after samp		ut of tempe	rature	

☐ 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



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)

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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: 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	<b>Date Collected</b>	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 I 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 Analys. ummary 399299

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

nelad:

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

								110ject Ma	uager.	Dient Barron,	, 11	
	Lab Id:	399299-0	01	399299-0	02	399299-0	03	399299-0	004	399299-0	005	
Analysis Requested	Field Id:	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	
Analysis Requesieu	Depth:					÷						•
	. Matrix:	SOIL		SOIL	ļ	SOil		SOIL		SOIL	.	
	Sampled:	Dec-01-10 (	9:10	Dec-01-10	09:15	Dec-01-10 (	09:20	Dec-01-10	09:25	Dec-01-10	09:30	
Anions by E300	Extracted:										·	
	Analyzed:	Dec-07-10	15:43	Dec-07-10	15:43	Dec-07-10 1	15:43	Dec-07-10	15:43	Dec-07-10	15:43	
	Units/RL:	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	
Percent Moisture	Extracted:											
	Analyzed:	Dec-06-10	15:35	Dec-06-10	15:35	Dec-06-10 1	15:35	Dec-06-10	15:35	Dec-06-10	15:35	
	Units/RL:	%	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	
TPH By SW8015 Mod	Extracted:	Dec-06-10	11:00	Dec-06-10	1:00	Dec-06-10 1	1:00	Dec-06-10	11:00	Dec-06-10	11:00	
	Analyzed:	Dec-07-10	14:51	Dec-07-10	5:20	Dec-07-10 (	7:12	Dec-07-10 (	07:32	Dec-07-10	07:50	
	Units/RL:	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 KENCO 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



Project Name: Southern Union Gas Landfarm

/ork Orders: 399299,

**Project ID:** 

Lab Batch #: 834805

Sample: 590552-1-BKS / BKS

Batch: Matrix: Solid

Units: mg/kg	Date Analyzed: 12/07/10 06:14	SU	RROGATE R	ECOVERY :	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount (B)	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]	1	
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	SU	RROGATE RI	ECOVERY S	STUDY	
	y SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	<del></del>	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 07:1	SU SU	RROGATE RI	ECOVERY S	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:

Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 12/07/10 07:32	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	ı	78.5	99.5	79	70-135	
o-Terphenyl		42.2	49.8	85	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 399299,

**Project ID:** 

Lab Batch #: 834805

Sample: 399299-005 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 12/07/10 07:50	SUR	ROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 13:31	SU	RROGATE R	ECOVERY S	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	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 St	JRROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 04	1:08 SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			<b>[D]</b>		
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	SU	RROGATE R	ECOVERY :	STUDY	
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		102	100	102	70-135	
o-Terphenyl		46.8	50.1	93	70-135	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

/ork Orders: 399299,

Sample: 590595-1-BLK / BLK

Project ID:

Lab Batch #: 834901

Batch: Matrix: Solid

Units: mg/kg	Date Analyzed: 12/07/10 05:08	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			(D)		
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	SU	RROGATE RI	ECOVERY	STUDY	
ТРН	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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 15:20	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes					
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 15:48	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	70-135	

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



# **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		BLAN	K/BLANK S	SPIKE / H	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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		BLAN	K/BLANK	SPIKE / I	BLANK S	PIKE DUPI	LICATE	RECOVI	RY STUD	Y	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	<b>(E)</b>	Result [F]	[G]			]	
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

Matrix: Solid

Lab Batch ID: 834901 Units: mg/kg

Sample: 590595-1-BKS

Batch #: 1

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

- Citto: 8 &	L										
TPH By SW8015 Mod	Biank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	j	[B]	[C]	[D]	[E]	Result [F]	[G]				J
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



"rk 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 #:

Matrix: Soil

Reportin

Chloride

ng 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			
	34.0	207	212	86	75-125				

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

**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 #:

Matrix: Soil

**Date Analyzed:** 12/07/2010

Date Prepared: 12/06/2010

BEV Analyst:

Reporting Units: mg/kg MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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	

15



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399299

Lab Batch #: 834926

Date Analyzed: 12/07/2010 15:43

Project ID:

**Date Prepared:** 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399299-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY									
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
			i	,							
Chloride	34.0	28.4	18	20							

Lab Batch #: 834637

Date Analyzed: 12/06/2010 15:35

**Percent Moisture** 

Analyte

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399299-001 D

Batch #:

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE	SAMPLE	DUPLIC.	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

3.21

Lab Batch #: 834901

Date Analyzed: 12/07/2010 15:48

Date Prepared: 12/06/2010

Analyst: BEV

QC- Sample ID: 399298-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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				·										_	Pro	oject	Nan	ne: <u>S</u>	out	her	ı Ün	ilon	G <sub>a</sub>	is L	and	farn	1		
	Company Name	Basin Environ	mental Se	rvices	Techno	ologies, LLC												Pr	oject	#:											
	Company Address:	P.O. Box 301															F	Proje	ct Lo	oc: <u>L</u>	ea C	ount	y, NI	м							
	City/State/Zip:	Lovington, NM	88260																PO	#:	2	171	タク								
	Telephone No:	(575)396-2378					Fax No:		157	5) 30	96-1	420					Report	t For			St				П	TRR	P		] NPI	DES	
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	Sampler Signature:	DOEL (C	way				e-mail:		pn	1(0)	oas	sine	inv.	con	1			_				Ā	nalyz	ze Fr	or:		-			П	
(lab use	-00-0	19								0-		ania.		of Co	****	0.00	Matrix	E		1	TCLP			-	X		T			48, 72 hrs	
LAB # (lab use only)	·	D CODE	<b>_</b>	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Pre		고 (		Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		Other ( Specify) යි	DW - Drinking Water St Studg CW - Groundwater S - Solifsol MP - Non-Potable Specify Oth	691	TPH: TX 1005 TX 1006	Cations (Ca. Mg. Na. K)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	OTEX 60218(5030, or, BTEX 8260	RCI	R.M.	C 6300		ž	Standard TAT 4 DAY
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2		ell 1 G-2		†		12/1/10	915			x	$\neg$	寸	十	7	П		SOIL	x		1	1	T	П			一	-	x	$\Box$	_	x
3		ell 1 G-3				12/1/10	920		_	x	٦	$\top$			П		SOIL	x			1					T	T	x		$\Box$	X
4	T	ell 1 G-4	<del></del>			12/1/10	925		1	x		T		1	П		SOIL	x			T		П	$\Box$		$\Box$		x		$\Box$	X
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Special	nstructions:			1	<u> </u>	<u>                                     </u>			1	1							-	<u> </u>	ļ	Labor Samp	le Co	ontai	ners	Inta	ct?				그 - - (	z	— D
Relinquis	rlowpy	12	Date L/3/10	9:0		Received by:	Rav								12	0a	- / l -	Time		abel Custo Custo	s on dy se dy se	cont eals eals	ainer on co	r(s) ontai <b>cole</b> r	iner( r(s)	(s)		(Y	CASSASS Lon	Z Z Z:	
Relinquis	·		Date		me	Received by:										Daf	le"	Time		by	/ Sam	npler/	Clien	it Re UPS	p. ?	DHL	F	edE)	S Lon	N N ie Str	ar
Relinquis	and by:		Date	1.4	me /	Received by EL	urdock	,							ia	13	4 1	Time	5	Temp	eratu	ıre U	pon i	Rec	67 <del>.</del>	. 9	las	>5 (	2	•c	



#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoentx, 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: BOSINENVINO	nwent	al				•		=
Date/Time: 12/3/10	1:45	<del></del>						
Lab ID#: 399299								
Initials: XIV		<del></del>					·	
anada, (A)		S	ample Receipt C	hecki	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container in	good condi	tion?			(es)	No	None	
3. Custody seals intact o			ooler) and bottles?		Yes	No	N/A	
4. Chain of Custody pres					A BES	No		
5. Sample instructions co	omplete on	chain of cus	tody?		THE STATE OF THE S	No		
6. Any missing / extra sa					Yes	No		
7. Chain of custody sign	ed when re	linquished / r	eceived?		Yes	No		
8. Chain of custody agre	es with sar	npie label(s)?	·		Tes	No		
9. Container labels legib	le and intac	<b>#?</b>			Yes	No		
10. Sample matrix / prop	erties agre	with chain o	of custody?		Yes	No		
11. Samples in proper co	ntainer / b	ottie?			Yes	No		
12. Samples property pre	served?	·			Yes	No	N/A	
13. Sample container int	act?		·	<del></del> -	(Yes)	No		
14. Sufficient sample am	ount for in	dicated test(s	1)5		(Yes)	No		
15. All samples received	within suf	ficient hold ti	me?		Yes	No	<u> </u>	
16. Subcontract of samp	ie(s)?	'			Yes	No	N/A	
17. VOC sample have ze	ro head sp	ace?	<del>,</del>		Yes	No	NA	
18. Cooler 1 No.	Cooler 2 N	lo.	Cooler 3 No.		Cooler 4 N	<u>o.                                    </u>	Cooler 5 No.	
lbs 0°C	ibs	℃	lbs	<u>°c</u>	lbs	°c	lbs	°C
Contact:			conformance Do	cume	ntation	Date/Time:		
Regarding:								
Corrective Action Taken	:	· .						
	COD	dition accept	egun shortly after seable by NELAC 5.5.8	.3.1.a.1	•		rature	

Final 1.001

□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 (AALII), 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

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 399293**



#### Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	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

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 Analys** ummary 399293

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Project Id:

Contact: Rose Slade

C6-C12 Gasoline Range Hydrocarbons

C12-C28 Diesel Range Hydrocarbons

C28-C35 Oil Range Hydrocarbons

Total TPH

Project Location: Lea County, NM

Date Received in Lab: Fri Dec-03-10 01:45 pm

RL

15.5

15.5

15.5

15.5

Brent Barron, II Odessa Laboratory Manager

Report Date: 10-DEC-10

								Project Ma	nager:	Brent Barron, II	
	Lab Id:	399293-0	01	399293-0	02	399293-0	03	399293-0	004		
Analysis Daguested	Field Id:	TZ Cell 2	G-1	TZ Cell 2	G-2	TZ Cell 2	G-3	TZ Cell 2	G-4		
Analysis Requested	Depth:			,							
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Dec-01-10	09:40	Dec-01-10	09:45	Dec-01-10 (	09:50	Dec-01-10	09:55		
Anions by E300	Extracted:										
	Analyzed:	Dec-07-10	09:53	Dec-07-10	09:53	Dec-07-10 (	09:53	Dec-07-10	09:53		
	Units/RL:	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		
Percent Moisture	Extracted:										
	Analyzed:	Dec-06-10	15:35	Dec-06-10	15:35	Dec-06-10	15:35	Dec-06-10	15:35		
	Units/RL:	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		3.95	1.00	3.09	1.00	2.92	1.00	3.51	1.00		
TPH By SW8015 Mod	Extracted:	Dec-06-10	11:00	Dec-06-10	11:00	Dec-06-10	11:00	Dec-06-10	11:00		
	Analyzed:	Dec-07-10	06:06	Dec-07-10	06:36	Dec-07-10 (	07:06	Dec-07-10	07:36		

RL

15.5

15.5

15.5

15.5

mg/kg

481

42.1

523

RL

15.4

15.4

15.4

15.4

mg/kg

ND

319

28.0

347

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

Units/RL:

mg/kg

733

35.6

769

RL

15.6

15.6

15.6

15.6

mg/kg

ND

387

25.3

412

Final 1.001

Page 5 of 13



#### **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, Cornus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: Southern Union Gas Landfarm

'ork Orders: 399293,

Project ID:

Lab Batch #: 834901

Sample: 590595-1-BKS/BKS

Matrix: Solid Batch: 1

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	Control Limits %R	Flags		
Analytes		,-,	[D]				
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:

Matrix: Solid

Units: mg/kg

/kg	Date Analyzed: 12/07/10 04:38	SU	RROGATE R	RECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found {A}	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
		102	100	102	70-135	
		46.8	50.1	93	70-135	

Lab Batch #: 834901

1-Chlorooctane o-Terphenyl

Sample: 590595-1-BLK / BLK

Batch:

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					
I-Chlorooctane	103	100	103	70-135						
o-Terphenyl	50.2	50.2	100	70-135						

Lab Batch #: 834901

Sample: 399293-001 / SMP

Batch:

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	Control Limits %R	Flags			
Analytes	(**)		[D]					
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	SU	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							

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 399293,

Project ID:

Lab Batch #: 834901

Sample: 399293-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/07/10 07:06	SURROGATE RECOVERY STUDY													
TPH By S	W8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags									
An	alytes	,	•	[D]											
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 07:36	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY	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 Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution







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	Blank Spike Result	Biank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analytes		[B]	[C]	[D]	[E]	Resuit [F]	[G]		<u> </u>					
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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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

Project ID:

**Date Prepared:** 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399292-003 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATI	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\*(C-A)/B Relative Percent Difference [E] = 200\*(C-A)/(C+B) All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399293

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 #:

Matrix: Soil

Reporting U	nits: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
	Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture		1.39	1.35	3	20	

Lab Batch #: 834901

Date Analyzed: 12/07/2010 15:48

TPH By SW8015 Mod

Analyte

Date Prepared: 12/06/2010

Analyst:BEV

QC- Sample ID: 399298-005 D

C6-C12 Gasoline Range Hydrocarbons C12-C28 Diesel Range Hydrocarbons 28-C35 Oil Range Hydrocarbons

Batch #:

Matrix: Soil

Reporting Units: mg/kg

SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
ND	ND	NC	35	
199	171	15	35	
 22.6	16.0	20	25	

# Page 12 of 13

# **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														-	Pro	oject	Nan	ne: <u>3</u>	Sou	the	<u>rn L</u>	Inio	n G	as l	_an	dfar	m_		
	Company Name	Basin Environmental Se	rvices	Techn	ologies, LLC	<del></del>										-		Pre	oject	#:_											
	Company Address:	P.O. Box 301									<b></b> .	_					F	roje	ct L	oc: <u>l</u>	ea (	Cour	nty,	NM							
	City/State/Zip:	Lovington, NM 88260														_			PO	#:_	_	<i>1</i> 2	78	7_							
	Telephone No:	(575)396-2378				Fax No:		(57	5) 3	96-1	429					R	eport	For	mat	. [	X s	Stand	tard			] TRI	RP		□ v	IPDE	S
	Sampler Signature:	JOEZ lower				e-mail:		pr	n@	)ba	sine	env	.co	m			_														_
(lab use						-															TCI	P:	Anal	lyze F	$\mathbf{I}$				$\top$	72 hrs	
ORDE	R#: 399	293							Pr	eserv	atlo	18#	of C	ontai	ners	Ma	atrix	8	7	$\neg$	TOTA	-	g	+	X	-				å	f
LAB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	Ice	HNO3	HCi	H <sub>2</sub> SO <sub>4</sub>	NaOH	None	Other ( Specify)	DW - Drinking Water St Studg	NP - Non-Potable Specify Oth	1.8/	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	Metals: As An Ba CA Cr Bh Ho	Wetars: As Ag ba Co or Poing S	Semivolatiles	OTEX 80218/5030_04 BTEX 8260	RCI	N.O.R.M.	CI- F300		RUSH TAT (Pre-Schedule) 24.	Standard TAT 4 DAY
1	TZ C	ell 2 G-1			12/1/10	940		1	х			1	I				OIL	Х					I	I		$oxed{\Box}$		х	I	$oldsymbol{\perp}$	X
2	TZ C	ell 2 G-2			12/1/10	945		1	Х				$oxed{oxed}$			S	OIL.	Х								L	Ш	x	$\dashv$	$\bot$	x
3	TZ Co	ell 2 G-3			12/1/10	950		1	X							so	DIL	X		$\bot$		$\downarrow$	_	$\bot$	$\downarrow$	上	$oxed{oxed}$	×	4	$\bot$	×
4	TZ Co	ell 2 G-4			12/1/10	955		1	x			$\perp$	$\downarrow$	$\perp$		so	OIL	X		$\downarrow$	4	1	$\downarrow$	$\bot$	<del> </del>	↓_	$\perp$	×	_	$\bot$	×
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Relinquish		Date	Tin		Received by:		_							1/3	Dá	//0 Ne	+	Time		Sam t	ple l by Sa	Hand Imple	Del er/Cli	cool livere ient F	ed Rep. 1	:. ? DH	4L	Fed	N N N		Star
Relinguist M	ed by:	Qate	Tin	ne	Received by ELC	widock	_							16		1te /10	1	Time Y	5	Tem	pera	ture	Upc	in Re	to2 ceip	; C	jla	55	5	) •	



#### 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: Pata Environmental		•	1	
Date/Time: 12/3/10 1:45	<i>t</i>			
Lab ID#: 399293	•			
Initials: $\chi/M$				
Sample Receipt Ch	eckiist			
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?	<b>1985</b>	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)?	(TES)	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	NA	
13. Sample container intact?	Yes	No		
14. Sufficient sample amount for indicated test(s)?	(Yes)	No		<del></del> -
15. All samples received within sufficient hold time?	Yes	No		
16. Subcontract of sample(s)?	Yes	No	NA	
17. VOC sample have zero head space?	Yes	No	N/A )	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	o	Cooler 5 No.	
ibs O°C ibs °C ibs	°C lbs	°c	lbs	°C
Nonconformance Doc  Contact: Contacted by:	umentation	Date/Time:_		
Regarding:				
Corrective Action Taken:				
Check all that apply:   Cooling process has begun shortly after san  condition acceptable by NELAC 5.5.8.3	.1.a.1.		rature	

Final 1.001

□ 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

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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)

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

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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: 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

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

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## **Sample Cross Reference 399292**



### Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected Samp	ole 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

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

Final 1.001



Project Id:

## Certificate of Analys

### ummary 399292

### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 10-DEC-10



Contact:	Rose Slade
Project Location:	Lea County, NM

								Project Mar	ager:	Brent Barron,	II	
	Lab Id:	399292-0	01	399292-0	002	399292-0	03	399292-0	04	399292-0	005	
Analysis Requested	Field Id:	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	
Analysis Requested	Depth:				1							
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Dec-01-10	10:05	Dec-01-10	10:10	Dec-01-10 1	0:15	Dec-01-10 1	0:20	Dec-01-10	10:25	
Anions by E300	Extracted:					*						· · · · · · · · · · · · · · · · · · ·
	Analyzed:	Dec-07-10	01:22	Dec-07-10	01:22	Dec-07-10 (	9:53	Dec-07-10 (	9:53	Dec-07-10	09:53	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	· RL	
nloride		9.53	8.55	9.39	8.55	10.6	8.52	ND	8.55	10.8	8.62	
Percent Moisture	Extracted:		_									•
	Analyzed:	Dec-06-10	12:55	Dec-06-10	12:55	Dec-06-10 1	5:35	Dec-06-10 1	5:35	Dec-06-10	15:35	
	Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL	
ercent Moisture		1.74	1.00	1.81	1.00	1.39	1.00	1.73	1.00	2.50	1.00	
TPH By SW8015 Mod	Extracted:	Dec-06-10	11:00	Dec-06-10	11:00	Dec-06-10 1	1:00	Dec-06-10 1	1:00	Dec-06-10	11:00	
	Analyzed:	Dec-07-10	03:02	Dec-07-10	03:20	Dec-07-10 (	3:40	Dec-07-10 (	3:58	Dec-07-10	05:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
6-C12 Gasoline Range Hydrocarbons		ND	15.3	ND	15.2	ND	15.1	ND	15.2	ND	15.4	
12-C28 Diesel Range Hydrocarbons		3070	15.3	4470	15.2	3490	15.1	4340	15.2	3830	15.4	
28-C35 Oil Range Hydrocarbons		58.9	15.3	287	15.2	112	15.1	220	15.2	54.9	15.4	
otal 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.

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

Final 1.001

Brent Barron, II Odessa Laboratory Manager

Page 5 of 15



### **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	(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



Project Name: Southern Union Gas Landfarm

/ork Orders: 399292,

**Project ID:** 

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg	Date Analyzed: 12/06/10 20:37	SURROGATE RECOVERY STUDY						
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes	[A]	[D]	(D)	/0K			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 20:56	SU SU	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	SU	RROGATE RI	ECOVERY	STUDY	<del></del>
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R  D	Control Limits %R	Flags
1-Chlorooctane	Analytes	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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
I-Chlorooctane .	75.6	99.7	76	70-135		
o-Terphenyl	40.7	49.9	82	70-135		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Work Orders: 399292,

Project ID:

Lab Batch #: 834718

Sample: 399292-003 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 12/07/10 03:40	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
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:

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	Control Limits %R	Flags		
Analytes			[D]				
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:

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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 04:38	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{ <b>D</b> }		
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	SU	RROGATE R	<b>ECOVERY</b>	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

/ork 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	SU	RROGATE R	ECOVERY	STUDY	4
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I-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	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		}	[D]		
1-Chlorooctane	103	99.5	104	70-135	
o-Terpheny!	. 49.5	49.8	99	70-135	

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	·Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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	Biank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]			Ì	i
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						Y				
TPH By SW8015 Mod Analytes	Biank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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	<del>                                     </del>
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



## BS / BSL Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399292

Analyst: BEV

Lab Batch ID: 834901

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/07/2010

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	Blank Spike Result	Biank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	<b>(E</b> }	Result [F]	[G]			t I	}
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

QC- Sample ID: 399258-004 S

**Date Analyzed:** 12/07/2010

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	MATRIX / MATRIX SPIKE RECOVERY STUDY								
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
Analytes	[A]	[B]								
Chloride	117	227	350	1.03	75-125					

Lab Batch #: 834922

**Date Analyzed:** 12/07/2010

Date Prepared: 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399292-003 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATE	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\*(C-A)/BRelative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

**BRL** - Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399292

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 #:

Matrix: Soil

Reporting Units: mg/kg

mg/kg	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		· [B]			
	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 #:

Matrix: Soil

Reporting Units: %

Chloride

: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[ <b>B</b> ]			
	11.7	11.8	1	20	

Lab Batch #: 834633

Percent Moisture

Percent Moisture

Date Analyzed: 12/06/2010 15:35

Date Prepared: 12/06/2010

Analyst:JLG

QC- Sample ID: 399292-003 D

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
				· · · · · · · · · · · · · · · · · · ·	

Lab Batch #: 834901

Date Analyzed: 12/07/2010 15:48

Date Prepared: 12/06/2010

Analyst:BEV

20

QC- Sample ID: 399298-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg

SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample	Sample	PPN	Control	

TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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	

## **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														_	Pr	ojec	t Na	me:	Sou	the	rn U	nio	n G	as l	<u>_anc</u>	dfar	<u>m</u>		
	Company Name	Basin Environmental	Services	Techn	ologies, LLC	·										-		P	rojec	:t #: _											
	Company Address:	P.O. Box 301			<del></del>											_	1	Proj	ect L	.oc:	Lea	Cou	nty, I	NM							
	City/State/Zip:	Lovington, NM 88260	)																PC	) #: <sub>_</sub>		91	78	<u>'7</u>							
	Telephone No:	(575)396-2378	_			Fax No:		(57	5) 3	96-1	429						Repor	t Fo	rmat	. [	X,	Stan	dard	•		TRE	RP	. ļ	NF	PDES	3
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ORDE		292							Pro	eserv	/atio	n & /	of	Conta	iners	l N	Matrix	-			TOT	AL:	+	‡	X					48, 72 hrs	ł
LAB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce				NaOH			St Studg	GW = Groundwater S≈Soll/Soll	100	I O	Cations (Ca, Mg. Na. K)	Anions (Cl. SO4, Alkalinity)	- 1:	Metals: As Ag ta Cd Cr Pb Hg Se Volatiles	Sernivolatiles	DTEX 80218/6030 or BTEX 8260	RCI	Z	CI- E300		24	Г
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7	TZ C	ell 3 G-2			12/1/10	1010		1	Х							5	OIL	x					$\perp$					x			X
_3	TZ C	ell 3 G-3			12/1/10	1015		1	X					$\Box$	T	S	OIL	x						$\prod$				х			X
Ч	TZ C	ell 3 G-4			12/1/10	1020		1	Х							5	OIL	x										X	丄		x
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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: Patin Environmental	,	•		
Date/Time: 12/3/10 1:45				
Lab ID#: 399292				
Initials: X/Y				,
Sample Receipt Chec	klist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	(TES)	No		
5. Sample instructions complete on chain of custody?	TO SERVICE OF THE PROPERTY OF	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)?	<b>F</b>	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	NA	
17. VOC sample have zero head space?	Yes	No	NA	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	<b>).</b>	Cooler 5 No.	
lbs O°C lbs °C lbs	°C lbs	°c	ibs	°C
Nonconformance Docum	nentation			
Contacted by:		Date/Time:_		
Regarding:		·		
Corrective Action Taken:				
Check all that apply:   Cooling process has begun shortly after sampli condition acceptable by NELAC 5.5.8.3.1.2  Dinitial and Backup Temperature confirm out of the sample of the sampl	a.1.		rature	

☐ 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)

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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: 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	<b>Date Collected</b>	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 Analys**

### ummary 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 roject Mai	<u>6</u>	Diene Burron,	**		
Lab Id:	399290-0	01	399290-0	002	399290-0	03	399290-0	04	399290-0	005		
Field Id:	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		
Depth:												
Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL			
Sampled:	Dec-01-10 1	11:00	Dec-01-10	10:55	Dec-01-10	10:50	Dec-01-10 1	0:45	Dec-01-10	10:45		
Extracted:												
Analyzed:	Dec-07-10	01:22	Dec-07-10	01:22	Dec-07-10 (	01:22	Dec-07-10 (	1:22	Dec-07-10	01:22		
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	·RL	mg/kg	RL		
	32.6	8.58	33.6	8.61	43.1	8.58	80.6	8.62	74.6	8.58		
Extracted:												
Analyzed:	Dec-06-10	12:55	Dec-06-10	12:55	Dec-06-10	12:55	Dec-06-10 1	2:55	Dec-06-10	12:55		
Units/RL:	%	RL	%	RL	%	RL	%	RL	%	RL		
	2.12	1.00	2.44	1.00	2.13	1.00	2.50	1.00	2.09	1.00		
Extracted:	Dec-06-10	11:00	Dec-06-10	11:00	Dec-06-10	11:00	Dec-06-10 1	1:00	Dec-06-10	11:00		
Analyzed:	Dec-07-10 (	01:07	Dec-07-10	01:26	Dec-07-10 (	01:46	Dec-07-10 (	2:05	Dec-07-10	02:23		
Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		
	ND	15.3	ND	15.4	ND	15.3	ND	15.4	ND	15.3		
	3120	15.3	3240	15.4	3180	15.3	2330	15.4	2470	15.3		
	52.6	15.3	36.6	15.4	64.5	15.3	47.9	15.4	41.7	15.3		
	3173	15.3	3277	15.4	3245	15.3	2378	15.4	2512	15.3		
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL:  Extracted: Analyzed: Units/RL:  Extracted: Analyzed: Analyzed: Analyzed:	Field Id: Depth: Matrix: SOIL Sampled: Dec-01-10 1  Extracted: Analyzed: Dec-07-10 0  Units/RL: mg/kg 32.6  Extracted: Analyzed: Dec-06-10 Units/RL: % 2.12  Extracted: Dec-06-10 Analyzed: Dec-07-10 0 Units/RL: mg/kg ND 3120 52.6	TZ Cell 4 G-1	Field Id:         TZ Cell 4 G-1         TZ Cell 4 G-1           Depth:         Matrix:         SOIL         SOIL           Sampled:         Dec-01-10 11:00         Dec-01-10           Extracted:         Analyzed:         Dec-07-10 01:22         Dec-07-10 01:22           Units/RL:         mg/kg         RL         mg/kg           Extracted:         Analyzed:         Dec-06-10 12:55         Dec-06-10           Units/RL:         %         RL         %           Extracted:         Dec-06-10 11:00         Dec-06-10           Analyzed:         Dec-07-10 01:07         Dec-07-10 01:07           Units/RL:         mg/kg         RL         mg/kg           ND         15.3         ND           3120         15.3         3240           52.6         15.3         36.6	Field Id:         TZ Cell 4 G-1         TZ Cell 4 G-2           Depth:         Matrix:         SOIL         SOIL           Sampled:         Dec-01-10 11:00         Dec-01-10 10:55           Extracted:         Analyzed:         Dec-07-10 01:22         Dec-07-10 01:22           Units/RL:         mg/kg         RL         mg/kg         RL           Extracted:         Analyzed:         Dec-06-10 12:55         Dec-06-10 12:55         Dec-06-10 12:55           Units/RL:         %         RL         %         RL           Extracted:         Dec-06-10 11:00         Dec-06-10 11:00         Dec-06-10 11:00           Analyzed:         Dec-07-10 01:07         Dec-07-10 01:26         mg/kg         RL           Units/RL:         mg/kg         RL         mg/kg         RL           ND         15.3         ND         15.4           3120         15.3         3240         15.4           52.6         15.3         36.6         15.4	Field Id:         TZ Cell 4 G-1         TZ Cell 4 G-2         TE TE TA TA TA TA TA TA TA TA TA TA TA TA TA	Field Id:         TZ Cell 4 G-1         TZ Cell 4 G-2         TZ Cell 4 G-3           Depth:         Matrix:         SOIL         SOIL         SOIL         SOIL           Sampled:         Dec-01-10 11:00         Dec-01-10 10:55         Dec-01-10 10:50           Extracted:         Analyzed:         Dec-07-10 01:22         Dec-07-10 01:22         Dec-07-10 01:22           Units/RL:         mg/kg         RL         mg/kg         RL         mg/kg         RL           Extracted:         Analyzed:         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         Dec-06-10 11:00         Dec-07-10 01:26         Dec-07-10 01:46         mg/kg         RL         mg/kg         RL         ND         15.3         ND         15.4         ND         15.3         3120         15.3         3240         15.4         A1.5         15.3         15.3         15.3         36.6         15.4         64.5         15.3	Lab Id:   399290-001   399290-002   399290-003   399290-003   399290-004     Field Id:   TZ Cell 4 G-1   TZ Cell 4 G-2   TZ Cell 4 G-3   TZ Cell 4 G-4     Depth:   Matrix:   SOIL   SOIL   SOIL   SOIL   SOIL     Sampled:   Dec-01-10 11:00   Dec-01-10 10:55   Dec-01-10 10:50   Dec-01-10 10	Lab Id:   399290-001   399290-002   399290-003   399290-004     Field Id:   TZ Cell 4 G-1   TZ Cell 4 G-2   TZ Cell 4 G-3   TZ Cell 4 G-4     Depth:   Matrix:   SOIL   SOIL   SOIL   SOIL   SOIL     Sampled:   Dec-01-10 11:00   Dec-01-10 10:55   Dec-01-10 10:50   Dec-01-10 10:45     Extracted:   Analyzed:   Dec-07-10 01:22   Dec-07-10 01:22   Dec-07-10 01:22     Units/RL:   mg/kg	Lab Id:         399290-001         399290-002         399290-003         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         399290-004         TZ Cell 4 G-4         TZ Cell 4 G-5         TZ Ce	Field Id: Depth:         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           Matrix:         SOIL         SOIL <th colsp<="" th=""></th>	

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



Project Name: Southern Union Gas Landfarm

/ork Orders: 399290,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 20:37

**TPH By SW8015 Mod** 

SU	RROGATE R	ECOVERY	STUDY	
mount	True	Recovery	Control	Flags
Found	Amount	%R	Limits	
[A]	[B]	[D]	%R	

**Analytes** I-Chlorooctane 70-135 75.3 99.7 76 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	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	•	1	[D]		  -
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:

Units: mg/kg	SU	RROGATE RI	ECOVERY	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: 399290-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 01:07	SU	RROGATE RI	ECOVERY S	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
J-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	<b>Date Analyzed:</b> 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	,							

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 399290,

Sample: 399290-003 / SMP

Project ID:

Lab Batch #: 834718

Batch: Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 01:46	SU	SURROGATE RECOVERY STUDY										
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
Analytes			(D)	[								
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 02:05	; SU	SURROGATE RECOVERY STUDY										
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
Analytes			[D]	<u> </u>								
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:

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	Control Limits %R	Flags						
Analytes			{D}								
1-Chlorooctane	76.9	99.9	77	70-135							
o-Terphenyl	37.7	50.0	75	70-135							

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## BS / BSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399290

Project ID:

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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes		[B]	[C].	[D]	[E]	Result [F]	[G]								
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	Biank 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	<u> </u>				
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

Project ID:

**Date Prepared: 12/07/2010** 

Analyst: LATCOR

QC- Sample ID: 399258-004 S

Batch #: 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	(-9	[15]										
Chloride	117	227	350	103	75-125							

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

BRL - Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399290

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 #:

Matrix: Soil

Reporting Units: mg/kg

SAMPLE	SAMPLE	DUPLIC	AIE REC	OVERI
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

Lab Batch #: 834604

Date Analyzed: 12/06/2010 12:55

Chloride

**Percent Moisture** 

**Analyte** 

Anions by E300

Analyte

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399258-004 D

Batch #:

Matrix: Soil

Reporting Units: %

Percent Moisture

 SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
			T	

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														_	Pr	oject	Nan	ne: <u>S</u>	Sou'	ther	n U	nior	ı Ga	s La	andf	farm			
	Company Name	Basin Environmental	Services	Tecno	logies, LLC											_		Pr	oject	#:											
	Company Address:	P.O. Box 301														_	f	<sup>2</sup> roje	ct L	oc: <u>L</u>	ea (	Coun	ity, N	M							
	City/State/Zip:	Lovington, NM 88260														_	•		PO	#:_		91	78	<u>} 7</u>							
	Telephone No:	(575) 396-2378				Fax No	:	(57	5) 39	96-1	429					F	Repor	t For	mat:	. [2	S s	tand	ard	•		TRR	(P		NPD	ES	
	Sampler Signature:	Joor low	سده			e-mail		_				env	.co	m		-															
(Ash						-												E			TCL	_	Analy	ze F	or:	<del></del>	<del></del>		$\dashv$	٠	
(lab use	700	190									(0.8) 0.	2.0.0	of C	aatal		7 17	at siv				1014	IL:	1	厂	X					48, 72 hrs	
AB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Total #. of Containers		HNO,				None None	(Specify)	St Sludg	CW - Croundwater S-Soil/Soil B. R. Non-Potable Specify Other	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Ci, SO4, Arkaimity)	Metals: As Ao Ba Cd Cr Pb Ha Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	Ψ	CI- E 300	11	RUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
-3-		ell 4 G-1	<u> </u>	<u> </u>	12/1/10	1100	<u>  "</u>	1	X	_		+	-		۲	+	OIL	X	F	<del>-  </del>	₹ (	ı ≥	>	8		_		$\overline{\mathbf{x}}$	$\dagger \dagger$	-	X
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoentx, 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: Bash Environmental					
Date/Time: 12/3/10 1:45	· · · · · · · · · · · · · · · · · · ·				
Lab ID#: 399290					
Initials: AM	·				
	Sample Receipt Ch	ecklist			
1. Samples on ice?		Blue	Water	No	
2. Shipping container in good condition?		Yes	No	None	
3. Custody seals intact on shipping containe	r (cooler) and bottles?	Yes	No	NA	
4. Chain of Custody present?		785	No		
5. Sample instructions complete on chain of	custody?	Yes	No		
6. Any missing / extra samples?		Yes	No		
7. Chain of custody signed when relinquishe	d / received?	Yes	No		
8. Chain of custody agrees with sample labe	i(s)?	THE STATE OF THE S	No		
9. Container labels legible and intact?		Yes	No		
10. Sample matrix / properties agree with ch	ain 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 to	est(s)?	Yes	No		
15. All samples received within sufficient ho	ld time?	Yes	No		·
16. Subcontract of sample(s)?		Yes	No	NA	
17. VOC sample have zero head space?		Yes	No	NA	
18. Cooler 1 No. Cooler 2 No.	Cooler 3 No.	Cooler 4	4 No.	Cooler 5 No.	
ibs O°C ibs	°C lbs	°င	lbs °C	ibs	°c
N	onconformance Doc	umentation	<b>}</b>		
Contact: Contacts	ed by:		Date/Time:		
		<del></del>			
Regarding:		<del></del>			<del></del>
	·				
Corrective Action Taken:					
					··
	· · · · · · · · · · · · · · · · · · ·				
Check all that apply:	as begun shortly after san	oling event a	nd out of tempe	rature	
	ceptable by NELAC 5.5.8.3				•

□ 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 (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 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

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
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

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 Analys**

### ummary 399285

### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Project Id: Contact: Rose Slade

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 10-DEC-10

Project Location: Lea County, NM Project Manager: Brent Barron, II

1							
Lab Id:	399285-0	<b>1</b> 01					
Field Id:	TZ Cell 5	<b>G</b> -1		·			
Depth:							
. Matrix:	SOIL						
Sampled:	Dec-01-10	11:10					
Extracted:							
Analyzed:	Dec-07-10	01:22					
Units/RL:	mg/kg	RL					
	ND	4.26					
Extracted:							
Analyzed:	Dec-06-10	12:55					
Units/RL:	%	RL			· ·		
	1.46	1.00		·			
Extracted:	Dec-06-10	11:00					
Analyzed:	Dec-06-10	22:52	·				
Units/RL:	mg/kg	RL					-
,	ND	15.1					
	143	15.1	•				
	51.6	15.1					
	195	15.1					
	Field Id: Depth: Matrix: Sampled: Extracted: Analyzed: Units/RL:  Extracted: Analyzed: Units/RL:  Extracted: Analyzed: Analyzed: Analyzed:	Field Id: Depth: Matrix: SOIL Sampled: Dec-01-10  Extracted: Analyzed: Dec-07-10 Units/RL: mg/kg ND  Extracted: Analyzed: Dec-06-10 Units/RL: % 1.46 Extracted: Dec-06-10 Units/RL: mg/kg ND  143 51.6	Field Id:	Field Id: TZ Cell 5 G-1  Depth: Matrix: SOIL  Sampled: Dec-01-10 11:10  Extracted: Analyzed: Dec-07-10 01:22  Units/RL: mg/kg RL  ND 4.26  Extracted: Analyzed: Dec-06-10 12:55  Units/RL: % RL  1.46 1.00  Extracted: Dec-06-10 11:00  Analyzed: Dec-06-10 22:52  Units/RL: mg/kg RL  ND 15.1  143 15.1  51.6 15.1	Field Id: TZ Cell 5 G-1  Depth:  Matrix: SOIL  Sampled: Dec-01-10 11:10  Extracted:  Analyzed: Dec-07-10 01:22  Units/RL: mg/kg RL  ND 4.26  Extracted:  Analyzed: Dec-06-10 12:55  Units/RL: % RL  1.46 1.00  Extracted: Dec-06-10 11:00  Analyzed: Dec-06-10 22:52  Units/RL: mg/kg RL  ND 15.1  143 15.1  51.6 15.1	Field Id: Depth: Depth: Matrix: SOIL Sampled: Dec-01-10 11:10  Extracted: Analyzed: Dec-07-10 01:22 Units/RL: mg/kg RL  ND 4.26  Extracted: Analyzed: Dec-06-10 12:55 Units/RL: % RL  1.46 1.00  Extracted: Dec-06-10 11:00 Analyzed: Dec-06-10 22:52 Units/RL: mg/kg RL  ND 15.1  ND 15.1  143 15.1  51.6 15.1	Field Id: TZ Cell 5 G-1  Depth:  Matrix: SOIL  Sampled: Dec-01-10 11:10  Extracted:  Analyzed: Dec-07-10 01:22  Units/RL: mg/kg RL  ND 4.26  Extracted:  Analyzed: Dec-06-10 12:55  Units/RL: % RL  1.46 1.00  Extracted: Dec-06-10 11:00  Analyzed: Dec-06-10 22:52  Units/RL: mg/kg RL  ND 15.1  143 15.1  51.6 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

Odessa Laboratory Manager

Final 1.002

Brent Barron, II



### 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.

842 Cantwell Lane, Corpus Christi, TX 78408

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(361) 884-9116

(361) 884-0371



Project Name: Southern Union Gas Landfarm

'ork Orders: 399285,

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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
I-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 SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

l 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	Control Limits %R	Flags			
Analytes		1	(D)					
I-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 2		SURROGATE RECOVERY STUDY								
ТРН	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					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution
Surrogate Recovery [D] = 100 \* A / B



### **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	٠	BLAN	K/BLANKS	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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				Y							
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	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



\*\*'ork Order #: 399285

Lab Batch #: 834917

Date Analyzed: 12/07/2010

**Date Prepared: 12/07/2010** 

Analyst: LATCOR

QC- Sample ID: 399258-004 S Batch #:

Matrix: Soil

**Project ID:** 

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

**Project ID:** 

Date Prepared: 12/07/2010 Analyst: LATCOR

Date Analyzed: 12/07/2010 01:22 QC- Sample ID: 399258-004 D

Matrix: Soil Batch #:

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVER							
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
Analyte		[10]							
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  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	11.7	11.8	1	20	

# Page 11 of 12

# **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										Pro	ojec1	Nan	ie: <u>5</u>	out	heri	n Ur	HOF	i Ga	s La	inat	rarm			_							
	Company Name	Basin Environme	ntal Serv	ices 1	Techno	ologies, LLC													Pr	oject	#:_											_
	Company Address:	P.O. Box 301																P	roje	et Le	ю: <u>L</u>	ea C	ount	ty, N	м							_
	City/State/Zip:	Lovington, NM 88	260																	PO	#:		_	90	78	7						
	Telephone No:	(575) 396-2378					Fax No:		(57	5) 39	6-14	129		_			R	eport	For	mat:	×	Sta	anda	ard			TRRF			NPDI	ES	
	Sampler Signature:			-			e-mail:						nv.	con				•				_				_						
(lab use			- <i>1                                  </i>				-					-			<u> </u>			-				TCLP	_	nalyz	ze F	or:		$\overline{}$		$\exists$	٦	
ORDE	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	<i>ك</i> لم							ļ	Dra	corv	ation	9 4 /	of Cor	nt ain	ore l	1.4	trix				OTAL				X					48, 72 #	
LAB # (lab use only)		_D CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers			HC.		0,			ter SL – Sludg	y Oth	į,	TPH: TX 1005 TX 1006	Cations (Ca. Mg. Na. K) Anions (Cl. SO4 Alkalinix)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Votatiles	Semivolatiles	BTEX 5021B/5030 or BTEX 8260	RCI NO RE	1			RUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
1	TZ C	ell 5 G-1				12/1/10	1110		1	x	$\Box$			I			SC	)IL	X		I					$\Box$	$oldsymbol{\perp}$	X		$\Box$	$\prod$	X
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#### XENCO Laboratories

Attanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadeiphia 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: BOSINENVIN	nmental							
Date/Time: 12/3/10			· · · · · · · · · · · · · · · · · · ·					
Lab ID#: 39928	5						,	
Initials: X/M			<del></del>					
		Sa	ımple Receipt C	Checki	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container in	good condition?				Mes)	No	None	
3. Custody seals intact	on shipping contai	ner (co	oler) and bottles?		Yes	No	N/A	
4. Chain of Custody pre	sent?				Tes	No		
5. Sample instructions	complete on chain	of cust	ody?		TEST	No		
6. Any missing / extra s	amples?				Yes	No		
7. Chain of custody sig		hed / n	ceived?		Yes	No		
8. Chain of custody agr						No		
9. Container labels legi	ble and intact?				Yes	No		
10. Sample matrix / pro	perties agree with	chain c	f custody?		Yes	No		
11. Samples in proper of	container / bottle?				(Yes)	No		<del></del>
12. Samples property p	reserved?				Yes	No	N/A	
13. Sample container in	ntact?				Yes	No		
14. Sufficient sample a	mount for indicated	d test(s	)?		(Yes)	No		
15. All samples receive	d within sufficient	hold tir	ne?		Yes	No		
16. Subcontract of sam	ıple(s)?				Yes	No	N/A	
17. VOC sample have z	ero head space?				Yes	No	NA	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 No	).	Cooler 5 No.	
ibs O°	C lbs	°c	lbs	°င	ibs	°	lbs	°c
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	□Initial and Back	up Tem	perature confirm or I would like to proc	ut of ten	rperature co	nditions		

Final 1.002

# **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 (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)

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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

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

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# Sample Cross Reference 399287



#### Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected Sample Depth	Lab Sample Id
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

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 Analys

#### ummary 399287

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

\*inelad

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

							Project Manager:	Dient Danon, II	
	Lab ld:	399287-0	001	399287-0	02				
Analysis Requested	Field Id:	TZ Cell 6	<b>G</b> -1	TZ Cell 6	G-2				
Anatysis Kequesteu	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-01-10	11:20	Dec-01-10	11:25				
Anions by E300	Extracted:			_		•			
	Analyzed:	Dec-07-10	01:22	Dec-07-10 (	01:22				·
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		ND	17.2	81.4	8.63				
Percent Moisture	Extracted:								
	Analyzed:	Dec-06-10	12:55	Dec-06-10	12:55				
	Units/RL:	%	RL	%	RL				
Percent Moisture		2.45	1.00	2.61	1.00				
TPH By SW8015 Mod	Extracted:	Dec-06-10	11:00	Dec-06-10	1:00				
`	Analyzed:	Dec-06-10	23:31	Dec-06-10 2	23:49				
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C12 Gasoline Range Hydrocarbons		ND	15.4	ND	15.3		1		
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

/ork Orders: 399287,

**Sample:** 590499-1-BKS / BKS

**Project ID:** 

Lab Batch #: 834718

Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 12/06/10 20:	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes	[ ]	1-,	[D]							
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 20:56	SU	RROGATE R	ECOVERY	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	<b>Date Analyzed:</b> 12/06/10 21:15	SURROGATE RECOVERY STUDY									
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane	Analytes	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	Amount   True   Recovery   Control   Limits   %R   100   75   70-135		SURROGATE RECOVERY STUDY		
TPH By SW8015 Mod  Analytes	Found	Amount	%R	Limits	Flags
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:

Matrix: Soil

Units: mg/kg	TPH By SW8015 Mod  Analytes	SURROGATE RECOVERY STUDY									
ТРН		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			{D}							
I-Chlorooctane		72.7	99.5	73	70-135						
o-Terphenyl		36.7	49.8	74	70-135						

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]				l			
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 Analytes	Biank 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



"'ork 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 #:

Matrix: Soil

Reporting Units: mg/kg 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\*(C-A)/BRelative Percent Difference [E] = 200\*(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

Date Analyzed: 12/07/2010 01:22

Anions by E300

**Analyte** 

Date Prepared: 12/07/2010

Project ID: '

Analyst: LATCOR

QC- Sample ID: 399258-004 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg

SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

Lab Batch #: 834604

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

Analyst: JLG

QC- Sample ID: 399258-004 D

Batch #:

Matrix: Soil

Reporting Units: %

Chloride

SAMPLE	SAMPLE	DUPLIC	AIE REC	OVERY
Parent Sample Result	Sample Duplicate Result	RPD	Control Limits %RPD	Flag

Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	11.7	11.8	1	20	

# Page 11 of 12

# **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	· .											·				Pro	oject	Nam	e: <u>S</u>	outh	nerr	<u>Ur</u>	ion	Ga	ıs L	and	farm	<u> </u>		
	Company Name	Basin Environmental C	onsultir	ıg, LLC	>														Pr	oject	#:											
	Company Address	E. P.O. Box 381															•	F	roje	ct Lo	c: <u>Le</u>	a Co	ount	y, N!	M			· —				
	City/State/Zip:	Lovington, NM 88260			·															РО	#:		c	<u> </u>	181	<b>7</b> _						
	Telephone No:	(575)396-2378				Fax No:		(57	5) 3	96-1	429	)					R	eport	For	mat:	X	Sta	anda	rđ			TRR	(P		] NPI	DES	į
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ORDE	7007	87							Pri	eser	vatio	on &	# Of	f Con	taine	ers	Ma	trix		1		OTAL:		П	-	X		-  -	ļ		48, 72 hrs	
AB # (lab use only)		LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		HNO3				Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>			DW = Drinking Water St. = Studg	pecify Oth	TPH: 418.1 (8015) 8015	TPH: TX 1005 TX 1006	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	<b>PTEX 80215/3030</b> or BTEX 8260	RCI	¥   .	CI- 6 300		RUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
		Cell 6 G-1		<del>  "</del>	12/1/10	1120	نتت_	_	X		_	-	<u> </u>		$\exists$	Ħ	SC		x	-   '	1	<u> </u>	-		<b>"</b>	*			$\frac{1}{x}$	$\top$	Ħ	X
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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#: 399287					
Initials: XIV	_ <u>-</u> _				
Sample Rec	eipt Checkli	ist			
1. Samples on ice?		Blue	Water	No	
2. Shipping container in good condition?		(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bot	ies?	Yes	No	N/A	
4. Chain of Custody present?		TES	No		
5. Sample instructions complete on chain of custody?		TES	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)?		TES	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 property preserved?		Yes	No	NA	
13. Sample container intact?		Yes	No		
14. Sufficient sample amount for indicated test(s)?	i	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	NA	<del></del>
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.		Cooler 4 No	<u>,                                    </u>	Cooler 5 No.	
lbs O°C lbs °C	lbs °C	lbs	°c	lbs	°د
Nonconforman	ce Docume	ntation			
Contacted by:			Date/Time:		
			•		
Regarding:					
			<del></del>		
Corrective Action Taken:					
					<del></del>
Check all that apply:   Cooling process has begun shortly	after sampling	event and	out of tempe	rature	
condition acceptable by NELA			enditions		,

☐ 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)

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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

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

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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

## XENCO Laboratories

#### 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 Analys ummary 399288

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

enella de

Project Id:

Contact: Rose Slade

TPH By SW8015 Mod

C6-C12 Gasoline Range Hydrocarbons

C12-C28 Diesel Range Hydrocarbons

C28-C35 Oil Range Hydrocarbons

Total TPH

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

	Lab Id:	399288-0	001				
Analysis Requested	Field Id:	TZ Cell 7	G-1				
Analysis Requesieu	Depth:					·	
· ·	Matrix:	SOIL					
	Sampled:	Dec-01-10	12:55	-			
Anions by E300	Extracted:						
	Analyzed:	Dec-07-10	01:22				
,	Units/RL:	mg/kg	RL				
Chloride		5.69	4.41				
Percent Moisture	Extracted:						
	Analyzed:	Dec-06-10	12:55		ļ		
	Units/RL:	%	RL	į į			
Percent Moisture		4.84	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.

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

Extracted:

Analyzed:

Units/RL:

Dec-06-10 11:00

Dec-07-10 00:08

166

16.2

182

RL

15.8

15.8

15.8

15.8

mg/kg

Final 1.002

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: 399288,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

**Project ID:** 

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 12/06/10	0 20:37 SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D] .		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 20:56		SU	RROGATE R	RECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane	Ź	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	Control Limits %R	Flags						
Analytes			[D]								
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 00:08	SURROGATE RECOVERY STUDY										
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes			[D]								
1-Chlorooctane	73.4	100	73	70-135							
o-Terphenyl	35.5	50.0	71	70-135							

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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		BLAN	K/BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	ICATE .	RECOVI	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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		BLAN	K/BLANK	SPIKE / E	BLANK S	SPIKE DUPI	ICATE 1	RECOVI	ERY STUD	Y	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Result  F	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	ا رقا			L	
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



rk Order #: 399288

**Lab Batch #:** 834917 **Date Analyzed:** 12/07/2010

- 10/05/0010

Project ID:

Date Prepared: 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399258-004 S

Batch #:

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY											
Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag						
117	227	350	103	75-125							
	Parent Sample Result [A]	Parent Sample Spike Result Added [A] [B]	Parent Sample Sample Result Added [A] Spiked Sample Result Added [B]	Parent Sample Result [A] Spiked Sample Result FResult	Parent Sample Result Added [A] Spiked Sample Result Result IC] Result IC] Spiked Sample Result Result IC] Result IC] WR WR						

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

Below Reporting Limit



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399288

Lab Batch #: 834917

D . D

Project ID:

Date Prepared: 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399258-004 D

Date Analyzed: 12/07/2010 01:22

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY										
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte		[B]										
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 #:

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	11.7	11.8	1	20	

# **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															F	roje	ct Na	me:	So	uth	ern	Unic	on C	ias	Lar	ndfa	<u>rm</u>			_
	Company Name	Basin Environmental S	ervices	Techn	ologies, LLC						_			<b>-</b>		_		F	roje	ct #:												_
	Company Address:	P.O. Box 301	·		·	<u> </u>										_		Pro	ject	Loc:	Lea	Co	unty	, NM								_
	City/State/Zip:	Lovington, NM 88260														_			P	O #:			9	<u> 178</u>	7							_
	Telephone No:	(575) 396-2378				Fax No:		(57	5) 3	96-1	1429	•					Rep	ort F	orma	ıt:	X	Star	ndare	d	Ε	] TF	₹RP		۱ []	NPDE	ES	
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# (lab use only)			Beginning Depth	Ending Depth	Date Sampled	Time Sampled	red	Fotal #. of Containers			Vacio					ter SI = Shida	S = Soll/Sol	-Non-Potable Specify Oth	5 TX 1006	S	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	ooli	BTEX 80215/5630 or BTEX 8260			E 300		RUSH TAT (Pre-Schedule) 24		
* g <b>Y</b>	FIEL	_D CODE	Beginn	nding	Date S	Time S	ield Fiftered	otal#.o	80	HNO	D D	H,SO4	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None Other ( Seedifu)	W=Drin	JW = Gr	NP = NOn		Cations (Ca, Mg,	Anions (C	SAR / ES	Metals: A	Volatifes	Brex 80	Ž.	N.O.R.M.	3		HSII	Standa	
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoentx, 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 Enviro	nmental					·		
Date/Time: 12/3/10	1:45							
Lab ID#: 39928								
Initials: XIM								
		Sa	mple Receipt Ch	ecki	ist	(		
1. Samples on ice?					Blue	Water	No	
2. Shipping container in	good condition?				(es)	No	None	
3. Custody seals intact o	n shipping containe	er (cod	oler) and bottles?		Yes	No	N/A	
4. Chain of Custody pres					<b>F85</b>	No		
5. Sample instructions c	omplete on chain of	f cust	ody?		Yes	No		İ
6. Any missing / extra sa	mples?				Yes	No		
7. Chain of custody sign	ed when relinquish	ed / re	ceived?		Yes	No		
8. Chain of custody agre	es with sample labe	el(s)?				No		
9. Container labels legib	le and intact?				Yes	No		
10. Sample matrix / prop	erties agree with ch	rain of	f custody?		Yes	No		
11. Samples in proper co	ontainer / bottle?				Yes	No		
12. Samples property pr	eserved?				Yes	No	N/A	
13. Sample container in	bact?				Yes	No		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
14. Sufficient sample an	nount for indicated t	test(s)	?		Yes	No		
15. All samples received	i within sufficient ho	old tin	ne?		Yes	No		·
16. Subcontract of samp	ple(s)?				Yes	No	N/A	
17. VOC sample have ze	ro head space?				Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 N	0.	Cooler 5 No.	
lbs O°C	ibs	°C	ibs	°C	ibs	°c	ibs	°C
	P	Vonc	onformance Doc	ume	ntation			
Contact:	Contact			4		Date/Time:		
	Oonac	ueu uy	·			Daw I line		
Regarding:			·					
Corrective Action Taker	n:							
Check all that apply:			egun shortly after sam			out of tempe	rature	
	condition ac	ccepta	able by NELAC 5.5.8.3	.1.a.1				•

☐ 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



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 (AALII), 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)

Venes Doss Deten (EDA Leh Code: EL01972):

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.

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. 399289 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 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-8347.18 TPH By SW8015 Mod



## Certificate of Analys

ummary 399289

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

**nelad** 

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

						Proje	ct Manager:	Brent Barron, I	<u> </u>	 
	Lab Id:	399289-0	01	-						
Analysis Requested	Field Id:	TZ Cell 8	G-2							
Analysis Requesteu	. Depth:									
	Matrix:	SOIL								
	Sampled:	Dec-01-10 1	2:45		*					
Anions by E300	Extracted:							-		
·	Analyzed:	Dec-07-10 (	1:22							
	Units/RL:	mg/kg	RL			ĺ				
Chloride		24.3	17.4							
Percent Moisture	Extracted:									
	Analyzed:	Dec-06-10	2:55							-
	Units/RL:	%	RL						İ	
Percent Moisture		3.23	1.00							
TPH By SW8015 Mod	Extracted:	Dec-06-10 1	1:00							
	Analyzed:	Dec-07-10 (	00:28							
	Units/RL:	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.

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

/ork Orders: 399289,

**Sample:** 590499-1-BKS / BKS

**Project ID:** 

Lab Batch #: 834718

Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 12/06/10 20:37	SU	IRROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		(-)	[D]		
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:

Matrix: Solid

SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 12/06/10	20:56	SURRUGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	'	, ,	[D]					
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:

Matrix: Solid

Units	: mg/kg

Date Analyzed: 12/06/10 21:15

TPH By SW8015 Mod

**Analytes** 

SURROGATE RECOVERY STUDY										
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
78.5	100	79	70-135							

Lab Batch #: 834718

1-Chlorooctane o-Terphenyl

o-Terphenyl

Sample: 399289-001 / SMP

Batch:

39.2

35.3

Matrix: Soil

70

70-135

70-135

Flags

50.2

50.1

	Units: mg/kg	Date Analyzed: 12/07/10 00:28	SU 	RROGATE R	ECOVERY	STUDY
	ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R
		Analytes			[D]	
ī	I-Chlorooctane		72.0	100	72	70-135

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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				Y						
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 IFI	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	_	[-]		[-]	[2]		,				<u> </u>
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



rk Order #: 399289

**Lab Batch #:** 834917 **Date Analyzed:** 12/07/2010

Project ID:

Date Prepared: 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399258-004 S

Batch #:

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	<u> </u>		

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

Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399289

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 #:

Matrix: Soil

Reporting Units: mg/kg		SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Anions b	y E300	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag
Analy	yte		[B]			
Chloride		117	114	3	20	

Lab Batch #: 834604

Date Analyzed: 12/06/2010 12:55

**Percent Moisture** 

Analyte

**Date Prepared: 12/06/2010** 

Analyst: JLG

QC- Sample ID: 399258-004 D

Batch #:

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVER
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
11.7	11.0	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

## 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																Pro	ject	Nan	1e: <u>S</u>	<u>Sou</u>	the	rn L	<u>Inio</u>	n G	as I	_and	dfarı	n_		
	Company Name	Basin Environmental S	Services	Techn	ologies, LLC														Pro	oject	#:_											
	Company Address:	P.O. Box 301														_		P	roje	ct Lo	xc: L	.ea (	Cou	nty,	NM							
	City/State/Zip:	Lovington, NM 88260														_				PO	#:			9	78	7						
	Telephone No:	(575)396-2378				Fax No:		(57	5) 3	96-1	429						Re	port	For	mat:	[2	<u> </u>	tano	lard		-	TRI	RP		_ N	IPDE:	3
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LAB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		HNO				03	None None	ofor 61 - Cludo	S = Soll/Sol	pecify Oth	흶	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Ci. SC4, Alkalimity)	Motor: At At By Cally Dr. Up St.	wetals as ay be out or high se	Semivolatiles	<b>STEX 802TB/5030</b> or BTEX 8260	RCI	N.O.R.M.	002.2 -10		ž,	Standard TAT 4 DAY
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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: BOSIN ENVIR	onmental							
Date/Time: 12/3/10								
Lab ID#: 399280	_ •			_				
Initials:								
•		Sa	mple Rece	eipt Checkl	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container in	n good condition?				(es)	No	None	<u> </u>
3. Custody seals intact		iner (co	oler) and bott	ies?	Yes	No	NA	
4. Chain of Custody pre					(TES)	No		
5. Sample instructions	complete on chain	of cust	ody?		) Tes	No		
6. Any missing / extra s	amples?				Yes	(No)		
7. Chain of custody sig	ned when relinquis	shed / re	ceived?		Yes	No		
8. Chain of custody ag					TES	No		
9. Container labels legi	ble and intact?				Yes	No		
10. Sample matrix / pro	perties agree with	chain o	f custody?		Yes	No ·		
11. Samples in proper	container / bottle?				Yes	No		
12. Samples properly p	reserved?				Yes	No	NA	
13. Sample container i	ntact?				Yes	No		
14. Sufficient sample a	mount for indicate	d test(s	)?		(Yes)	No	,	
15. All samples receive	d within sufficient	hold tir	ne?		(Yes)	No		
16. Subcontract of san	npie(s)?				Yes	No	NA	
17. VOC sample have a	zero head space?				Yes	No	NA )	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 No	).	Cooler 5 No.	
lbs O	C lbs	ာင		ibs °C	lbs	ეი	lbs	°c
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Contact:	Conta	acted by	/:			Date/Time:_		
Pagardina.		•						
Regarding:					<del></del>			
Corrective Action Take	ən:							
Check all that apply:	□Cooling process	e hae h	eaun sharthr	fter campling	event and	out of temper	rature	,
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	☐ Initial and Back ☐ Client understa	up Tem	perature conf	firm out of ten	nperature co	onditions		

Final 1.001

## **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



#### 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 (AALII), 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: 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

Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
S	Dec-01-10 12:05	•	399298-001
S	Dec-01-10 12:10		399298-002
S	Dec-01-10 12:10		399298-003
S	Dec-01-10 12:15	•	399298-004
S	Dec-01-10 12:20		399298-005
	S S S	S Dec-01-10 12:05 S Dec-01-10 12:10 S Dec-01-10 12:10 S Dec-01-10 12:15	S Dec-01-10 12:05 S Dec-01-10 12:10 S Dec-01-10 12:10 S Dec-01-10 12:15



#### 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

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



Project Id:

Contact: Rose Slade

Project Location: Lea County, NM

#### Certificate of Analysi ummary 399298

#### Southern Union Gas Services- Monahans, Monahans, TX

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

· · · · · · · · · · · · · · · · · · ·								Project Ma	nager:	Brent Barron,	[]	
	Lab Id:	399298-0	001	399298-0	002	399298-0	003	399298-0	004	399298-0	005	
Analysis Requested	Field Id:	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	
Analysis Requested	Depth:											
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		•
	Sampled:	Dec-01-10	12:05	Dec-01-10	12:10	Dec-01-10 1	12:10	Dec-01-10	12:15	Dec-01-10	12:20	
Anions by E300	Extracted:											
	Analyzed:	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	•
	Units/RL:	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	
Percent Moisture	Extracted:											-
	Analyzed:	Dec-06-10	15:35	Dec-06-10	15:35	Dec-06-10 1	15:35	Dec-06-10	15:35	Dec-06-10	15:35	
	Units/RL:	%	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	
TPH By SW8015 Mod	Extracted:	Dec-06-10	11:00	Dec-06-10	11:00	Dec-06-10 1	11:00	Dec-06-10	11:00	Dec-06-10	11:00	
	Analyzed:	Dec-07-10	12:25	Dec-07-10	12:53	Dec-07-10 l	13:21	Dec-07-10	13:51	Dec-07-10	14:21	
	Units/RL:	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 Laboratorics 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

Page 5 of 13



## 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
- **POL** 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

'ork Orders: 399298.

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Project ID:

Matrix: Solid Batch: 1

Units: mg/kg Date Analyzed: 12	/07/10 04:08 SU	JRROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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

SURROCATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 12/07/10 04:38	SURROGATE RECOVERT STODT										
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes	, ,	"-"	[D]								
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:

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: 399298-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY	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	51.4	49.9	103	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

50.2

Work Orders: 399298,

Project ID:

Lab Batch #: 834901

Sample: 399298-003 / SMP

Matrix: Soil Batch: 1

Units: mg/kg

SURROGATE RECOVERY STUDY Date Analyzed: 12/07/10 13:21 Amount True Control TPH By SW8015 Mod Recovery Limits Found Amount Flags [A] [B] %R %R  $|\mathbf{D}|$ **Analytes** 105 99.8 105 70-135

Lab Batch #: 834901

1-Chlorooctane

o-Terphenyl

Sample: 399298-004 / SMP

Batch:

Matrix: Soil

101

70-135

49.9

SURROGATE RECOVERY STUDY Date Analyzed: 12/07/10 13:51 Units: mg/kg Amount True Control TPH By SW8015 Mod Recovery Limits Flags Found Amount [B] %R [A] %R [D] **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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 1	4:21 SU	RROGATE R	ECOVERY S	STUDY	_
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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 Analytes	Amou Foun [A]		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 Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### BS / BSL xecoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399298

Analyst: LATCOR

**Date Prepared:** 12/07/2010

**Project ID:** 

**Date Analyzed:** 12/07/2010

Sample: 834922-1-BKS

Matrix: Solid

Lab Batch ID: 834922

Batch #: 1

Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	<b>ICATE</b>	RECOVI	ERY STUD	Υ	
Anions by E300  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	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	Units: mg/kg 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	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 Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

**Date Analyzed:** 12/07/2010 **QC- Sample ID:** 399292-003 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUD									
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\*(C-A)/BRelative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: 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 #:

Matrix: Soil

Reporting Units: %

SAMPLE/SAMPLE DUPLICATE RECOVERY

Keborting Chitist 70	John ED,	DAIVII LL	D CI DIC	MID REC	O I DICI
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]	,	r	
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

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	AIE REC	OVERY
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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	

#### 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														- Pro	ojed	t Na	me:	501	ithe	rn U	nio	n Ga	<u>as L</u>	<u>_anc</u>	dtari	<u>m</u>		
	Company Name	Basin Environment	al Services	Techn	ologies, LLC	<u>.</u>										_	P	rojec	:t #:										<del></del>	
	Company Address:	P.O. Box 301														_	Proj	ect L	.oc:	Lea	Cou	nty, N	IM							
	City/State/Zip:	Lovington, NM 882	60			<del></del>										<del>-</del>		P	<b>) #</b> :			90	<u>78</u>	7						
	Telephone No:	(575) 396-2378				Fax No	:	(57	5) 3	96-1	429		· ·			Report	t Fo	rmat	t:	X,	Stand	dard			TRF	٦P	[		PDES	3
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(lab use		· 1															E			TC	LP:	Analy	Zer			7		T	- E	l
ORDER	i#: 399°	298						1	Pre	serv	atio	n & /	of C	ontai	ners	Matrix	異	γ		101			╀	\ <del>X</del>			1	1	48, 72 hrs	l
LAB # (leb use only)		LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	ece.	HNO <sub>3</sub>	HCI	<sup>*</sup> OS²H	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Other (Specify)	DW-Drinking Water StSludg GW - Groundwater 5Soli/Sol NP-Non-Potable Specify Oth	TPH: 418.1 8015/N 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Volatiles	Semivolatiles	BIEX-80248/5030 or BTEX 8260	RCI	W.	CI E300		24	Standard TAT 4 DAY
i	TZ C	Cell 9 G-1			12/1/10	1205		1	X							SOIL	x								$\Box$	floor	x			х
2	TZC	eli 9 G-2			12/1/10	1210		1	X				$\perp$			SOIL	x				$\perp$		L				X			X
3	TZC	ell 9 G-3		<u> </u>	12/1/10	1210		1	х		$\bot$			$\perp$	$\perp$	SOIL	X					<u> </u>				$\perp$	х		$\coprod$	X
4	TZ C	ell 9 G-4			12/1/10	1215		1	Х							SOIL	x					L	L		$\bot$		x	$\perp$	$\coprod$	X
5	TZ C	ell 9 G-5			12/1/10	1220		1	X		$\perp$	_	4		_	SOIL	X				$\bot$	1			$\dashv$	1	x	$\perp$	Ш	X
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Special I	nstructions:						نــــــــــــــــــــــــــــــــــــــ										<u> </u>		Lab	orate	ory C	omn	ent	<u></u> s:						
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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

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

## Prelogin / Nonconformance Report - Sample Log-In

o .	<b>~</b> :	,	1				•	•		
Client: Basil		nuenta	<u> </u>							
Date/Time:  2	13/10	1:45		·						
Lab ID#: 39	9298	· .								
Initials: XM										
			S	ample Rec	eipt Ch	eckli	ist			
1. Samples on	ice?						Blue	Water	No	
2. Shipping cor	ntainer in	good condi	tion?				(es)	No	None	
3. Custody sea	ls intact o	n shipping	container (co	oler) and bot	ties?	(	Yes	No	N/A	
4. Chain of Cus	stody pres	sent?					<b>785</b>	No		
5. Sample inst	ructions c	omplete on	chain of cust	tody?			Tes	No		
6. Any missing	/ extra sa	imples?					Yes	No		
7. Chain of cus			inquished / r	eceived?			Yes	No		
8. Chain of cus	stody agre	es with san	ple label(s)?	· .			76	No		
9. Container la							Yes	No		
10. Sample ma	trix / prop	erties agree	with chain o	of custody?			Yes	No -		
11. Samples in	proper c	ontainer / bo	ottie?				Yes	No		
12. Samples p	roperty pr	eserved?					Yes	No	N/A	
13. Sample col	ntainer int	tact?					(Yes)	No		
14. Sufficient s	sample an	nount for inc	dicated test(s	)?			Yes	No		
15. All samples	s received	within suff	icient hold ti	me?			(Yes)	No		
16. Subcontrac	ct of samp	oie(s)?					Yes	No	N/A	
17. VOC samp	le have ze	ro head spa	ice?				Yes	No	NA	
18. Cooler 1 N		Cooler 2 N		Cooler 3 No.			Cooler 4 No	).	Cooler 5 No.	
lbs	0 %		°c		lbs	°C	lbs	°c	1	°c
			None	onforman	ce Docu	ımeı	ntation	-		
Contact:			Contacted by	v:				Date/Time:		
				·				2007		
Regarding: _		<del></del>					•			
Corrective Act	tion Taker	1:			·			· · · · · · · · · · · · · · · · · · ·		
								<u> </u>		
Check all that	apply:	□Cooling p	rocess has b	egun shortly a	after sam	pling	event and c	out of tempe	rature	

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

Final 1.001

## **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

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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: 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 D	epth 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 Analysi ummary 399297

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

inelad:

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

								Project Mai	nager:	Brent Barron, II		
•	Lab Id:	399297-0	001	399297-0	002	399297-0	03	399297-0	04			
Analysis Requested	Field Id:	TZ Cell 10	<b>G</b> -1	TZ Cell 10	G-2	TZ Cell 10	G-3	TZ Cell 10	G-4			
Analysis Requested	Depth:											
	Matrix:	SOIL		SOIL		SOIL		SOIL				
	Sampled:	Dec-01-10	12:25	Dec-01-10	12:25	Dec-01-10	12:30	Dec-01-10	12:30			
Anions by E300	Extracted:					· · · · · · · · · · · · · · · · · · ·						
•	Analyzed:	Dec-07-10	09:53	Dec-07-10	09:53	Dec-07-10 (	9:53	Dec-07-10 (	09:53			
·	Units/RL:	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			
Percent Moisture	Extracted:	-										
	Analyzed:	Dec-06-10	15:35	Dec-06-10	15:35	Dec-06-10	15:35	Dec-06-10	15:35			
	Units/RL:	%	RL	%	RL	% .	RL	%	RL			
Percent Moisture		1.22	1.00	1.89	1.00	1.62	1.00	2.21	1.00			
TPH By SW8015 Mod	Extracted:	Dec-06-10	11:00	Dec-06-10	11:00	Dec-06-10 !	1:00	Dec-06-10	1:00			
	Analyzed:	Dec-07-10	10:02	Dec-07-10	11:00	Dec-07-10	1:29	Dec-07-10	11:57			
	Units/RL:	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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Final 1.001

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: 399297,

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS

Project ID:

Batch: Matrix: Solid

49.9

SURROGATE RECOVERY STUDY Units: mg/kg Date Analyzed: 12/07/10 04:08 Amount True TPH By SW8015 Mod Control Found Amount Recovery Limits Flags %R [A] [B] %R [D] **Analytes** 1-Chlorooctane 70-135 107 99.7 107

48.1

Lab Batch #: 834901

o-Terphenyl

Sample: 590595-1-BSD / BSD

Batch:

Matrix: Solid

96

70-135

Units: mg/kg Date Analyzed: 12/07/10 04:38	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		i
I-Chlorooctane	102	100	102	70-135	
o-Terphenyl	46.8	50.1	93	70-135	

Lab Batch #: 834901

Sample: 590595-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 05:08	SU	RROGATE RI	ECOVERY S	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	SU	RROGATE R	<b>ECOVERY</b>	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	·		[D]	. ,	
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	SU	RROGATE RI	ECOVERY S	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



## Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

Work Orders: 399297,

Sample: 399297-003 / SMP

Project ID:

Lab Batch #: 834901

Sample. 377277 0037 Sill

Batch: 1 Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 11:29	SU	RROGATE F	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		•	[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 11:57	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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 15:4	48 SU	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 Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution







Project Name: Southern Union Gas Landfarm

Work Order #: 399297

Lab Batch ID: 834922

Analyst: LATCOR

Date Prepared: 12/07/2010

**Project ID:** 

Date Analyzed: 12/07/2010

Batch #: 1 Sample: 834922-1-BKS

Matrix: Solid

Units: mg/kg

Anions by E300

	BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE I	RECOVI	ERY STUD	Y	
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
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

**Analytes** Chloride

Sample: 590595-1-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	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

Batch #:

Project ID:

2/07/2010 Analyst: LATCOR

QC- Sample ID: 399292-003 S

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUD								
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\*(C-A)/BRelative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: 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 #:

Matrix: Soil

Reporting Units: %

SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

Lab Batch #: 834901

Percent Moisture

Date Analyzed: 12/07/2010 15:48

**Percent Moisture** 

Analyte

Date Prepared: 12/06/2010

Analyst:BEV

QC- Sample ID: 399298-005 D

Batch #: Matrix: Soil

Reporting Units: mg/kg	SAMPLE / SAMPLE DUPLICATE RECOVERY											
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag							
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

## **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				<u> </u>										-	Proje	ct N	ame:	So	uth	ern	Uni	on G	as	Lan	dfarı	<u>m_</u>		
		Company Name	Basin Environmental	Services	Techn	ologies, LLC											_	1	Proje	ct #:											
		Company Address:	P.O. Box 301														_	Pro	ject	Loc	Lea	Сон	unty	, NM							
		City/State/Zip:	Lovington, NM 88260																F	O#:			9	176	17						
		Telephone No:	(575) 396-2376.				Fax No:		(50	5) 3	96-	1429					- Rep	ort F	orma	at:	X	Star				TR	(RP	!	☐ NF	PDES	 s
		Sampler Signature:	3002 lows	y			e-mail:		pn	n@	)ba	sine	env	.cor	<u>n</u>			_													_
	(lab use	only)			-																TO	CLP:	Ana	alyze	For:	<u> </u>			T	72 hrs	
	AB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Fotal #. of Containers		63	vatio		of CC.		Other (Specify)	DW-Drinking Water StStudg GW - Groundwater SSoll/Sol	NP = Non-Potable Specify Oth	TX 1005 TX 10	Na. K)	Anions (Cl, SO4, Alkatinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	BFEK 80218/5020 or BTEX 8260		N.O.R.M.	CI- E 300		RUSH TAT (Pre-Schedule) 24, 48,	Standard TAT 4 DAY
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	3	TZ Ce	ell 10 G-3			12/1/10	1230		1	Х		П		T		Τ	SOI		$\overline{a}$	Γ		T	П	Ţ	T	Г		x		$\mathbf{L}$	X
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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: BODIN Environmental	•	•		•
Date/Time: 12/3/10 1:45				
Lab ID#: 399297			:	÷
Initials: XIV				
Sample Receipt Ch	ecklist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	/(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	785	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)?	(Fig)	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.	
ibs O°C ibs °C ibs	°C lbs	°c	lbs	°c
Nonconformance Doc	umentation			
Contact: Contacted by:		Date/Time:		
Regarding:				
Corrective Action Taken:				
	· · · · · · · · · · · · · · · · · · ·			
Check all that apply:   Cooling process has begun shortly after same	pling event and	out of tempe	rature	

Final 1.001

□ 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



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: 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

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

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## **Sample Cross Reference 399296**



### Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected Sample Dep	th Lab Sample Id
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 Analys** ummary 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 Manag	er: Brent Barron, II	
	Lab Id:	399296-0	01	399296-0	002				
Analysis Requested	Field Id:	TZ Cell 11	G-1	TZ Cell 11	G-2·	,			
Anuiysis Requested	Depth:								
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-01-10 1	3:10	Dec-01-10	13:15				
Anions by E300	Extracted:								
	Analyzed:	Dec-07-10 (	09:53	Dec-07-10	09:53				
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		215	43.1	44.1	21.6				
Percent Moisture	Extracted:								
	Analyzed:	Dec-06-10 1	15:35	Dec-06-10	15:35				,
	Units/RL:	%	RL	%	RL				
Percent Moisture		2.60	1.00	2.64	1.00				
TPH By SW8015 Mod	Extracted:	Dec-06-10 1	11:00	Dec-06-10	11:00				
	Analyzed:	Dec-07-10 (	9:06	Dec-07-10	09:34	•			
	Units/RL:	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.

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	rax
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: 399296,

Lab Batch #: 834901

Project ID:

Sample: 590595-1-BKS / BKS

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 04	:08 SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes		1	[D]		ĺ		
I-Chlorooctane	107	99.7	107	70-135			
o-Terphenyl	48.1	49.9	96	70-135			

Lab Batch #: 834901

Sample: 590595-1-BSD / BSD

Matrix: Solid Batch: 1

Batch:

SURROGATE RECOVERY STUDY Date Analyzed: 12/07/10 04:38 Units: mg/kg Amount True Control TPH By SW8015 Mod Flags Limits Found Recovery Amount [A] [B] %R %R [D]**Analytes** 1-Chlorooctane 102 100 102 70-135

46.8

Lab Batch #: 834901

o-Terphenyl

Sample: 590595-1-BLK / BLK

1 Matrix: Solid

93

70-135

50.1

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	Control Limits %R	Flags		
Analytes			[D]				
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					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
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	9:34 SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	Analytes	95.7	101	95	70-135		
o-Terphenyl		45.9	50.3	91	70-135	<del>                                     </del>	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	103	99.5	104	70-135		
o-Terphenyl .	49.5	49.8	99	70-135		

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution







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	Anions by E300  Blank Spike Spike Spike Spike Added Spike Result All Result Spike Result Spike Result Spike Result Spike Result Spike Result Spike Spi										
Anions by E300	Sample Result		Spike	Spike		Spike	Dup.		Limits	Limits	Flag
Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]				
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  Blank Spike Blank Spike Blank Spike Blank Blk. Spk Control Control Sample Result Added Spike Spike Added Spike Dup. RPD Limits Limits Flag									
TPH By SW8015 Mod Analytes								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

Date Prepared: 12/07/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399292-003 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATE	MATRIX / MATRIX SPIKE RECOVERY STUDY									
Inorganic Anions by EPA 300  Analytes	Parent Sample Result	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\*(C-A)/B Relative Percent Difference [E] = 200\*(C-A)/(C+B) All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399296

Lab Batch #: 834633

Project ID: Analyst:JLG

Date Analyzed: 12/06/2010 15:35 QC-Sample ID: 399292-003 D

Date Prepared: 12/06/2010

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE,	DUPLIC	ATE REC	OVERY
Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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							

# Page 12 of 13

# **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	<u> </u>														. Р	roje	ct Na	ıme:	Sou	ıthe	<u>rn l</u>	<u> Inio</u>	n G	<u>as L</u>	and	farn	<u>n</u>		
	Company Name	Basin Envir	ronmental Se	rvices	Techno	ologies, LLC											-	P	roje	ct #:								<u>.</u>			
	Company Address:	P.O. Box 38	11														_	Pro	ject	Loc:	Lea	Cou	nty,	NM							
	City/State/Zip:	Lovington,	NM 88260																P	O #:			91	78	2_						
	Telephone No:	(575) 396-23	378				Fax No:		(57	5) 3	96-1	429					Repo	rt Fo	orma	ıt:	X	Stand	dard		Π	TRR	 ₹P	[	NP	DES	 د
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AB # (lab use only)	FIFI	D CODE		Beginning Depth	Ending Depth	Date	Time Sampled	Field Filtered	Total #. of Containers	lce	ENO.	맞	H,50	NaOH	None	Other (Specify)	DW = Drinking Water GW = Groundwater	TPH: 418.1 (8015ND	TPH:	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	Semivolatiles	<b>ETEX 8021B/5020</b> or BTEX 8260	یَ	N.O.R.M.	5		RUSH TAT (Pre-Schedule)	Standard TAT 4 DAY
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoentx, 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 Baan Environmental		•	•	
Date/Time: 12/3/10 1:45				
Lab ID#: 39996				
Initials: ZIV				
Sample Receipt Ch	ecklist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(Tes)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	Tes	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)?	TEST	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Yea	No ·		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes)	No	N/A	
13. Sample container intact?	Yes	No	<u> </u>	
14. Sufficient sample amount for indicated test(s)?	Yes	No	<b></b>	
15. All samples received within sufficient hold time?	Yes	No	ļ <u> </u>	
16. Subcontract of sample(s)?	Yes	No	NA	
17. VOC sample have zero head space?	Yes	No	N/A )	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 N	٥.	Cooler 5 No.	
lbs () °C lbs °C lbs	°C ibs	00	lbs	<u></u>
Nonconformance Doc	umentation			
Contacted by:		Date/Time:_		
Regarding:				
Corrective Action Taken:				
Check all that apply:   Cooling process has begun shortly after same condition acceptable by NELAC 5.5.8.3  Dinitial and Backup Temperature confirm out of the confir	.1.a.1.		rature	٠

Final 1.001

☐ 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



#### 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: 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	<b>Date Collected</b>	Sample Depth	Lab Sample Id
TZ Cell 12 G-1	S	Dec-01-10 13:25		399294-001

# NCO

#### 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



Project Id:

#### **Certificate of Analys** ummary 399294

## Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

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	
	Lab Id:	399294-0	001					
Analysis Requested	Field Id:	TZ Cell 12	G-1	r			~	,
Analysis Requested	Depth:							
	Matrix:	SOIL						
	Sampled:	Dec-01-10	13:25					
Anions by E300	Extracted:		_					
	Analyzed:	Dec-07-10	09:53					
<u> </u>	Units/RL:	mg/kg	RL					
Chloride		ND	43.5					
Percent Moisture	Extracted:							
	Analyzed:	Dec-06-10	15:35				·	`
<u> </u>	Units/RL:	%	RL	,				
Percent Moisture		3.38	1.00					
TPH By SW8015 Mod	Extracted:	Dec-06-10	11:00					
•	Analýzed:	Dec-07-10	08:06				·	
	Units/RL:	mg/kg	RL		İ			
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					

Page 5 of 12

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

Final 1.001

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 Cornus Christi TX 78408	(361) 884-0371	(361) 884-9116



# Form 2 - Surrogate Recoveries

Project Name: Southern Union Gas Landfarm

'ork Orders: 399294,

Lab Batch #: 834901

**Project ID:** 

**Sample:** 590595-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 12/07/10 04:08	SU	RROGATE R	RECOVERY	STUDY	_
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 04:38	SU	RROGATE F	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount  B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I-Chlorooctane	103	100	103	70-135	
o-Terphenyl	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399294-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 08:06	SŲ	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			ועון		
I-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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 15:48	SU	RROGATE R	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	i

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVE	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C] ,	[D]	{E}	Result [F]	[G]				İ
Chloride	ND	10.0	10.6	106	10	11.7	117	10	75-125	20	

Analyst: BEV

**Date Analyzed:** 12/07/2010

Matrix: Solid

Lab Batch ID: 834901

**Sample:** 590595-1-BKS

Batch #: 1

Date Prepared: 12/06/2010

Units: mg/kg	Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	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	l	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

2



## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



\*\*'ork Order #: 399294

Lab Batch #: 834922

Lau Daten #1 034922

**Date Prepared:** 12/07/2010

**Project ID:** 

Analyst: LATCOR

**Date Analyzed:** 12/07/2010 **QC- Sample ID:** 399292-003 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUD										
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\*(C-A)/BRelative Percent Difference [E] = 200\*(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 #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag								
Analyte	'	<b>[B]</b>											
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE/SAMPLE DUPLICATE RECOVERY										
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
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							

# Page 11 of 12

# 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	Ben Arguijo										-	Pr	ojeç	t Na	me:	So	uthe	ern	Uni	on	Gas	<u>: La</u>	ndfa	ırm			_				
	Company Name	Basin Environ	mental Se	rvices	Techno	ologies, LLC											_		P	rojec	t#:												
	Company Address:	P.O. Box 301										*					_	ł	Proje	ect L	.oc:	Lea	Col	ınty	, NM	1							_
	City/State/Zip:	Lovington, NM	1 88260																	PC	) #:			9	171	87	ı						
	Telephone No:	(575) 396-2378					Fax No:		(57	5) 3	96-1	429					- F	Repor	t Fo	rmat	:	X	Stan			_		RRP	<b>,</b>		NPD	)ES	
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AB # (lab use only)		D CODE		eginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Fotal #. of Containers			HCI			None	(Specify)	ter SL-Sludg	GW = Groundwater S = Soli/Sol	ğ	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	<b>CHEK-GOLTIERS 30-</b> OF BIEX 8260	N N N N N N N N N N N N N N N N N N N	(1- 15200	2		اِ يَ	Standard TAT 4 DAY
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AND DESCRIPTION OF THE PROPERTY OF THE PROPERT



#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dalias 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: DAGNENVIronMental				
Date/Time: 12/3/10 1:45				
Lab ID#: 399294				
Initials: All				
Sample Receipt Che	ecklist			
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?	(TBS)	No		
5. Sample instructions complete on chain of custody?	(Tean)	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)?	THE STATE OF THE S	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 property 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	<u> </u>	··
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	<b>)</b> .	Cooler 5 No.	
ibs O °C ibs °C ibs	°C lbs	°c	lbs	°C
Nonconformance Docu	mentation			
Contact:Contacted by:		Date/Time:		
Regarding:				
Corrective Action Taken:		<del></del>		
Check all that apply: □Cooling process has begun shortly after same	pling event and	out of tempe	rature	
condition acceptable by NELAC 5.5.8.3.	1.a.1.		•	•
□ Initial and Backup Temperature confirm out o	t temperature co	namons		

☐ Client understands and would like to proceed with analysis

# **Analytical Report 399291**

## for Southern Union Gas Services- Monahans

Project Manager: Rose Slade

Southern Union Ga 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: 399291

Southern Union Ga 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 399291. 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 399291**



## Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Ga Landfarm

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
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



Project ld:

Contact: Rose Slade

Project Location: Lea County, NM

## **Certificate of Analys**

# ummary 399291

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Ga Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm

Brent Barron, II Odessa Laboratory Manager

Report Date: 10-DEC-10 Project Manager: Brent Barron, II

				 		Project Manager:	Diciti Dairon, II		
	Lab Id:	399291-00	)1						
Analysis Requested	Field Id:	TZ Cell 13 (	G-1						
Anatysis Requesteu	Depth:								
	Matrix:	SOIL							
	Sampled:	Dec-01-10 1	3:30 .						
Anions by E300	Extracted:								
	Analyzed:	Dec-07-10 0	1:22	1					
	Units/RL:	mg/kg	RL						
Chloride		425	22.3						
Percent Moisture	Extracted:								
1	Analyzed:	Dec-06-10 1	2:55						
	Units/RL:	%	RL		•			ı	
Percent Moisture		5.63	1.00						
TPH By SW8015 Mod	Extracted:	Dec-06-10 1	1:00			·			
1	Analyzed:	Dec-07-10 0	2:42		ŀ			• •	
	Units/RL:	mg/kg	RL		į		,		
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				-		

Page 5 of 12

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 Laboratorics 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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## 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
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(361) 884-0371	(361) 884-9116
	(281) 240-4200 (214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800



# Form 2 - Surrogate Recoveries

Project Name: Southern Union Ga Landfarm

'ork Orders: 399291,

Lab Batch #: 834718

Sample: 590499-1-BKS / BKS

Project ID:

Batch: 1

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 20:3	7 SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-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	Control Limits %R	Flags		
Analytes			[D] ·	İ			
1-Chlorooctane	78.1	100	78	70-135	<del></del>		
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						
•	SW8015 Mod	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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
1-Chlorooctane	75.0	99.8	. 75	70-135			
o-Terphenyl	37.4	49.9	75	70-135			

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

il 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		BLAN	K/BLANK S	PIKE / E	BLANK S	PIKE DUPL	ICATE	RECOVE	ERY STUD	<u>Y</u>	
	Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
.	Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]				
Į	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 Analytes	Biank Sampie Resuit [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



rk Order #: 399291

Lab Batch #: 834917

Project ID:

Date Analyzed: 12/07/2010

**Inorganic Anions by EPA 300** 

**Analytes** 

Date Prepared: 12/07/2010

Analyst: LATCOR

QC-Sample ID: 399258-004 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg

Chloride

MATRIX / MATRIX SPIKE RECOVERY STUDY									
Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag				
117	227	350	103	75-125					

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

Below Reporting Limit



## **Sample Duplicate Recovery**



Project Name: Southern Union Ga Landfarm

Work Order #: 399291

Lab Batch #: 834917

Analyst: LATCOR

Project ID:

Date Analyzed: 12/07/2010 01:22 QC- Sample ID: 399258-004 D

**Date Prepared:** 12/07/2010 Batch #:

Matrix: Soil

Reporting Units marka

SAMPLE / SAMPLE DUPLICATE RECOVERY

Keporting Onits: mg/kg	SAMI DE / SAMI DE DOI DICATE RECO							
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag			
Analyte		[B]						
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 #:

Matrix: Soil

Reporting	Units:	%
-----------	--------	---

SAMPLE	/ SAMPLE	DUPLICA	ATE	REC	OVERY	
Parent Sample	Sample		Cor	itrol		

Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	11.7	11.8	1	20	

#### 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															Proj	ect N	lame	: <u>S</u>	outh	ern	Un.	<u>ion</u>	Ga	s La	indf	<u>arm</u>			_
	Company Name	Basin Environmenta	al Services	Techno	ologies, LLC													Proj	ect #	:											
•	Company Address:	P.O. Box 381															Pr	oject	Loc	: <u>Le</u>	a Co	unt	, NN	<u>*                                      </u>							
	City/State/Zip:	Lovington, NM 8826	50															í	PO#	:		9	17	87	<u>,                                     </u>						
	Telephone No:	(575) 396-2378				Fax No:		(57	5) 39	96-14	429					Re	port f	orm	at:	X	Sta	ndai	d		<u> </u>	TRRE	>		NPDE	ES	
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AB # (lab use only)		_D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		1,3		H <sub>2</sub> SO <sub>4</sub>	3	None		DW-Drinking Water SL-Sludg GW - Groundwater S-Soli/Sol	ole Specify Oth	TPH: TX 1005 TX 1006	Ę	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	DTEX 86218/5030 or BTEX 8260	RCI.	C1- F 200)		7		
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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#: 39929				
Initials: AM				
Sample Receipt Chec	cklist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	NA	
4. Chain of Custody present?	(Tes	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?	(Ves)	No		
8. Chain of custody agrees with sample label(s)?	THE STATE OF THE S	No		
9. Container labels legible and intact?	Yes	No		
10. Sample matrix / properties agree with chain of custody?	Y	No ·		
11. Samples in proper container / bottle?	Yes	No		
12. Samples properly preserved?	Yes	No	NA	
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	NA	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	).	Cooler 5 No.	
ibs O °C ibs °C ibs	°C lbs	°c	lbs	°C
Nonconformance Docur	nentation			
Contact: Contacted by:		Date/Time:		
Regarding:				
Corrective Action Taken:				
	<del> </del>			
Check all that apply: ☐ Cooling process has begun shortly after sample condition acceptable by NELAC 5.5.8.3.1.		out of tempe	rature	
□ Initial and Backup Temperature confirm out of		nditions		

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☐ 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



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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)

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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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# **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

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



Project Id:

## Certificate of Analysi umm

## ummary 399286

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 10-DEC-10



Contact: Rose Slade
Project Location: Lea County, NM

						Project Manager:	Brent Barron, II	
. ;	Lab Id:	399286-0	01					
Analysis Requested	Field Id:	TZ Cell 14	G-1		•			
Anatysis Requestea	Depth:							
	Matrix:	SOIL						
	Sampled:	Dec-01-10 (	08:55			Project Manager: Brent Barron, II		
Anions by E300	Extracted:							
·	Analyzed:	Dec-07-10	01:22					
	Units/RL:	mg/kg	RL					
Chloride		ND	4.27	·				
Percent Moisture	Extracted:		-					
	Analyzed:	Dec-06-10	12:55					
·	Units/RL:	%	RL		•	•	•	
Percent Moisture		1.68	1.00		,			
TPH By SW8015 Mod	Extracted:	Dec-06-10	11:00			•		
	Analyzed:	Dec-06-10	23:12					
	Units/RL:	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.

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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
- **POL** 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

ork Orders: 399286,

Sample: 590499-1-BKS/BKS

**Project ID:** 

Lab Batch #: 834718

Matrix: Solid Batch:

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	Control Limits %R	Flags					
Analytes	11	[2]	[D]	,,,,,						
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 2	20:56 SU	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes		ļ	[D]		<b>,</b>						
I-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 SU	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									
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
	Analytes			(~)							
I-Chlorooctane		73.0	100	· 73	70-135						
o-Terphenyl	-	35.1	50.0	70	70-135						

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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 SPIKE / BLANK SPIKE DUPLICATE RECOVE								ERY STUD	Υ · Y		
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
· 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 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	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



"'ork Order #: 399286

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	MATI	MATRIX / MATRIX SPIKE RECOVERY STUDY											
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag							
Analytes	[A]	[B]											
Chloride	117	227	350	103	75-125								
	<del>  </del>		<u> </u>										

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference [E] = 200\*(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

Anions by E300

Analyte

**Date Prepared:** 12/07/2010

Analyst: LATCOR

QC- Sample ID: 399258-004 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY													
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag									
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 #:

Matrix: Soil

Reporting Units: %

Chloride

						_
CAMD	I E / C/	MDIE	DUDI	CATE	RECOVER	$\overline{\mathbf{v}}$

Reporting Units: 70	SAMI LE JAMI LE DOI LICATE RECOVERT										
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag						
Analyte		[B]									
Percent Moisture	11.7	11.8	i	20							

# age 11 of 12

# **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					·											Pre	ojeci	Mar	ne: _	30u	tnei	'n U	nior	1 68	15 L	and	Tarri	<del>'</del>		
	Company Name	Basin Environme	ental Ser	vices	Techne	ologies, LLC	<u>.                                    </u>			_	_								Pr	ojec	t #:_						···					
	Company Address:	P.O. Box 301																F	Proje	ct L	oc: <u>I</u>	ea (	Cour	ity, f	IM_							
	City/State/Zip:	Lovington, NM 8	8260																	PC	) #: <u>_</u>			910	78	7_						
	Telephone No:	(575) 396-2378					Fax No:		(57	5) 39	)6-1 <sub>4</sub>	129					R	eport	t For	mat	. [	<b>X</b> s	tand	ard			TRR	(P		] NPI	DES	
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(lab use				<u>=</u>																		TCL	P:	Analy L	ze F		П	_	丁	op	뛾	
ORDEF	R#: 39978	م)(ہ							j	Pre	serv	ation	8 # (	of Co	ntain	ers	Ма	trix	88		$\overline{\top}$	TOTA	L: J			X g					46, 72 hra	<u>_</u>
LAB # (lab use cnty)	FIEL	_D CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce	HNO <sub>3</sub>	HCI	nyo O.	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW = Drinking Water St = Sludg		TPH: 418.1 (8015M) 801	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	CA CA PR HG	Volatiles	Semivolatiles	BTEX 8021B/6039 or BTEX 8260	RCI	Σ.	CI 6 300		RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
	TZ Ce	ell 14 G-1				12/1/10	855		1	X				I			sc	)IL	х				I	I		$\square$	П	ightharpoons	x			X
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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 Rasin Environmental	•				
Date/Time: 12/3/10 1:45					
Lab ID#: 399286					
Initials: all					
Sample Receipt Che	ecklist				
1. Samples on ice?	В	lue	Water	No	
2. Shipping container in good condition?		<b>ES</b>	No	None	 
3. Custody seals intact on shipping container (cooler) and bottles?		es	No	N/A	 
4. Chain of Custody present?		<b>8</b>	No		 
5. Sample instructions complete on chain of custody?		<b>(a)</b>	No		 
6. Any missing / extra samples?		es_	No		 
7. Chain of custody signed when relinquished / received?		63	No		 
8. Chain of custody agrees with sample label(s)?		<b>F</b>	No		 
9. Container labels legible and intact?		res	No		
10. Sample matrix / properties agree with chain of custody?		(es	. No ·		 
11. Samples in proper container / bottle?		(es)	No		 
12. Samples property preserved?	-10	(gg)	No	N/A	
13. Sample container intact?	7	(es)	No		
14. Sufficient sample amount for indicated test(s)?		(es)	No		 
15. All samples received within sufficient hold time?	(	res	No		
16. Subcontract of sample(s)?	,	Yes	No	N/A	
17. VOC sample have zero head space?	,	Yes	No	NA )	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Coo	ler 4 N	0.	Cooler 5 No.	
ibs O°C ibs °C ibs	°C	lbs	°C	lbs	°C
Nonconformance Docu	umentat	ion			
Contacted by:			Date/Time:_		 _
Regarding:					
Corrective Action Taken:					
Check all that apply:   Cooling process has begun shortly after sam condition acceptable by NELAC 5.5.8.3.  Initial and Backup Temperature confirm out o	1.a.1.			rature	

Final 1.001

☐ 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)

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

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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)





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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# **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



Project Id:

# Certificate of Analys ummary 399295

### Southern Union Gas Services-Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 14-DEC-10

inelad:

Contact: Rose Slade
Project Location: Lea County, NM

						Project Manager:	Brent Barron, II	_
٠.,	Lab Id:	399295-0	01					
Analysis Requested	Field Id:	TZ Cell 15	G-1	. •				
Analysis Requesteu	Depth:				·			
•	Matrix:	SOIL						
	Sampled:	Dec-01-10 1	3:05					
Anions by E300	Extracted:						-	
·	Analyzed:	Dec-13-10	1:03					
	Units/RL:	mg/kg	RL					
Chloride		26.2	8.82					
Percent Moisture	Extracted:							
	Analyzed:	Dec-06-10	5:35					
	Units/RL:	%	RL					
Percent Moisture		4.72	1.00					
TPH By SW8015 Mod	Extracted:	Dec-06-10	1:00					
	Analyzed:	Dec-07-10 (	8:36			•		
	Units/RL:	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.

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

Final 1.002

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
	(214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800



Project Name: Southern Union Gas Landfarm

ork Orders: 399295,

Project ID:

Lab Batch #: 834901

Sample: 590595-1-BKS / BKS 3

Batch:

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	Control Limits %R	Flags						
Analytes		[,		[D]								
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 04:38	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 05:0	8 SU	RROGATE R	ECOVERY S	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	103	100	103	70-135	
o-Terphenyl .	50.2	50.2	100	70-135	

Lab Batch #: 834901

Sample: 399295-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 12/07/10 08:36	SU	RROGATE RI	ECOVERY	STUDY	-
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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 SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane	103	99.5	104	70-135	
o-Terphenyl	49.5	49.8	99	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	Blank Spike Duplicate Result [F]	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Allarytes		_ ` ′					l				
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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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 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	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



"ork 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 #:

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			

Lab Batch #: 835703

**Date Analyzed: 12/13/2010** 

**Date Prepared: 12/13/2010** 

Analyst: LATCOR

QC-Sample ID: 400359-001 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	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	2450	1000	3570	112	75-125				

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference [E] = 200\*(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]	Duplicate Result	RPD	Control Limits %RPD	Flag			
Analyte		[B]	·	]				
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 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE/SAMPLE DUPLICATE RECOVERY								
TPH By SW8015 Mod  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
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	<u> </u>				

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															Pre	oject	Nan	ne: _	oout	ner	n U	1101	Ga	IS L	and	rarn	<u>^</u>		
	Company Name	Basin Environmental	Services	Techn	ologies, LLC													Pr	ojec	t#:_	<del></del>										
	Company Address:	P.O. Box 301			_												F					•	ity, N								
	City/State/Zip:	Lovington, NM 88260																	PO	#:			91	78	7						
<i>2</i>	Telephone No:	(575) 396-2378				Fax No:		(57	5) 39	96-14	129		•			R	epor	t For	mat	. [	K s					TRR	— :Р	[	NP	DES	3
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(lab use					<del></del>	<del></del>								-				F		-	TCL		Analy	ze F	or:	1	<del>-</del>	_	T	۽	
ORDER	~~~·	295							Pre	serv	ation	8#	of Cor	ntaine	ers	Ma	itrix	_		$\overline{}$	TOTA	Ŀ	+		X					48, 72 hrs	
LAB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		HNO,			Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>		Other ( Specify)	DW-Drinking Water SL-Sludg	Non-Potable Specify Oth	TPH: 418.1 (8015M) 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	Metals: As Ag Ba Cd Cr Po Hg Se	Volatiles	Semivolatiles	<del>DTEX 80219/5</del> 030 or BTEX 8260	RCI	S.M.	CI- 6300		24	Standard TAT 4 DAY
	TZ Ce	ell 15 G-1			12/1/10	1305		1	X		$\bot$	$\bot$	L	Ц		S	)IL	х		$\perp$	1	$\perp$	$\downarrow$				4	x	+	$\downarrow$	×
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,	Lowny ned by:	Date   12/3/10   Date	9:0	me	Received by:	dia					-			13	Da Da	// / (e		Time	70	Labe Cust Cust Sam	is on ody s ody s ple H	con seals seals	taine s on e s on e Deli	er(s) conta coole verec	eineri er(s) d	(s)		A COCO	X CENTRAL S	N N N N N One S	star
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### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonlo, 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: Basil	Enviro	nmental							
Date/Time: 12	13/10	1:45		· <u>*                                     </u>					
Lab ID#: 39	9295	<u> </u>							
Initials: XM	· · · · · · · · · · · · · · · · · · ·								
			S	ample Receipt Ch	ecki	ist			
1. Samples on	ice?					Blue	Water	No	
		good condition?				(es)	No	None	
		on shipping containe	er (cc	poler) and bottles?		Yes	No	N/A_	
4. Chain of Cu						185	No		
		omplete on chain of	cus	tody?		(Ves)	No		
6. Any missing						Yes	No		
7. Chain of cus	stody sign	ned when relinquishe	ed / r	eceived?		Yes	No		
8. Chain of cu	stody agre	ees with sample labe	el(s)?	•		THE STATE OF THE S	No		
9. Container la	bels legib	ole and intact?				Yes	No		
10. Sample ma	trix / prop	perties agree with ch	ain e	of custody?	_	Yes	No ·		
11. Samples in	proper c	ontainer / bottle?		<del></del>		(Yes)	No		
12. Samples p	roperty pr	reserved?				Yes	No	NA	
13. Sample co	ntainer in	tact?				Yes	No		
14. Sufficient	sample an	nount for indicated t	est(s	3)?		(Yes)	No		
15. All sample	s received	d within sufficient ho	d ti	me?		Yes	No		
16. Subcontra	ct of sam	pie(s)?				Yes	No	N/A	
17. VOC same	de have ze	ero head space?		·		Yes	No	N/A )	
18. Cooler 1 N	lo.	Cooler 2 No.		Cooler 3 No.		Cooler 4 N	٥	Cooler 5 No.	
lbs	_ <u>()                                    </u>	C lbs	°C	ibs	°C	lbs	•	lbs	•°C
			lone	conformance Doc	ume	ntation	•		
Contact:		Contact					Date/Time:		
_				<i></i>					<del></del>
Regarding:									
Corrective Ac	tion Take	n:							
	·								
							•		
Charle all the	t annhe	Cooling assess b	٠	egun shortly after san	nolina	event and	out of tempe	rature	
- THE WOOL STATE	rahhià.			able by NELAC 5.5.8.3			ant at restibe	•	•
		□ Initial and Backup	Tak		-e +		anditione		

☐ 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: Patin Environmental		•		
Date/Time: 12/3/10 1:45				
Lab ID#: 399295				
Initials: XM				
Sample Receipt Checkl	ist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	185	No		]
5. Sample instructions complete on chain of custody?	Yes	No		
6. Arry missing / extra samples?	Yes	No		
7. Chain of custody signed when relinquished / received?	Yes	No		
8. Chain of custody agrees with sample label(s)?	<b>F</b>	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	NA	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	<b>).</b>	Cooler 5 No.	
ibs O °C ibs °C ibs °C	ibs	°င	lbs	°C
Nonconformance Docume	ntation			
Contact:Contacted by:	illauoii	Date 577		
Contacted by:		Date/Time:_		
Regarding:	_			
Corrective Action Taken:				
Check all that apply:  Cooling process has begun shortly after sampling		out of temper	ature	•

- □ 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 (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: 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

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-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.

Final 1.000



# Certificate of Analys ummary 377688

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

enela de

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

								Project Ma	nager:	Brent Barron	, 11	
	Lab Id:	377688-	001 ,	377688-0	002	377688-0	003	377688-	004	377688-	005	
Analysis Requested	Field Id:	VZ Cell l	G-1	VZ Cell 1	G-2	VZ Cell 1	G-3	VZ Cell 1	G-4	VZ Cell 1	G-5	
Anatysis Requested	Depth:											
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	.	
	Sampled:	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	
Anions by E300	Extracted:		-									
·	Analyzed:	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	
	Units/RL:	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	
BTEX by EPA 8021B	Extracted:	Jun-19-10	10:15	Jun-19-10	0:55	Jun-19-10 1	10:55	Jun-19-10	10:55	Jun-19-10	10:55	
	Analyzed:	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	
	Units/RL:	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			0.0011		0.0011	ND	0.0011	ND	0.0011	ND	0.0012	
m,p-Xylenes			0.0022		0.0021		0.0022		0.0022		0.0024	
o-Xylene			0.0011		0.0011		0.0011		0.0011			
Total Xylenes			0.0011		0.0011		0.0011		0.0011		0.0012	
Total BTEX		ND	0.0011	ND	0.0011	ND	0.0011	ND	0.0011	ND	0.0012	
Percent Moisture	Extracted:										- 1	
	Analyzed:	Jun-19-10	09:18	Jun-19-10 (	9:18	Jun-19-10 (	09:18	Jun-19-10	09:18	Jun-19-10	09:18	
	Units/RL:	%	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	
TPH By SW8015 Mod	Extracted:	Jun-18-10	15:15	Jun-18-10	5:15	Jun-18-10 l	15:15	Jun-18-10	15:15	Jun-18-10	15:15	
	Analyzed:	Jun-19-10	17:12	Jun-19-10	7:42	Jun-19-10 1	18:13	Jun-19-10	18:43	Jun-19-10	19:13	•
	Units/RL:	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 KENCO 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 Cornus Christi TX 78408	(361) 884-0371	(361) 884-9116



Project Name: Southern Union Gas Landfarm

'ork Orders: 377688,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

**Project ID:** 

Batch:

Matrix: Solid

Units: mg/kg	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes	()	[2]	[D]	/•••						
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/19/10 13:50	SURROGATE RECOVERY STUDY									
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
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:

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	Control Limits %R	Flags					
Analytes			[D]							
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	SÜ	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	<b> </b> `		[D]		
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&</sup>quot;I results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 377688,

Sample: 377688-001 / SMP

Project ID:

Lab Batch #: 811393

Matrix: Soil Batch:

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	Control Limits %R	Flags					
Analytes			{D}							
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	Control Limits %R	Flags
Analytes	•		[D]		
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-BSD / BSD

Batch:

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	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 0	06/20/10 02:09	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	,	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes				[D]			
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  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	0.0280	0.0300	93	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 377688,

Lab Batch #: 811398

Sample: 377688-003 / SMP

Project ID:

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/20/10 02:53	SU	RROGATE R	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			{ <b>D</b> }	İ	
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

Haits make

Date Analyzed: 06/20/10 03:16

SURROGATE RECOVERY STUDY

Umits: mg/kg Date Analyzed: 00/20/10 05.10						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	17	(-)	[D]			
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	SU	RROGATE R	ECOVERY :	STUDY	
BTE	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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 / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 06/20/10 05:09 SURROGATE RECOVERY STUDY						
ВТЕ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			{D}		
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	0.0297	0.0300	101	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



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	SU	RROGATE R	RECOVERY :	STUDY	
ТРН В	y SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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	Control Limits %R	Flags	
Analytes			[D]			
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	SU	RROGATE R	ECOVERY	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: 377688-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 17:12	SU	RROGATE R	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	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	SU	RROGATE R	ECOVERY	STUDY	•
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	75.0	99.7	75	70-135	
o-Terphenyl ·	42.3	49.9	85	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 377688,

Lab Batch #: 811388

Project ID:

Sample: 377688-003 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 06/19/10 18:13	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes		[ [0]	[D]	, 511						
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		SU	RROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	` .		[D]		
I-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	TPH By SW8015 Mod  Analytes	SURROGATE RECOVERY STUDY								
ТРН І		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/MS

Batch: 1

Matrix: Soil

Units: mg/kg	Units: mg/kg Date Analyzed: 06/20/10 03:36  TPH By SW8015 Mod		SURROGATE RECOVERY STUDY									
ТРН	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  TPH By SW8015 Mod  Analytes	SURROGATE RECOVERY STUDY									
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
I-Chlorooctane	130	100	130	70-135						
o-Terphenyl	69.8	50.0	140	70-135	*					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### **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

Matrix: Solid

Lab Batch ID: 811393

Sample: 566168-1-BKS

Batch #: 1

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg Blk. Spk Control BTEX by EPA 8021B Blank Spike Blank Blank Spike Blank Control Spike Dup. RPD Limits Limits Flag Sample Result Added Spike Spike Added Duplicate %R % %R %RPD [A] Result %R Result |F| [G] |B| [C]  $|\mathbf{D}|$ [E] Analytes Benzene 70-130 35 ND 0.1000 0.1080 108 0.1 0.1072 107 Toluene 104 0.1 0.1027 103 1 70-130 35 ND 0.1000 0.1035 Ethylbenzene ND 0.1000 0.1086 109 0.1 0.1078 108 1 71-129 35 m,p-Xylenes 1 70-135 35 0.2000 0.2265 113 0.2 0.2252 113 ND o-Xylene 0.1000 116 0.1 0.1141 114 71-133 35 ND 0.1155

Analyst: ASA

Lab Batch ID: 811398

Sample: 566183-1-BKS

Date Prepared: 06/19/2010

Batch #: 1

**Date Analyzed:** 06/20/2010

Matrix: Solid

Unite mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Ollits 8 8											
BTEX by EPA 8021B  Analytes	Biank 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	0.1028	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 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	·	BLAN	K/BLANK	SPIKE / E	SLANK S	PIKE DUPI	ICATE	RECOVE	LKY STUD	· X	
Anions by E300	Biank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		(B)	[C]	[D]	[E]	Result [F]	[G]				
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

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Units: mg/kg BLANK /BLANK SPIKE DUPLICATE RECOVERY STUDY									Y		
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	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

Project ID:

Date Prepared: 06/19/2010

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MAT	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\*(C-A)/BRelative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



#### Form 3 - N **MSD** Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377688

Project ID:

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #:

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

			IATRIA SI IK	E / IVIALI	KIA SEI	RE DUFLICA	IE REC	OVERI	31001		
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 #:

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

	MATRIA OF INC. POLICY ENGINE DOLLAR MEGVENT STOP										
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	Χ.
Toluene	, ND	0.1182	0.0812	69	0.1189	0.0738	62	10	70-130	35	Х
Ethylbenzene	ND	0.1182	0.0837	71	0.1189	0.0769	65	8	71-129	35	Х
m,p-Xylenes	ND	0.2363	0.1743	74	0.2377	0.1602	67	8	70-135	35	Х
o-Xylene	ND	0.1182	0.0866	73	0.1189	0.0779	66	11	71-133	35	Х

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



# 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 #:

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	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	(C)	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377688

Lab Batch #: 811435 Date Analyzed: 06/19/2010

**Project ID:** 

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 E3	00 P	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag				
Analyte			<b>[B</b> ]			ė				
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

Reportin

Reporting Units: %	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY								
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag					
Analyte		[B]								
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														_	Proje	ect N	ame	: <u>So</u>	uthe	ern	<u>Uni</u>	on (	<u>388</u>	Lar	ndfa	rm		
	Company Name	Basin Environment	tal Consulti	ng, LLC	>						<u> </u>		_			_		Proje	ct#											
	Company Address:	P.O. Box 381												_	Pro	oject	Loc	Lee	Cou	inty	, NM									
	City/State/Zip:	Lovington, NM 882	60			·										_		F	Ю#:									·		
	Telephone No:	(575)605-7210				Fax No	:	(50	5) 3	96-1	429					Rep	ort F	omi	at:	X	Stæn	daro	i	[	] TF	RRP		□ N	IPDE	s
	Sampler Signature:	لشسراه	Bu	ىدىد	<u>t                                     </u>	e-mail		Çİ	ρΓγ	ante	@t	oas	in-c	ons	ultii	ng.cor	<u>n</u> _													-
(lab use d			]	U													$\vdash$			T	LP:	Ana	elyze	For	Т	$\top$	$\Box$		┥╻	l
ORDER	#: 3 <sup>-7-1</sup>	1688							Pr	eser\	/atio	ж & nc	∮ of 0	ontal	ners	Matri	× [			TO	-+		干	X	-		25		Ĕ	Ì
LAB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sempled	Field Filtered	Total #. of Containers		9		705°н		Neg-S <sub>2</sub> O <sub>3</sub>	(Spedfy)	St Studg	NP-Non-Potable Specify Oth	TPH: TX 1005 TX 1008	Cetions (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalintly)	SAR/ESP/CEC	Metals: As Ag Be Cd Cr Pb Hg Se	Voleties Semivolatiles	BTEX 8021875030 br 8TEX 8280	RCI	N.O.R.M.	Chloridas & 3		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
0	VZ C	ell 1 G-1			6/15/10	0810		1	X							SOIL	. ],	(						x			x		$\mathbb{L}$	X
02	VZ C	ell 1 G-2			6/15/10	0820		1	X							SOIL	_ ],	(					$\perp$	x			x		$\mathbf{L}$	X
03	VZ C	ell 1 G-3			6/15/10	0830		1	X						L	SOIL	. )	(				T		х	L		x	$\Box$		X
OH	VZ C	ell 1 G-4			6/15/10	0840		1	X							SOIL	<u>J</u> ,						T	х	Γ		х	$\Box$		x
05	VZ C	ell 1 G-5			6/15/10	0850		1	X							SOIL	.	(					floor	х			x		$oxed{L}$	X
													$\perp$	$\perp$									T				$\Box$		$\Gamma$	
																												$\prod$		
																								$\mathbb{L}$						
																							$\perp$	$\mathbf{L}$						
Special in	ed by:	. Da	te T	me	Received by:										Ďa	ite I	Thr	ne	NO.				men adsp		)			Y	N	
Retinquish	Wille 191	ful 6/17	70 to T	me	Socz (C	oury								4	/// Da	2	70 Tin	U	San	npee by S	Hand	Del	itvere ient R	ed ten. 7	2		G	Y)	N· N	
SOC Relinquish	Z LOWRY ed by:	(4/1/ <sub>Dat</sub>		<i>D</i>	Received by ELC		w							6	17	to ()		ne 20	Теп	by ç	ourie o iture	? U2	In Re	'S S Ceip	DHI t:		Fedit	6 LO		



#### XENCO Laboratories

Atlanta, Boca Raton. Corpus Christi. Dalies 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: Basiy	n Env.							
Date/Time: (2		11.2	<u> </u>					-
Lab ID#:	37768	8_	<del></del>					ğ
Initials:	AL		<del></del>					`*
		S	ample Receipt Ch	eck	list			
1. Samples on ice?		^			Blue	(Water)	No	
2. Shipping container	in good condition?				Yes	No	None	
3. Custody seals intac	t on shipping conta	iner (co	poler) and tottles?		(Yes)	No	N/A	
4. Chain of Custody p	resent?			:	Yes	No		
5. Sample instructions	complete on chain	of cus	tody?		Yes	No		
6. Any missing / extra	samples?				Yes	No		
7. Chain of custody si	gned when relinquis	shed / r	eceived?		Yes	No		
8. Chain of custody ag	rees with sample la	bel(s)?			(YES)	No		
9. Container labels leg	ible and intact?				(Yes)	No		
10. Sample matrix / pr	operties agree with	chain c	of custody?		(Yes)	No		
11. Samples in proper	container / bottle?				(Yes)	No		
12. Samples property	preserved?				(Yes	No	N/A	
13. Sample container i	ntact?				( Yes	No		]
14. Sufficient sample a	amount for indicates	d test(s	)?		(Ÿes)	No		
15. All samples receive	ed within sufficient	hold tir	ne?		(Yès)	No		
16. Subcontract of sar	nple(s)?				Yes	No	(NA)	
17. VOC sample have	zero head space?		·.		(Yes)	No	N/A	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 No	<u>.                                    </u>	Cooler 5 No.	
1bs 3.6	°C lbs	℃	lbs	°C	ibs	°C	lbs	°C
		None	onformance Docu	ıme	ntation			
Contact	Солта	cted b	y:		•	Date/Time:	•	
								<del></del>
Regarding:								
							· · · · · · · · · · · · · · · · · · ·	
Corrective Action Tak	en:					·		
								:
Chack all that analy-	Cooling process	hae h	egun shortly after sam	nline	event and o	ed of tomps	rature	
Check all that apply:	condition	accept	able by NELAC 5.5.8.3.	1.a.1				
_			perature confirm out o I would like to proceed			nditions		

# **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 (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: 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

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# **Sample Cross Reference 377717**



## Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample 1d	Matrix	Date Collected Sample Depth	Lab Sample 1d
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





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

### Sample receipt non conformances and Comments:

None

### 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 Analys ummary 377717

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

ne d

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

				·	Project Manager:	Dieni Dailon, ii
	Lab Id:	377717-001	377717-002	377717-003	377717-004	
Analysis Requested	Field Id:	VZ Cell 2 G-1	VZ Cell 2 G-2	VZ Cell 2 G-3	VZ Cell 2 G-4	
Anuiysis Nequesieu	Depth:					
	Matrix:	SOIL	SOIL	SOIL	SOIL	
	Sampled:	Jun-15-10 09:00	Jun-15-10 09:10	Jun-15-10 09:20	Jun-15-10 09:30	
Anions by E300	Extracted:					
•	Analyzed:	Jun-21-10 12:53	Jun-21-10 12:53	Jun-21-10 12:53	Jun-21-10 12:53	
	Units/RL:	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	
BTEX by EPA 8021B	Extracted:	Jun-19-10 10:15	Jun-19-10 10:15	Jun-19-10 10:15	Jun-19-10 10:15	
	Analyzed:	Jun-19-10 16:27	Jun-19-10 16:49	Jun-19-10 17:12	Jun-19-10 17:34	
	Units/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	
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	
Percent Moisture	Extracted:				_	
·	Analyzed:	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	
	Units/RL:	% RL	% RL	% RL	% RL	
Percent Moisture		5.52 1.00	9.22 1.00	7.29 1.00	5.46 1.00	
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55	Jun-18-10 14:55	Jun-18-10 14:55	Jun-18-10 14:55	
	Analyzed:	Jun-21-10 21:01	Jun-21-10 21:28	Jun-21-10 21:55	Jun-21-10 22:21	
	Units/RL:	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

Breht 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
- POL 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



Project Name: Southern Union Gas Landfarm

'ork 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	SU	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes			. [D]								
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:

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	Control Limits %R	Flags					
Analytes			[D]							
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									
	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: 377717-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 16:27	SU	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
Analytes	Ì	]	[D]								
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	SU	RROGATE R	ECOVERY	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	0.0289	0.0300	96	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits' data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>\*</sup>II results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 377717,

**Project ID:** 

Lab Batch #: 811393

Sample: 377717-003 / SMP

Batch:

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	Control Limits %R	Flags					
Analytes			[D]							
I,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	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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  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:

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	Control Limits %R	Flags			
Analytes	i		[D]	l				
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  TPH By SW8015 Mod  Analytes		SURROGATE RECOVERY STUDY							
		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control- Limits %R	Flags			
1-Chlorooctane	Analytes	128	99.8	128	70-135				
o-Terphenyl		56.8	49.9	114	70-135				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 377717,

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Project ID:

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 06/21/10 18:19	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod  Analytes		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
		13		[D]					
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	Control Limits %R	Flags			
Analytes			[D]					
I-Chlorooctane	127	100	127	70-135				
o-Terphenyl	63.2	50.1	126	70-135				

Lab Batch #: 811610

Sample: 377717-001 / SMP.

Batch:

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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/21/10 21:28	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			· [D]					
1-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				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



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	Control Limits %R	Flags			
Analytes			[D]					
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	Control Limits %R	Flags			
Analytes		ļ	[D]	j				
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 Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## BS / BSD 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 REC						RECOVI	ERY STUD	Y		
BTEX by EPA 8021B	Blank	Spike	Blank	Blank	Spike	Blank	Blk. Spk	DDD	Control	Control	

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		{B}	[C]	[D]	[E]	Result [F]	[G]				
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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Chloride	· ND	10.0	10.2	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  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [Dj	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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

17



## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



"'ork 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 STUL							
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	Х		

Matrix Spike Percent Recovery [D] = 100\*(C-A)/BRelative Percent Difference [E] = 200\*(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 #:

Matrix: Soil

Date Analyzed: 06/19/2010

**Date Prepared:** 06/19/2010

Analyst: ASA

Donostino Iluita

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result  F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	Result [F]	[G]	/*	/ / /	/old D	ĺ
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 #:

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	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	. %	%R	%RPD	
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



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377717

Lab Batch #: 811582

Date Analyzed: 06/21/2010

**Project ID:** 

Date Prepared: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 D

Batch #: Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY												
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag									
Analyte		[B]												
Chloride	ND.	ND	NC	20										

Lab Batch #: 811317

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: JLG

QC- Sample ID: 377692-001 D

**Percent Moisture** 

Analyte

**Percent Moisture** 

**Analyte** 

Batch #:

Matrix: Soil

Reporting Units: %

SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
9.85	10.3	5	20	

Lab Batch #: 811318

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

· Analyst: JLG

QC- Sample ID: 377717-002 D

Batch #:

9.22

Matrix: Soil

Reporting Units: %

Percent Moisture

Percent Moisture

SAMPLE	SAMPLE	DUPLIC.	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

9.31

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

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	Company Address:	P.O. Box 381	<u> </u>															Pro	ject	Loc	Le	e Co	unty	/, NN	<b>4</b>						
	City/State/Zip:	Lovington, N	IM 88260														•		F	°O#:	:										
	Telephone No:	(575)605-721	0				Fax No	:	(505	5) 39	6-14	129			_		Repo	ort F	orm	et:	X	Sta	ndan	ď	ı		RRP		□ NI	PDE	s
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LAB # (lab use only)	FIEI	LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	22	HNO	#CI	HOW	Ne <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other ( Specify)	ter SL-S rer S-Sol	TPH: 418 1 80154 80	ΙŌ	Zy. ₹	Anions (Cl. SO4, Alkabinty)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg	Volatiles	Semivolatiles	BIEX 8021B/5030 or BTEX 8260 RCI	NO.R.M.	3 Sapris		RUSH TAT (Pre-Schedule) 24,	
91	VZ C	ell 2 G-1		<u> </u>		6/15/10	0900	Ц	_	x			$\perp$	<u></u>			SOIL		L						;	x	$\perp$	x			X
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### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi. Dallas ; Houston, Miami. Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Trile: Sample Receipt Checklist

Document No.: SYS-SRC

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

Effective Date: 6/1/2010 Page 1 o

### Preiogin / Nonconformance Report - Sample Log-In

client Basin Env.			·	
Data/Time: 6:17:10 11:20				-
Lab ID#: 377717				
Initials: AL				
Sample Receipt Chec	cklist			- :
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 tottles?	(Yes)	No	NA	
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?	(Yee)	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.	
ibs 3.6 °C lbs °C lbs	°C lbs	°c		°C
Nonconformance Docum	nentation			
Contact: Contacted by:		Date/Time:		
COMMECTED by.		Date Tulle.		
Regarding:		·		
Corrective Action Taken:				
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Final 1.000

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.

□ Client understands and would like to proceed with analysis

□ Initial and Backup Temperature confirm out of temperature conditions

# **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 (AALII), 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

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 377691**



## Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	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



Proiect ID:

Work Order Number: 377691

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-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.

annus in the Matrix Opike and Matrix Opike Dupileate.

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.



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

#### **Certificate of Analys** ummary 377691

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

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

Report Date: 23-JUN-10

					Project Manager:	Brent Barron, II	
	· Lab Id:	377691-001	377691-002	377691-003	377691-004	377691-005	
Analysis Requested	Field Id:	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	
Anatysis Requestea	Depth:	•					
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
·	Sampled:	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	•
Anions by E300	Extracted:	•					
	Analyzed:	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	
	Units/RL:	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	
BTEX by EPA 8021B	Extracted:	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	
	Analyzed:	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	
	Units/RL:	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 Laboratorics 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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Odessa Laboratory Manager

Final 1.000

Brent Barron, II

Page 5 of 18



Project Id:

## Certificate of Analysis Summary 377691

### Basin Environmental Consulting, LLC, Lovington, NM



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

Report Date: 23-JUN-10



Contact: Camille Bryant Project Location: Lea County, NM

	<u> </u>							Project Mar	ager:	Brent Barron,	II	
	Lab Id:	377691-0	01	377691-0	02	377691-0	03	377691-0	04	377691-0	05	
Analysis Requested	Field Id:	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	
Analysis Requesieu	Depth:										į	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		
	Sampled:	Jun-15-10 C	9:50	Jun-15-10 l	0:00	Jun-15-10 1	0:10	Jun-15-10 1	0:20	Jun-15-10 1	0:30	
Percent Moisture	Extracted:											
	Analyzed:	Jun-19-10 (	9:18	Jun-19-10 (	9:18	Jun-19-10 0	9:18	Jun-19-10 0	9:18	Jun-19-10 0	9:18	
	Units/RL:	%	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	
TPH By SW8015 Mod	Extracted:	Jun-18-10 1	15:15	Jun-18-10 1	5:15	Jun-18-10 1	5:15	Jun-18-10 1	5:15	Jun-18-10 l	5:15	
. ,	Analyzed:	Jun-19-10 1	19:43	Jun-19-10 2	0:13	Jun-19-10 2	20:42	Jun-19-10 2	1:12	Jun-19-10 2	1:42	
	Units/RL:	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
- **POL** 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



Project Name: Southern Union Gas Landfarm

Work Orders: 377691,

Project ID:

Lab Batch #: 811407

Sample: 566202-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 06/19/10 12	1:39 SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		, ,	[D]		
1,4-Diffuorobenzene	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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 13:01	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY	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 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 18:14	ş SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{D}		
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	SU	RROGATE R	ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0304	0.0300	101	80-120	
4-Bromofluorobenzene	0.0308	0.0300	103	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

ork Orders: 377691,

Lab Batch #: 811407

Sample: 377691-001 / SMP

Project ID:

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 19:43	SU	SURROGATE RECOVERY STUDY			
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	, , ,	,-,	[D]		
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		Control			
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Limits	Flags	
Analytes			[D]			
I,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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 20:28	SURROGATE RECOVERY STUDY  Amount True Control				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes		}	رطا ا		
!,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	SU	RROGATE R	ECOVERY	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	g/kg Date Analyzed: 06/19/10 21:12 SUR		RROGATE RI	ECOVERY S	STUDY	
BTE	K 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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 377691,

Project ID:

Lab Batch #: 811388

Sample: 566174-1-BKS / BKS

Batch: 1 Matrix: Solid

SU	STUDY			
Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
124	90.8	<b>.</b>	70-135	
58.7	49.9	118	70-135	
	Amount Found [A]	Amount True Found Amount [A] [B]	Amount   True   Recovery   %R   [D]	Found   Amount   Recovery   Limits   %R     %R

Lab Batch #: 811388

**Sample:** 566174-1-BSD / BSD

Batch:

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	Control Limits %R	Flags			
Analytes			[D]					
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 16:41	SU	RROGATE R	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 <b>SU</b>	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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	SU	RROGATE R	ECOVERY	y Control Limits %R	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Limits	Flags
1-Chlorooctane	87.9	99.5	88	70-135	
o-Terphenyl	49.3	49.8	99	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

ork Orders: 377691,

**Project ID:** 

Lab Batch #: 811388

Sample: 377691-003 / SMP

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 20:42	st st	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	13	[2]	[D]	/***	
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 21:12	SU	RROGATE R	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	SU	RROGATE RI	ECOVERY S	STUDY	
•	W8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Ana	alytes			[D]		
1-Chlorooctane		81.6	99.5	· 82	70-135	
o-Terphenyl		46.7 <sup>-</sup>	49.8	94	70-135	

Lab Batch #: 811388

Sample: 377688-001 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/20/10 03:36	SU	RROGATE R	<b>ECOVERY</b>	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	SU	RROGATE R	ECOVERY :	STUDY	
ТРН В	sy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		130	100	130	70-135	
o-Terphenyl	·	69.8	50.0	140	70-135	*

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPI	LICAȚE I	RECOVI	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		{B}	[C]	[D]	[E]	Result [F]	[G]				
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 Accoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377691

Analyst: BEV Lab Batch ID: 811388 **Date Prepared:** 06/18/2010

**Project ID:** 

Date Analyzed: 06/19/2010

Batch #: 1

Matrix: Solid

Sample: 566174-1-BKS

Units: mg/kg		BLAN	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]									
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

Date Prepared: 06/19/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377678-001 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg

Chloride

s: mg/kg	MATE	RIX / MA	TRIX SPIKE	RECOV	VERY STU	DY	L
Inorganic Anions by EPA 300	Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag	
Analytes	[A]	[B]					
	79.7	1080	1180	102	75-125		1

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

BRL - Below Reporting Limit



#### Form 3 - M **MSD** Recoveries

Project ID:

Project Name: Southern Union Gas Landfarm

Work Order #: 377691

Lab Batch ID: 811407

QC- Sample ID: 377692-001 S

Batch #:

Matrix: Soil

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

ASA Analyst:

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result  F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes	[A]	[B]		[D]	[E]	Result [F]	[G]	70	70K	76KFD					
Benzene	. ND	0.1114	0.0681	61	0.1105	0.0564	51	19	70-130	. 35	х				
Toluene	ND	0.1114	0.0743	67	0.1105	0.0609	55	20	70-130	35	Х				
Ethylbenzene	ND	0.1114	0.0721	65	0.1105	0.0581	53	22	71-129	35	х				
m,p-Xylenes	ND	0.2227	0.1545	69	0.2210	0.1224	55	23	70-135	35	х				
o-Xylene	ND	0.1114	0.0780	70	0.1105	0.0599	54	26	71-133	35	Х				

Lab Batch ID: 811388

**QC-Sample ID:** 377688-001 S

Batch #:

Matrix: Soil

Date Analyzed: 06/20/2010

Date Prepared: 06/18/2010

Analyst: BEV

etina Uniter ma/ka

Reporting Units: mg/kg		M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag										
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD											
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



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377691

Lab Batch #: 811435

Date Analyzed: 06/19/2010

Project ID:

Date Prepared: 06/19/2010

Analyst: LATCOR

QC- Sample ID: 377678-001 D

Batch #: 1 Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Analyte		[2]			
Chloride	79.7	60.3	28	20	F

Lab Batch #: 811317

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst: JLG

QC- Sample ID: 377692-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[ <b>B</b> ]			,
Percent Moisture	9.85	10.3	5	20	

# Emmonmental 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

	Calmine brys	BIIL															-1	Ojuc	t Me	re: _	30 u	E I PU	4111	31110	<u> </u>	<u>ab</u> .		II di II	<u> </u>		
	Company Name Basin Enviro	onmental Co	nsuitin	g, LLC				_								_		Pi	rojec	t #:_											
	Company Address: P.O. Box 381	1									•					_	4	Proj	ect L	oc:_	Lea	Cou	nty,	NM			<del></del>				
	City/State/Zip: Lovington, N	M 88260														_			PC	)#:_											
	Telephone No: (575)605-721	10		•		Fax No:		(50	)5) 3	96-1	429						Repor	t Fo	rmet	. [	X s	tand	dard			TRE	RP	[	] NPC	DES	;
	Sampler Signature:		B	N U	W. +	- e-mail:							in-c	ons	sulti	-	com												_		
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AB # (leb use onty)	FIELD CODE		Beginning Depth	Ending Depth	Date (	Time Sampled	Peld Filtered	Total #, o	g	§	호	જુ	HQ8	of se	Other (Specify)	DW-Drinking Water	CW - Groundwater NP-Non-Potable	¥	TPH: TX 1005 TX 1008	Brons	Anions (Cl. SO4, Altafinity)	4	Medals: As Ag tsa Cd Cr Hb Hg Se	Semitvolatiles	DTEX 80218/5030 Pr BTEX 8260	5	NO.R.M.	CINEMONS		RUSH TAT (Pre-Schedule)	Standard TAT 4 DAY
<u>ي</u> ان	VZ Cell 3 G-1		<u> </u>	<u>щ</u>	6/15/10	0950	-	_	X	Ť		╗	7	+	+	+	OIL	X	F	의	<u>₹   °</u>	1	+	+*	X	۳	$\overline{}$	x x	††	_	x X
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dalias Houston, Miami, Odessa. Philadelohia 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 Check	dist			
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		<u>.</u>
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	(NA)	
17. VOC sample have zero head space?	(fes	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	<u>.                                      </u>	Cooler 5 No.	
lbs 3.6 °C lbs °C lbs °C	lbs	°C	lbs	°င
Nonconformance Docume	ntation	•		
Contact: Contacted by:		Date/Time:_		
Regarding:				
Corrective Action Taken:				
	<del>-</del>			
Check all that apply: ☐ Cooling process has begun shortly after sampling condition acceptable by NELAC 5.5.8.3.1.a.1		ut of temper	ature	
□Initial and Backup Temperature confirm out of ten		nditions		

☐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 (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(4444), 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





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

#### Sample receipt non conformances and Comments:

None

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 Analys ummary 377692

## Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inelad:

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

<u> </u>								Froject Ma	nager:	Brent Barron	, 11	
	Lab Id:	377692-0	01	377692-0	002	377692-0	03	377692-0	04	377692-	005	
Analysis Requested	Field Id:	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	
Anaiysis Kequesieu	Depth:											
·	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL	,	
	Sampled:	Jun-15-10 l	0:50	Jun-15-10	11:00	Jun-15-10 1	1:10	Jun-15-10 1	1:20	Jun-15-10	11:30	ı
Anions by E300	Extracted:		-				_					
	Analyzed:	Jun-19-10 (	6:27	Jun-19-10	06:27	Jun-19-10 0	6:27	Jun-19-10 (	6:27	Jun-19-10	06:27	
	Ųnits/RL:	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	
BTEX by EPA 8021B	Extracted:	Jun-19-10 1	1:45	Jun-19-10	11:45	Jun-19-10 1	1:45	Jun-19-10 1	1:45	Jun-19-10	11:45	
	Analyzed:	Jun-19-10 1	4:30	Jun-19-10	4:53	Jun-19-10 1	5:15	Jun-19-10 1	5:38	Jun-19-10	16:00	
	Units/RL:	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	<del></del>
m,p-Xylenes		ND	0.0022	ND	0.0021	ND	0.0022	ND	0.0021	ND	0.0020	
o-Xylene			0.0011		0.0010		0.0011		0.0010	<u> </u>	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	
Percent Moisture	Extracted:		-									
	Analyzed:	Jun-19-10 (	9:18	Jun-19-10 (	9:18	Jun-19-10 0	9:18	Jun-19-10 (	9:18	Jun-19-10	09:18	
	Units/RL:	%	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	
TPH By SW8015 Mod	Extracted:	Jun-18-10 1	5:15	Jun-18-10	5:15	Jun-18-10 1	5:15	Jun-18-10 1	5:15	Jun-18-10	15:15	
	Analyzed:	Jun-19-10 2	2:41	Jun-19-10 2	23:10	Jun-19-10 2	3:40	Jun-20-10 (	0:09	Jun-20-10	00:39	
	Units/RL:	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 KENCO 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



Project Name: Southern Union Gas Landfarm

/ork Orders: 377692,

Lab Batch #: 811407

**Sample:** 566202-1-BKS / BKS

Project ID:

Batch:

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	Control Limits %R	Flags		
Analytes		[-]	[D]				
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:

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	Control Limits %R	Flags	
Analytes	•	'-'	[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:08	SU	RROGATE R	ECOVERY	STUDY	-
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I,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	SU	RROGATE R	ECOVERY	STUDY	,
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 377692,

Project ID:

0.0300

Lab Batch #: 811407

Sample: 377692-003 / SMP

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 06/19/10 15:15	5 SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0283	0.0300	94	80-120		

0.0294

4-Bromofluorobenzene Lab Batch #: 811407

Sample: 377692-004 / SMP

Batch:

Matrix: Soil

98

80-120

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	Control Limits %R	Flags		
Analytes			[D]				
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	Control Limits %R	Flags		
Analytes			[D]				
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 / MS

Batch:

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	Control Limits %R	Flags	
Analytes		ĺ	[D]			
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 1	8:36 SU	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
1,4-Difluorobenzene	0.0304	0.0300	101	80-120				
4-Bromofluorobenzene	0.0308	0.0300	103	80-120				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

/ork Orders: 377692,

Lab Batch #: 811388

**Sample:** 566174-1-BKS/BKS

Project ID:

Matrix: Solid Batch:

Units: mg/kg	Date Analyzed: 06/19/10 15:38	SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes	11-1	(2)	[D]			
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						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R  D	Control Limits %R	Flags		
1-Chlorooctane	Analytes	110	99.7	110	70-135			
o-Terphenyl		52.5	49.9	105	70-135			

Lab Batch #: 811388

Sample: 566174-1-BLK / BLK

Batch:

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	SURROGATE RECOVERY STUDY					
	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	ialy tes	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	
I-Chlorooctane	91.6	99.8	92	70-135		
o-Terphenyl .	51.0	49.9	102	70-135		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 377692,

**Project ID:** 

Lab Batch #: 811388

Sample: 377692-003 / SMP

Matrix: Soil Batch:

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	Control Limits %R	Flags	
Analytes			[D]		1	
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	Control Limits %R	Flags	
Analytes			[D]		<u> </u>	
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/20/10 00:39	SU	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
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:

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	7 Control Limits %R	Flags	
Analytes			[D]			
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:

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	Control Limits %R	Flags	
Analytes		İ	[D]			
1-Chlorooctane	130	100	130	70-135		
o-Terphenyl	69.8	50.0	140	70-135	*	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## BS / BSL kecoveries



Project Name: Southern Union Gas Landfarm

95

101

0.1

0.2

0.0895

0.1930

0.0957

Work Order #: 377692

Analyst: ASA

Date Prepared: 06/19/2010

Project ID:

Date Analyzed: 06/19/2010

 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]						
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			

0.0948

0.2028

0.1025

Analyst: LATCOR

Date Prepared: 06/19/2010

0.1000

0.2000

0.1000

Date Analyzed: 06/19/2010

6

5

90

, 97

71-129

70-135

71-133

35

35

35

Lab Batch ID: 811435

Ethylbenzene

m,p-Xylenes

o-Xylene

Sample: 811435-1-BKS

ND

ND

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Anions by E300 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	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

Matrix: Solid

Lab Batch ID: 811388

Sample: 566174-1-BKS

Batch #: 1

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Btank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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	



## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



rk Order #: 377692

Lab Batch #: 811435

Project ID:

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

Date Prepared: 06/19/2010 QC- Sample ID: 377678-001 S

Analyst: LATCOR

Batch #:

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\*(C-A)/BRelative Percent Difference [E] = 200\*(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 #:

Matrix: Soil

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

**Date Prepared:** 06/19/2010

Reporting Units: mg/kg

Analyst:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Troporting Chitat manag		MATRIA SPIRE / MATRIA SPIRE DUFLICATE RECOVERT STUDI														
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	х					
Toluene	ND	0.1114	0.0743	67	0.1105	0.0609	55	20	70-130	35	Х					
Ethylbenzene	· ND	0.1114	0.0721	65	0.1105	0.0581	53	22	71-129	35	х					
m,p-Xylenes	ND	0.2227	0.1545	69	0.2210	0.1224	55	23	70-135	35	х					
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 #:

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	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	ļ ļ
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

17



## **Sample Duplicate Recovery**



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 D etina linite: ma/ka

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Anions by E300	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag								
Analyte		[B]	•										
Chloride	79.7	60.3	28	20	F								

Lab Batch #: 811317

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst:JLG

QC- Sample ID: 377692-001 D

Percent Moisture

**Analyte** 

Batch #:

9.85

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

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 16 of 1

# **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														_	Pro	yject	Nan	10: <u>S</u>	out	hen	u Ur	nio	n G	as l	_and	Harr	<u>n</u>		
	Company Name	Basin Environmental Co	nsultin	g, LLC												_		Pro	oject	<b>#</b> :_											
	Company Address:	P.O. Box 381				<del>:</del> -										_	P	ro <del>je</del>	ct Le	ж: <u>L</u>	ea C	ouni	ty, N	M					,		
	City/State/Zip:	Lovington, NM 88260														_			PO	<b>#</b> :											
	Telephone No:	(575)605-7210		_		Fax No:	<u>.</u>	(50:	5) 39	<b>16-1</b> 4	129					_ Re	port	Fon	mat:	×	Su	anda	and			TRE	RP	[	] NP	'DES	3
	Sampler Signature:	amulei	بدلا	لبهر	wt	e-mail:		cjb	гуг	int(	<u>@b</u>	asi	n-c	ons	ultii	ng.co	<u>om</u>														_
(lab use o	only)	17692		0				r	P= 4	400	atta.		05.5	a mt of	2000	T Va	) after				TCLP		nalyz		X	1 1		स्र	T	1, 72 hm	
LAB # (lab use only)		D COBE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Fittered	Total #. of Containers			Ξ.			ontai None	(A)	Water St.—Studg	pedfy Oth	S)	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K) Anions (Ct. SOA, Albalinin)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volaties	Semivolatiles	ETEX 80218/503) or BTEX 8260	RCI		Jana 1		RUSH TAT (Pre-Schedule) 24, 45,	Standard TAT 4 DAY
006	VZ C	ell 4 G-1			6/15/10	1050	_	-	x							SO		X			Ĺ				X			x			X
01	VZ C	ell 4 G-2			6/15/10	1100		1	x							so	IL_	X							X			x			X
03	VZ C	ell 4 G-3			6/15/10	1110		1	X				$\prod$	$\prod$	П	so	IL	x	T	T					X	П		x		$\Box$	X
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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 Env.				
Date/Time: 6:17:10 11:20				•
Lab 10#: 377692				
Initials: AL				
Sample Receipt Check	list			
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 nottles?	(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	(NA)	
17. VOC sample have zero head space?	(fes)	No	NA	
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	°င
Nonconformance Docume	ntation			
Contact:Contacted by:		Date/Time:_		
Regarding:		<del></del>		
Corrective Action Taken:				
Check all that apply:  Cooling process has begun shortly after sampling condition acceptable by NELAC 5.5.8.3.1.8.1 initial and Backup Temperature confirm out of tem	nperature cor		ature	

# **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 (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: 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

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# **Sample Cross Reference 377725**



## Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample IdMatrixDate CollectedSample DepthLab Sample IdVZ Cell 5 G-1SJun-15-10 11:50377725-001





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

#### 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 Analys

## **Jummary 377725**

## Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

nelad:

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

					Project Manager:	Brent Barron, II	
	Lab Id:	377725-001					
Analysis Requested	Field Id:	VZ Cell 5 G-1					·
Anatysis Kequestea	Depth:	`					
	Matrix:	SOIL					
	Sampled:	Jun-15-10 11:50					
Anions by E300	Extracted:						
· ·	Analyzed:	. Jun-21-10 12:53		,			
	Units/RL:	mg/kg RL					
Chloride	1	ND 4.50					
BTEX by EPA 8021B	Extracted:	Jun-19-10 10:15					
	Analyzed:	Jun-19-10 23:09					
	Units/RL:	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				,	
Percent Moisture	Extracted:			•			
	Analyzed:	Jun-19-10 09:18				•	•
	Units/RL:	% RL					
Percent Moisture		6.61 1.00					
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55					
	Analyzed:	Jun-22-10 09:34					
	Units/RL:	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.

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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
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	(214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800



Project Name: Southern Union Gas Landfarm

/ork Orders: 377725,

Project ID:

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/19/10 13:28	SURROGATE RECOVERY STUDY							
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]					
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  BTEX by EPA 8021B  Analytes	SURROGATE RECOVERY STUDY							
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:57	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	<u> </u>

Lab Batch #: 811393

Sample: 377719-001 S/MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 19:0	SU SU	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes			[D]							
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				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 377725,

Project ID:

Lab Batch #: 811393

Sample: 377725-001 / SMP

Matrix: Soil Batch:

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	Control Limits %R	Flags			
Analytes		·	[D]					
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/21/10 17:52  TPH By SW8015 Mod  Analytes	SU	SURROGATE RECOVERY STUDY							
·	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
	120	00.0		70 125					
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 SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes	121	00.7	<b>_</b>	70.135	
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								
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount {B}	Recovery %R [D]	Control Limits %R	Flags				
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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	215	99.8	215	70-135	. *				
o-Terphenyl	104	49.9	208	70-135	*				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	[B]	Result [C]	%R [D]	[E]	Duplicate Result [F]	%Ř [G]	%	%R	%RPD	
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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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



Project Name: Southern Union Gas Landfarm

Work Orders: 377725,

Project ID:

Lab Batch #: 811610

Sample: 377715-001 S / MS

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	Control Limits %R	Flags								
Analytes			[D]										
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	Control Limits %R	Flags							
Analytes			[ <b>D</b> ]									
1-Chlorooctane	116	100	116	70-135								
o-Terphenyl	53.7	50.1	107	70-135								

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## BS / BSL \*\* accoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377725

Analyst: BEV

Lab Batch ID: 811610

**Analytes** 

Sample: 566324-1-BKS

Date Prepared: 06/18/2010

Batch #: 1

**Project ID:** 

Date Analyzed: 06/21/2010

Matrix: Solid

Units: mg/kg

C6-C12 Gasoline Range Hydrocarbons

C12-C28 Diesel Range Hydrocarbons

TPH By SW8015 Mod

		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY														
Blank Sample Result [A]		nk Spike Blank Result Added Spike		Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag					
_	ND	998	1200	120	997	1220	122	2	70-135	35						
	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 QC- Sample ID: 377693-005 S Date Prepared: 06/21/2010

**Project ID:** 

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATE	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	Х									

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

**BRL** - Below Reporting Limit



Form 3 - M **MSD Recoveries** 

Project Name: Southern Union Gas Landfarm



Work Order #: 377725

Lab Batch ID: 811393

Date Analyzed: 06/19/2010

QC- Sample ID: 377719-001 S

Batch #:

Matrix: Soil

Project ID:

**Date Prepared:** 06/19/2010

Analyst: ASA

Paparting Unite: mg/kg

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY														
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Analytes	[A]	[B]		[D]	[E]		[ <b>G</b> ]									
Benzene	ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35						
Toluene	ŅD	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

Date Analyzed: 06/22/2010

QC- Sample ID: 377715-001 S

Date Prepared: 06/18/2010

Batch #:

Matrix: Soil

Analyst: BEV

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	•	RPD	Control Limits	Control Limits	Flag			
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD				
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



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377725

Lab Batch #: 811582

Project ID:

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

Date Prepared: 06/21/2010

Analyst:LATCOR

QC- Sample ID: 377693-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE	DUPLIC	CATE REC	OVERY
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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 SAMPLE DUPLICATE RECOVER											
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag								
Analyte		(12)											
Percent Moisture	9.22	9.31	1	20									

# El. .ronmental 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

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	Company Name	Basin Environmental (	Consultin	g, LLC	<u> </u>											_		P	roje	ct #:										
	Company Address: 1	P.O. Box 381		<u> </u>												_		Proj	ect l	.oc:	Lea	Cou	nty, i	NM_						
	City/State/Zip:	ovington, NM 88260														_			P	0#:							,			
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LAB # (leb use only)		CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtared	Total #. of Containers	loa				NBOH		(Specify)	StStude	GW - Groundwater S-solifoit	12	TPH: TX 1005 TX 1008	Cattoris (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	Malake As An Ba Coff on the co	Volatiles	Semivoletites	TEX 80218/5030 Jr BTEX 8280	PCI	MORIN.		RUSH TAT (Pro-School to 20 20 70	Standard TAT 4 DAY
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#### XENCO Laboratories

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

Document No.: SYS-SRC

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

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

Document Title: Sample Receipt Checklist

## Prelogin / Nonconformance Report - Sample Log-In

Client: P	basin	Env.							
Date/Time:	9.	17.10	11.7	Ø .					-
Lab ID #:		37	725					• *	-
Initials:		AL							
			S	ample Receipt C	heck	list			
1. Samples o	n ice?					Blue	Water	No	
2. Shipping o	ontainer in	good condit	ion?			(Yes)	No	None	
				ooler) and bottles?		(Yes)	No	NA	
4. Chain of C						Yes	No		
5. Sample inc	structions c	omplete on	chain of cus	tody?		Yes	No_		
6. Any missi	ng / extra sa	mples?				Yes	(No)		<del></del>
7. Chain of c	ustody sign	ed when refi	inquished / r	eceived?		(Yes)	No		į
8. Chain of c	ustody agre	es with sam	ple label(s)?	·		(Yes)	No		
9. Container	labels legib	le and intact	1?			Yes	_No		
10. Sample n	natrix / prop	erties agree	with chain o	of custody?		(Yeg)	No		
11. Samples	in proper co	ontainer / bo	ttle?			(Yes)	No		
12. Samples	property pro	eserved?				Yes	No	N/A	
13. Sample c	ontainer int	act?				(Yes	No		
14. Sufficien	t sample am	ount for ind	icated test(s	3)?		(Yes)	No_		
15. All samp	les received	within suffi	cient hold ti	me?		(Yes)	No		
16. Subcontr	act of samp	le(s)?				Yes	No	(N/A)	
17. VOC sam	ple have ze	ro head spa	ce?			(Yes )	No	N/A	
18. Cooler 1	No.	Cooler 2 No	)	Gooler 3 No.		Cooler 4 No	) <u>.                                    </u>	Cooler 5 No.	
lbs	3.600	lbs	°C	lbs	°c	lbs	°(	lbs	°C
			None	conformance Doc	ume	ntation			
Contact:			Contacted by	y:	<del></del>		Date/Time:_		
Regarding:						•			
Corrective A	ction Taken	<u> </u>							
•	<u></u>	<del></del>							
Check all th	at apply:			egun shortly after sar			out of tempe	ıstnie	
	- 5			perature confirm out			nditions		

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)

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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

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# **Sample Cross Reference 377718**



# Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	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





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

#### 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-Chloroctane recovered above QC limits. Matrix interferences is suspected;

QC data not confirmed by re-analysis Samples affected are: 377715-001 S.



## Certificate of Analys ummary 377718

#### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inela:

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

					Project Wanager:	Dicht Darron, 11	
· · ·	Lab Id:	377718-001	377718-002				
Analysis Basysstad	Field Id:	VZ Cell 6 G-1	VZ Cell 6 G-2				
Analysis Requested	Depth:		•				
	Matrix:	SOIL	SOIL				
	. Sampled:	Jun-15-10 12:10	Jun-15-10 12:20				
Anions by E300			141111111111111111111111111111111111111				
Amons by E300	Extracted:						
	Analyzed:	Jun-21-10 12:53	Jun-21-10 12:53		•		
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		ND 4.48	5.61 4.60				
BTEX by EPA 8021B	Extracted:	Jun-19-10 10:15	Jun-19-10 10:15				
	Analyzed:	Jun-19-10 17:56	Jun-19-10 18:19				
	Units/RL:	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				
Percent Moisture	Extracted:	•					
	Analyzed:	Jun-19-10 09:18	Jun-19-10 09:18		•		
	Units/RL:	% RL	% RL				
Percent Moisture		6.29 1.00	8.63 1.00				
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55	Jun-18-10 14:55				
	Analyzed:	Jun-21-10 22:48	Jun-21-10 23:15	~-			
	Units/RL:	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
- **POL** 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



Project Name: Southern Union Gas Landfarm

ork Orders: 377718,

Project ID:

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed:	06/19/10 13:28	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		<b>1</b> 3		[D]		
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/19/10 13:50	SURROGATE RECOVERY STUDY					
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[ <b>D</b> ]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:57	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	, SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed:	06/19/10 18:19 <b>SI</b>	URROGATE R	ECOVERY	STUDY	. <b>-</b>
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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&</sup>quot;Il results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 377718,

Project ID:

Lab Batch #: 811393

Sample: 377719-001 S/MS

Matrix: Soil Batch:

Units: mg/kg Date Analyzed: 06/19/10 19		SU	RROGATE R	ECOVERY :	STUDY	
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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	<b>Analyzed:</b> 06/19/10 19:26	SU	RROGATE R	ECOVERY S	STUDY	
BTEX by EPA	A 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analyte	s			[D]		!
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	<b>Date Analyzed:</b> 06/21/10 17:52	SU	RROGATE R	ECOVERY :	STUDY	
	SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/21/10 18:46  TPH By SW8015 Mod		SURROGATE RECOVERY STUDY								
		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[D]						
1-Chlorooctane		127	100	127	70-135					
o-Terphenyl		63.2	50.1	126	70-135					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

/ork Orders: 377718,

Lab Batch #: 811610

Sample: 377718-001 / SMP

Project ID:

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/21/10 22:48	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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

Date Analyzed: 06/21/10 23:15

SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 00/21/10 23:15	SORROGATE RECOVERT STOP								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
1-Chlorooctane	94.5	101	94	70-135					
o-Terphenyl	46.0	50.3	91	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							
ТРН	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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes	<u> </u>		{D}						
1-Chlorooctane	116	100	116	70-135					
o-Terphenyl	53.7	50.1	107	70-135					

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]						
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

Lab Batch ID: 811582

Sample: 811582-1-BKS

**Date Prepared:** 06/21/2010

Batch #: 1

Date Analyzed: 06/21/2010

Matrix: Solid

Un	nits: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
	Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analy	ytes		[B)	[C]	[D]	[E]	Result [F]	[G]				]
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

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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 Analytes	Biank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	Blank Spike Duplicate Result [F]	Bik. 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 #: 377718

Lab Batch #: 811582

**Date Analyzed:** 06/21/2010 **QC- Sample ID:** 377693-005 S

Project ID:

Date Prepared: 06/21/2010

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	Х			

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

**BRL** - Below Reporting Limit



#### Form 3 - M **MSD** Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377718

Project ID:

Lab Batch ID: 811393 Date Analyzed: 06/19/2010 QC- Sample ID: 377719-001 S Date Prepared: 06/19/2010

Batch #:

Analyst: ASA

Reporting Units: mg/kg

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 #:

Matrix: Soil

Matrix: Soil

**Date Analyzed:** 06/22/2010

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

Analyst: BEV

nortina Unites malka

Reporting Units: mg/kg	1 .	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod Analytes	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag		
	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD			
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



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377718

Lab Batch #: 811582

**Project ID:** 

Date Analyzed: 06/21/2010

Date Prepared: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg		SAMPLE / SAMPLE DUPLICATE RECOVERY								
Anions by E3	00	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag				
Analyte			[B]							
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 #:

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	9.22	9.31	1	20	

#### 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		<u>-</u>												_		Pro	ec	1 Na	me	<u>Sc</u>	utl	nen	n U	nio	n Gz	as I	Land	lfarı	m		
	Company Name	Basin Environmental (	Consulti	ıg, LLC	<u> </u>											_			Pi	rojec	:t #:												
	Company Address:	P.O. Box 381														_		F	roje	ect l	.oc:	Le	a Co	ount	ty, N	M_							
	City/State/Zip:	Lovington, NM 88260										_								P	O #:												
	Telephone No:	1575)605-7210	72,	-	. 4	_ Fax No			05) 3							<del>-</del>			Fo	rmai	t:	X	Sta	inda	ird			TRI	RP.	[	] NF	PDE:	s
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AB # (lab use ordy)		LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		HWO,		H <sub>2</sub> SO <sub>4</sub>		CO. CO. CO. CO. CO. CO. CO. CO. CO. CO.	Office (Specify)	ther Ci. Children	CW - Groundwater S-solisor	on-Potable Specify Oth	TPH: 418.1 (8015A) 8015B	TPH: TX 1005 TX 1006	Cettons (Ca, Mg, Na, K)	Anions (Cl. SO4, Altralinity)	SAR/ESP/CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivotatiles	BTEX 80218/5038 & BTEX 8260	žc.		००० र दशमधा		RUSH TAT (Pre-Bohedule) 24, 48,	Г
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#### XENCO Laboratories

Atlanta, Boce Raton, Corpus Christi. Dalies Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Trie: 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	<u> </u>		•		- 1
Lab 10#: 37718					ং
Initials: AL					
Sa	imple Receipt Che	ecklist			
1. Samples on ice?		Blue	Water	No	
2. Shipping container in good condition?		Yes	No	None	
3. Custody seals intact on shipping container (co	oler) and lottles?	(Yes)	No	N/A	
4. Chain of Custody present?		Yes	No		
5. Sample instructions complete on chain of cust	ody?	Yes	No		
6. Any missing / extra samples?		Yeş	No		
7. Chain of custody signed when relinquished / re	ceived?	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)	? .	(Ŷes)	No		
15. All samples received within sufficient hold tim	re?	(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	ibs	°C lbs	°C	lbs	°c
Nonce	onformance Docu	mentation			
Contact: Contacted by	:		Date/Time:_		
Regarding:			<del>-,</del> _		
Corrective Action Taken:					
				,	
Check all that apply:  Cooling process has be condition accepta Initial and Backup Temp	ble by NELAC 5.5.8.3.1	.a.1.		rature	

☐ 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 (AALII), 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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Houston - Dallas - San Antonio - Austin - Tampa - Miami - Atlanta - Corpus Christi - Latin America



# **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





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.



Benzene

# Certificate of Analys ummary 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

	. <u> </u>	·		Project Manager:	Brent Barron, II	
	Lab Id:	377724-001				
Analysis Requested	Field Id:	VZ Cell 7 G-1				
Analysis Requesieu	Depth:					
	Matrix:	SOIL				
	Sampled:	Jun-15-10 12:30				
Anions by E300	Extracted:					
	Analyzed:	Jun-21-10 12:53				
	Units/RL:	mg/kg RL				
hloride		5.27 4.40				
BTEX by EPA 8021B	Extracted	lun-19-10 10:15				

	ND 0.0021					
	ND 0.0010					
	ND 0.0021					
	ND 0.0010					
	ND 0.0010					
	ND 0.0010					
Extracted:						
Analyzed:	Jun-19-10 09:18					
Units/RL:	% RL					
	4.60 1.00					
Extracted:	Jun-18-10 14:55					
Analyzed:	Jun-22-10 09:07					
Units/RL:	mg/kg RL					
	ND 15.7					
	ND 15.7				·	
	ND 15.7		·			
	ND 15.7	·		·		
	Analyzed: Units/RL:  Extracted: Analyzed:	ND 0.0010   ND 0.0021   ND 0.0010   ND 0.0010   ND 0.0010   Extracted:   Analyzed:   Jun-19-10 09:18   Units/RL:   % RL   4.60   1.00   Extracted:   Jun-18-10 14:55   Analyzed:   Jun-22-10 09:07   Units/RL:   mg/kg RL   ND 15.7   ND 15.7	ND 0.0010     ND 0.0021     ND 0.0010     ND 0.0010     ND 0.0010     ND 0.0010     Extracted:	ND 0.0010   ND 0.0021   ND 0.0010   ND 0	ND 0.0010   ND 0.0021   ND 0.0010   ND 0	ND 0.0010   ND 0.0021   ND 0.0010   ND 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

Analyzed:

Units/RL:

Jun-19-10 22:47

ND 0.0010

mg/kg

Breht 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 MOL and above the SOL.
- 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



Project Name: Southern Union Gas Landfarm

ork Orders: 377724,

**Project ID:** 

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 13:28	SU	IRROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags .
Analytes	, ,	, , ,	[D]		
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	SÜ	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:57	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags <sup>*</sup>
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg	. SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I,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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 19:26	SU	RROGATE R	ECOVERY	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 377724,

Project ID:

Lab Batch #: 811393

Sample: 377724-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 22:47	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/21/10 17:52	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/21/10 18:19	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		1	[D]		
1-Chlorooctane		127	100	127	70-135	
o-Terphenyl		63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377724-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 09:07	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	99.8	101	70-135	
o-Terphenyl	48.4	49.9	97	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork 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	SU	RROGATE R	ECOVERY S	STUDY	
TPH By S	W8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Ana	llytes			[D]		
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				
1-Chlorooctane	116	100	1,16	70-135					
o-Terphenyl	53.7	50.1	107	70-135					

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>^11</sup> 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Coutrol Limits %RPD	Flag
Analytes		[B]	{C]	[D]	[E]	Result [F]	[G]				{
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

**Lab Batch ID:** 811582

Sample: 811582-1-BKS

**Date Prepared:** 06/21/2010

Batch #: 1

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

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg Blk. Spk Anions by E300 Blank Spike Blank Blank Spike Blank Control Control Spike Spike Dup. RPD Limits Limits Flag Sample Result Added Spike Added %R Duplicate %R %R %RPD [A] Result % [B] [C] [D][E] Result [F] [G] **Analytes** Chloride 104 2 75-125 ND 10.0 10.2 102 10 10.4 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 Accoveries



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  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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 #: 377724

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	Х			

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

BRL - Below Reporting Limit



#### **Form 3 - M**

## **MSD Recoveries**



Project Name: Southern Union Gas Landfarm

Work Order #: 377724

QC- Sample ID: 377719-001 S

Batch #:

Project ID:

Lab Batch ID: 811393 **Date Analyzed:** 06/19/2010

Matrix: Soil

**Date Prepared:** 06/19/2010

Analyst: ASA

Donostina Haitas maller

Reporting Units: mg/kg		M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY:	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

ND

1080

1080

Batch #:

Matrix: Soil

113

90

17

70-135

70-135

35

Date Analyzed: 06/22/2010

C6-C12 Gasoline Range Hydrocarbons

C12-C28 Diesel Range Hydrocarbons

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

135

110

Analyst: BEV

1090

1090

1230

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY **Parent** Spiked Sample Spiked Duplicate Spiked Control Control TPH By SW8015 Mod Sample Result Sample Spiked Sample RPD Spike Spike Dup. Limits Limits Flag Result Added [C] %R Added Result [F] %R % %R %RPD Analytes [A][B] [D][G][E]

1460

1190

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



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377724

Lab Batch #: 811582

**Project ID:** 

Date Analyzed: 06/21/2010

Date Prepared: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY							
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag				
Analyte		[B]							
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 SAMPLE DUPLICATE RECOVERY									
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag						
Analyte	,	[B]									
Percent Moisture	9.22	9.31	ì	20							

Page 15 of 16

# Ei. ...onmental 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	<u> </u>			<del></del>											_	P	rojec	≭ Na	me:	So	uth	ern	Uni	on	Gas	La	ndfa	RUU		
	Company Name	Basin Environ	mental Co	nsultin	g, LLC	<u> </u>											_		Ρ	roje	ct #:											
•	Company Address: P.O. Box 381										*****	Project Loc: Lea County, NM																				
	City/State/Zip:	Lovington, NM	88260														_			P	0#:											
	Telephone No:	(575)605-7210					Fax No:	:	<u>(50</u>	5) 3	96-1	429					_	Repo	t Fo	ma	t:	X	Star	ıdan	d	ſ	<b>Π</b> τι	RRP			NPDE	S
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AB # (lab une only)	FIEL	D CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	8	HNG	ᅙ	Ŏ,	HOR V	None	Other (Specify)	OW-Drinking Water	CW - Groundwater NP-Non-Potable S	TPH: 418.1 (8015M) 801	TPH: TX 1005 TX 1006	adjours	Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Be Cd Cr Pb Hg	Volatiles Semivalefiles	RIEX RO218/4010~ OTEV 8200	P	N.O.R.M.	4		曼	Standard TAT 4 DAY
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#### XENCO Laboratories

Atlanta, Boca Ration, Corpus Christi, Dallas Houston, Miami, Odessa, Philiadelphia

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 B	asin	Env	<u> </u>						
Date/Time:	6	17.10	11.7	0		•			-
Lab ID#:		377	724						
initials:		AL		····					
			S	ample Red	eipt Check	list			
1. Samples or	n ice?					Blue	Water	No	
2. Shipping c	ontainer in	good cond	tion?			(Yes)	No	None	
3. Custody se	als intact	on shipping	container (co	poler) and ico	ttles?	(Yes)	No	N/A	
4. Chain of Cu	ustody pre	sent?				Yes	No		
5. Sample ins	tructions o	omplete on	chain of cus	tody?		Yes	No		
6. Any missin	ig / extra s	amples?			·	Yes	No		
7. Chain of cu	ıstody sigr	ned when re	linquished / r	eceived?		(Yes)	No		
8. Chain of cu	ıstody agn	es with san	nple label(s)?	?		(Yes)	No		
9. Container l	labels legil	ele and intac	:1?			Yes	No		
10. Sample matrix / properties agree with chain of custody?							No		
11. Samples i	in proper c	ontainer / be	ottie?			Yes	No		
12. Samples (	property p	eserved?				(Yes)	No	N/A	
13. Sample co	ontainer in	tact?		·		(Yes	No		
14. Sufficient	sample an	nount for inc	licated test(s	;)?		(Ÿes)	No		
15. All sampk	es receive	within suff	icient hold ti	me?		(Yes)	No		
16. Subcontra	act of sam	ple(s)?				Yes No		(N/A)	
17. VOC sam	pie have ze	ro nead spa	ice?			(Yes	No	N/A	
18. Cooler 1 N	No.	Cooler 2 N	0	Cooler 3 No.		Cooler 4 No	).	Cooler 5 No.	
lbs	3.60	ibs	<u>°</u> ℃	<u> </u>	ibs °C	lbs	°c	ibs	· °c
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Check all tha	it apply:				after sampling		out of temper	rature	

☐ Client understands and would like to proceed with analysis

☐ Initial and Backup Temperature confirm out of temperature conditions

# **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 (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(4444), 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, Il

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 377720**



# Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected Sample	Depth Lab Sample Id
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





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 Analys Summary 377720

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm



Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

C6-C12 Gasoline Range Hydrocarbons

C12-C28 Diesel Range Hydrocarbons

C28-C35 Oil Range Hydrocarbons

Total TPH

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

Report Date: 23-JUN-10

				Proje	ect Manager:	Brent Barron, II	
	Lab Id:	377720-001	377720-002				
Analysis Requested	Field Id:	VZ Cell 8 G-1	VZ Cell 8 G-2				w p
Analysis Requestea	Depth:			,			
•	Matrix:	· SOIL	SOIL				
	Sampled:	Jun-15-10 12:50	Jun-15-10 13:00				
Anions by E300	Extracted:				·	· · · · · · · · · · · · · · · · · · ·	
	Analyzed:	Jun-21-10 12:53	Jun-21-10 12:53				•
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		49.9 4.35	33.4 4.45				
BTEX by EPA 8021B	Extracted:	Jun-19-10 10:15	Jun-19-10 10:15				
	Analyzed:	Jun-19-10 20:56	Jun-19-10 21:18				
	Units/RL:	mg/kg RL	mg/kg RL			•	,
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				
Percent Moisture	Extracted:						
	Analyzed:	Jun-19-10 09:18	Jun-19-10 09:18				
	Units/RL:	% RL	% RL				
Percent Moisture		3.51 1.00	5.56 1.00				
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55	Jun-18-10 14:55				

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

Jun-22-10 01:32

ND

ND

ND

ND

RL

15.8

15.8

15.8

15.8

mg/kg

Jun-22-10 01:04

ND

ND

ND

mg/kg

RL

15.6

15.6

15.6

15.6

Analyzed: Units/RL:



### 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



Project Name: Southern Union Gas Landfarm

'ork Orders: 377720,

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

**Project ID:** 

Matrix: Solid Batch:

Units: mg/kg	Date Analyzed: 06/19/10 13:28	SURROGATE RECOVERY STUDY					
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes	13	'-'	[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 13:50	SÜ	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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:

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	Control Limits %R	Flags
Analytes	·		[D]		
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	STUDY	*			
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I,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				
втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	· Flags
	Analytes			[D]		
1,4-Difluorøbenzene		0.0304	0.0300	101	80-120	
4-Bromofluorobenzene		0.0311	0.0300	104	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



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	St	SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 21:18	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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					
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
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	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes		1	[D]			
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:

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	Control Limits %R	Flags	
Analytes		Ì	[D]	<u> </u>		
1-Chlorooctane	127	100	127	70-135		
o-Terphenyl	63.2	50.1	126	70-135		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

ork 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					
ТРН	By SW8015 Mod	Amount Found {A}	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes	11-43	12)	[D]			
1-Chlorooctane	,	107	100	107	70-135		
o-Terphenyl		51.0	50.1	102	70-135		

Lab Batch #: 811610

Sample: 377720-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/22/10 01:32	SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes		]	[D]			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 10:28	SU	RROGATE R	ECOVERY	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	SU	RROGATE R	ECOVERY	STUDY	
	sy 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 Recovery [D] = 100 \* A / B

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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

Date Analyzed: 06/19/2010

**Project ID:** 

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	Biank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag					
Analytes		(B)	[C]	[D]	(E)	Result [F]	[G]									
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

Lab Batch ID: 811582

Chloride

Sample: 811582-1-BKS

ND

**Date Prepared:** 06/21/2010

Batch #: 1

10.0

Date Analyzed: 06/21/2010

Matrix: Solid

75-125

20

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg Anions by E300 Blank Spike Blank Blank Blank Blk. Spk Control Control Spike Flag Spike Spike Dup. RPD Limits Limits Sample Result Added Spike Added Result %R Duplicate %R % %R %RPD [A]Result |F| [B] [C] [D][E] [G]**Analytes** 

102

10

10.4

10.2

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 104







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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Biank 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	$\vdash$	
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

**QC- Sample ID:** 377693-005 S

. . . . . . . . . . . . .

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

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	х							

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

BRL - Below Reporting Limit



#### **Form 3 - M MSD** Recoveries

Project Name: Southern Union Gas Landfarm

Work Order #: 377720

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #:

Matrix: Soil

Project ID:

**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	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike	Duplicate Spiked Sample	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes	[A]	[B]	[C]	%K [D]	Added [E]	Result [F]	(G)	70	%K	%KPD					
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 #:

Matrix: Soil

**Date Analyzed:** 06/22/2010

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

Analyst: BEV

Departing Units: mg/kg

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag				
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	-%R [G]	%	%R	%RPD					
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



## Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377720

Lab Batch #: 811582

**Project ID:** 

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

**Date Prepared:** 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 D

Anions by E300

**Analyte** 

Batch #:

Matrix: Soil

Reporting Units: mg/kg

_	SAMPLE / SAMPLE DUPLICATE RECOVERY										
	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag						
	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 #:

Matrix: Soil

Reporting Units: %

Chloride

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture  Analyte	Parent Sample Result [A]		RPD	Control Limits %RPD	Flag
Percent Moisture	9.22	9.31	1	20	

	Project Manager: Camille Bryan	nt														_		Pı	ojed	t Na	me:	So	uth	ern	Uni	lon	Gas	: La	ndfa	rm			_
	Company Name Basin Environ	mental Cons	ulting	g, LLC												· —			P	roje	<b>:#</b>												
	Company Address: P.O. Box 381	<u> </u>																	Proj	ect L	.oc:	Lea	Co	unty	NM	ı							
	City/State/Zip: Lovington, NN	1 88260																		P	<b>) #</b> :									-			
	Telephone No: (675)605-7210			•	0	Fax No:				96-1						_		epoi		ermai	t:	X	Ster	ndaro	 I		☐ TI				NPDI	ES	•
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AB # (Inb use only)	FIELD CODE		Jeginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	otal #. of Containers		6				ő			OW-Offinking Water StSludg	Non-Potable specify oth	L9	TPH: TX 1006 TX 1008	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Coming	The state of the s	RCI	N.O.R.M.	Richa ?	,	RUSH TAT (Pre-generalize) 24 4	Observed TAT 4 PAX	Military 1.4 i e L.A. 1
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miarrii, 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. U	0			,		
Lab ID#: 377	720						
Initials: AL	,		<del>_</del>				
	S	ample Rece	ipt Check	list			
1. Samples on ice?	· · · · · · · · · · · · · · · · · · ·			Blue	(Water)	No	· · · · · · · · · · · · · · · · · · ·
2. Shipping container in good cond	tion?			(Yes)	No	None	
3. Custody seals intact on shipping		ooler) and totti	es?	(Yes)	No	N/A	
4. Chain of Custody present?				Yes	No		
5. Sample instructions complete on	chain of cus	tody?		Yes	No	]	
6. Any missing / extra samples?	,			Yes	No		
7. Chain of custody signed when re	linquished / :	eceived?		Yes	No		
8. Chain of custody agrees with sar	npie label(s)	?		(Yes)	No		
9. Container labels legible and inta-	1?	······································		(Yes)	No		
10. Sample matrix / properties agre	e with chain	of custody?		(Yes)	No	<u> </u>	
11. Samples in proper container / b	ottle?			(Yes)	No		
12. Samples properly preserved?				(Yes	No	N/A	
13. Sample container intact?				(Yes)	No		
14. Sufficient sample amount for in	dicated test(s	3)?		(Yes)	No		ļ
15. All samples received within suf	icient hold ti	me?		(Yes)	No		
16. Subcontract of sample(s)?	·			Yes	No	N/A)	
17. VOC sample have zero head sp	ace?	· · · · · · · · · · · · · · · · · · ·	· <u> </u>	(fes)	No	N/A	
18. Cooler 1 No. Cooler 2 N	lo	Cooler 3 No.		Cooler 4 No	) <u>.                                    </u>	Cooler 5 No.	
lbs 3.6 °C lbs	°	11	osec	lbs	°C	lbs	°c
Contrat	None	conformanc	e Docume	ntation	Date/Time:		
Contact:	-oneored b	,			word totie.	· · · · · · · · · · · · · · · · · · ·	
Regarding:	<u>.                                    </u>		<del></del>		<del></del>		<del></del>
Corrective Action Taken:			,				
	<u> </u>						
Check all that apply: ☐Cooling p	rocess has b	egun shortly af	ter sampling	event and o	ut of temper	rature	

Final 1.000

condition acceptable by NELAC 5.5.8.3.1.a.1.

Client understands and would like to proceed with analysis

Initial and Backup Temperature confirm out of temperature conditions

# **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 (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: 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

### Sample receipt non conformances and Comments:

None

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 Analys ummary 377693

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

nelà

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

					Project Manager:	Diem Danon, n	
•	Lab Id:	377693-001	377693-002	377693-003	377693-004	377693-005	
Analysis Requested	Field Id:	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	
Analysis Requestea	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	
•	Sampled:	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	
Anions by E300	Extracted:						
·	Analyzed:	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	
•	Units/RL:	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	
BTEX by EPA 8021B	Extracted:	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	
	Analyzed:	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	
	Units/RL:	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	1,111
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	
Percent Moisture	Extracted:						
	Analyzed:	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	
	Units/RL:	% 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	
TPH By SW8015 Mod	Extracted:	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	
·	Analyzed:	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	
	Units/RL:	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



Project Name: Southern Union Gas Landfarm

/ork Orders: 377693,

Lab Batch #: 811407

**Sample:** 566202-1-BKS / BKS

**Project ID:** 

Batch:

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	Control Limits %R	Flags
Analytes			[D]		
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	Control Limits %R	Flags	
Analytes			[D]	1		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/1	0 14:08 SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes			<sup>[4]</sup> ,				
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	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	_		[D]		
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:

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	
· . • • • • • • • • • • • • • • • • • •			ļ			
1,4-Difluorobenzene	0.0303	0.0300	101	80-120		
4-Bromofluorobenzene	0.0274	0.0300	91	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 377693,

Sample: 377693-003 / SMP

**Project ID:** 

Lab Batch #: 811407

Matrix: Soil Batch:

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	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Soil

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 06/19/10 17:29	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	•		[D]			
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:

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	Control Limits %R	Flags	
Analytes			[D] .			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 18:14		SURROGATE RECOVERY STUDY					
вте	X 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:

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	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0304	0.0300	101	80-120		
4-Bromofluorobenzene	0.0308	0.0300	. 103	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 377693,

Project ID:

Lab Batch #: 811388

Sample: 566174-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg	<b>Date Analyzed:</b> 06/19/10 15:38	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
•	Analytes	17	(-)	[D]					
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	<b>Date Analyzed:</b> 06/19/10 16:10	SURROGATE RECOVERY STUDY							
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes		İ	[D]					
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:

Matrix: Solid

	SU SU	SURROGATE RECOVERY STUDY							
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
I-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							
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes		·	[D]					
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 Analy	zed: 06/20/10 01:39	SURROGATE RECOVERY STUDY							
TPH By SW8015 M	Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
I-Chlorooctane		102	99.5	103	70-135				
o-Terphenyl		58.9	49.8	118	70-135				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;ll results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 377693,

Project ID:

Lab Batch #: 811388

Sample: 377693-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/20/10 02:08	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes		]	[D]					
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/20/10 02:38	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/20/10 03:36	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod  Analytes	Amount Tound [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:

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	*			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## 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	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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
١	Analytes		[B]	[C]	[D].	[E]	Result [F]	[ [G]				
٠	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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]						
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 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	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					



## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377693

Lab Batch #: 811435

Date Analyzed: 06/19/2010

Project ID:

Date Prepared: 06/19/2010

Analyst: LATCOR

**QC-Sample ID:** 377678-001 S

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUI								
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	•			

Lab Batch #: 811582

Date Analyzed: 06/21/2010

Date Prepared: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATRIX / MATRIX SPIKE RECOVERY STUD							
Inorganic Anions by EPA 300  Analytes	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	х		

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

**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 #:

Matrix: Soil

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

**Date Prepared:** 06/19/2010

Analyst: ASA

Departing United malk

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result  F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[0]	[D]	[E]	1100000 (1)	[G]		/*	****	
Benzene	ND	0.1114	0.0681	61	0.1105	0.0564	51	19	70-130	35	Х
Toluene	ND	0.1114	0.0743	67	0.1105	0.0609	. 55	20	70-130	35	Х
Ethylbenzene	ND	0.1114	0.0721	65	0.1105	0.0581	53	22	71-129	35	Х
m,p-Xylenes	ND	0.2227	0.1545	69	0.2210	0.1224	55	23	70-135	35	х
o-Xylene	ŃD	0.1114	0.0780	70	0.1105	0.0599	. 54	26	71-133	35	Х

Lab Batch ID: 811388

QC-Sample ID: 377688-001 S

Batch #:

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	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377693

Lab Batch #: 811435

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

**Project ID:** Analýst: LATCOR

Date Prepared: 06/19/2010

Matrix: Soil

QC- Sample ID: 377678-001 D Reporting Units: mg/kg

Batch #: 1

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVE								
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag					
Analyte	11-7	[B]								
Chloride	79.7	60.3	28	20	· F					

Lab Batch #: 811582 .

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

**Date Prepared:** 06/21/2010

Analyst:LATCOR

QC- Sample ID: 377693-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVER							
Anions by E300 Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
Chloride	ND	ND	NC	20					

Lab Batch #: 811317

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

**Date Prepared:** 06/19/2010

Analyst: JLG

QC-Sample ID: 377692-001 D

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY													
Percent Moisture	Parent Sample Result  A	Sample Duplicate Result	RPD	Control Limits %RPD	Flag										
Analyte		[B]	·.												
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

# ם מ

# **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														-	Pr	ojec	t Na	me: _	Sou	the	ırn L	<u>Inio</u>	n G	aş	Lan	ıdfar	m		_
	Company Name	Basin Environmental Co	nsultin	ıg, LLC	<u> </u>	<u> </u>												P	ojec	t#:_											
	Company Address:	P.O. Box 381														-	ı	Proje	ect L	.oc: <u> </u>	Lea	Cou	nty,	NM					<u> </u>		_
	City/State/Zip:	Lovington, NM 88260														•			PC	) #:_		_									
	Telephone No:	<u>4575)805-7210.</u>				_ Fax No:	1	505	39	B-14	29					R	ерог	t Fo	rmat	. [	X,	Stan	dard			] TR	(RP		□ N	PDE	s
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LAB # (lab use only)	FIEL	.D COD€	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	82	rinc <sub>s</sub>	HSO.	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DW-Drinking Water SL-Sludg	NP-Non-Potable Specify Oth	TPH: 418.1 (80158) 801	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkelinity)	MAINTENN CEC	Welders As Ag tes Co Cr to rig.s	Serrivolatiles	STEX BOZ1B/503 OF BTEX 8260	RCI	N.O.R.M.	CM Bridges E.		RUSH TAT (Pre-Schedule) 24, 48, 72 hn	Standard TAT A DAY
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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 Env.				
Date/Time: 6:17:10 11:20				•
Lab ID#: 377693				
Initials: AL				
Sample Receipt Check	list			
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 kottles?	Yes	No	N/A	
4. Chain of Custody present?	(Yes)	No		
5. Sample instructions complete on chain of custody?	Yes	No		
8. 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	(NA)	
17. VOC sample have zero head space?	(fes)	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	)	Cooler 5 No.	
ibs 3.6 °C lbs °C lbs °C	ibs	°c	lbs	°C
Nonconformance Docume	entation			
Contact:Contacted by:		Date/Time:		
oonacc sy.	<del></del>		,	
Regarding:			· · · · · · · · · · · · · · · · · · ·	
,				
Corrective Action Taken:				
	<del></del>			
Check all that apply: Cooling process has begun shortly after sampling condition acceptable by NELAC 5.5.8.3.1.a.1		out or temper	rattire	

☐ 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 (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: 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	<b>Date Collected</b>	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



Proiect ID:

Work Order Number: 377715

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-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 Consulung, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inela:

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

					Project Manager:	Brent Barron, II
	Lab Id:	377715-001	377715-002	377715-003	377715-004	·
Analysis Requested	Field Id:	VZ Cell 10 G-1	VZ Cell 10 G-2	VZ Cell 10 G-3	VZ Cell 10 G-4	
Analysis Requested	Depth:					
	Matrix:	SOIL	SOIL	SOIL	SOIL	·
	Sampled:	Jun-15-10 14:20	Jun-15-10 14:30	Jun-15-10 14:40	Jun-15-10 14:50	
Anions by E300	Extracted:					
	Analyzed:	Jun-21-10 12:53	Jun-21-10 12:53	Jun-21-10 12:53	Jun-21-10 12:53	
	Units/RL:	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	
BTEX by EPA 8021B	Extracted:	Jun-19-10 11:45	Jun-19-10 10:15	Jun-19-10 10:15	Jun-19-10 10:15	
	Analyzed:	Jun-19-10 21:35	Jun-19-10 15:19	Jun-19-10 15:41	Jun-19-10 16:04	
	Units/RL:	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	
Percent Moisture	Extracted:					
·	Analyzed:	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	Jun-19-10 09:18	
	Units/RL:	% RL	% RL	% RL	% RL	
Percent Moisture		7.87 1.00	8.81 1.00	4.47 1.00	9.30 1.00	
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55	Jun-18-10 14:55	Jun-18-10 14:55	Jun-18-10 14:55	
	Analyzed:	Jun-21-10 19:13	Jun-21-10 19:40	Jun-21-10 20:08	Jun-21-10 20:34	
	Units/RL:	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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Project Name: Southern Union Gas Landfarm

**York Orders:** 377715,

Project ID:

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Batch:

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	Control Limits %R	Flags
Analytes	- •		[D]		
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	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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					
ВТЕХ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1.4-Difluorobenzene	0.0354	0.0300		80-120		
4-Bromofluorobenzene	0.0254	0.0300	85 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	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0253	0.0300	84	80-120		
4-Bromofluorobenzene	0.0291	0.0300	97	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



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	SU	RROGATE R	ECOVERY	STUDY		
BTEX by	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Ana	llytes			[D]	!	1
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 06/19/10 19:03	SURROGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
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:

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	Control Limits %R	Flags	
Analytes			[D]			
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						
втех	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
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:

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	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0290	0.0300	97	80-120		
4-Bromofluorobenzene	0.0271	0.0300	90	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

7ork Orders: 377715,

Project ID:

Lab Batch #: 811407

Sample: 566202-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:08	s L su	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes		,	[D]				
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

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	SURROGATE RECOVERT STUDI					
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
						1,4-Difluorobenzene
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	Control Limits %R	Flags	
Analytes			[D]			
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  BTEX by EPA 8021B	SURROGATE RECOVERY STUDY					
	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1-Chlorooctane	128	99.8	128	70-135	<u> </u>	
o-Terphenyl	56.8	49.9	114	70-135	L	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Work Orders: 377715,

Project ID:

Lab Batch #: 811610

Sample: 566324-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 06/21/10 18:19	SURROGATE RECOVERY STUDY							
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes	, ,		[D]					
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/21/10 18:46	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True / Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	•		[D]	]	
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 SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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								
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[D]						
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								
	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		88.9	100	89	70-135					
o-Terphenyl		43.9	50.2	87	70-135					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

York Orders: 377715,

Sample: 377715-004 / SMP

Batch:

Project ID: Matrix: Soil

Lab Batch #: 811610

SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 06/21/10 20:34	SURROUATE RECOVERT STUDI								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes	[A]	[2]	[D]	, , , , ,					
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	50:28 SURROGATE RECOVERY STUDY								
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			[D]						
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 10:55	SU	RROGATE RI	ECOVERY	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 Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### **BS / BSD Recoveries**



Project Name: Southern Union Gas Landfarm

Work Order #: 377715

Analyst: ASA

Date Analyzed: 06/19/2010

**Project ID:** 

Lab Batch ID: 811393

Sample: 566168-1-BKS

Sample: 566202-1-BKS

Date Prepared: 06/19/2010 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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	]	[B]	. <b>[C</b> ]	[D]	[E]	Result [F]	[G]		1		]
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	

116

Analyst: ASA

Lab Batch ID: 811407

o-Xylene

Date Prepared: 06/19/2010

0.1155

Batch #: 1

0.1000

ND

Date Analyzed: 06/19/2010

114

Matrix: Solid

71-133

Units: mg/kg

BLANK /BLANK SPIKE	/ BLANI	K SPIKE	<b>DUPLICATE</b>	RECOVERY STUDY
		•		

0.1141

Cuits. "8" 8	L				<u> </u>	·					
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	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	J				(~)		<u> </u>				
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
Analytes		رطا	[0]	[]	[E]	Result [F]	ا رق				
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 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 #: 377715

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	MATE	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	Х		

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

BRL - Below Reporting Limit



#### **MSD Recoveries Form 3 - N**

Project Name: Southern Union Gas Landfarm



Work Order #: 377715

Project ID:

Lab Batch ID: 811393

**QC- Sample ID:** 377719-001 S

Batch #:

Matrix: Soil

Date Analyzed: 06/19/2010

**Date Prepared:** 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

Reporting Ontis. Ingreg	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	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 #:

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	Parent Sample Result	Spike Added	Spiked Sample Result  C	Spiked Sample %R		Duplicate Spiked Sample Result  F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	(-,	[D]	[E]		[G]				
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	х
Ethylbenzene	ND	0.1114	0.0721	65	0.1105	0.0581	53	22	71-129	35	Х
m,p-Xylenes	ND	0.2227	0.1545	69	0.2210	0.1224	55	23	70-135	35	Х
o-Xylene	ND	0.1114	0.0780	70	0.1105	0.0599	54	26	71-133	35	χ.

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



## 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 #:

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	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	(C)	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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

19



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377715

Lab Batch #: 811582

Date Prepared: 06/21/2010

**Project ID:** 

Date Analyzed: 06/21/2010

Analyst:LATCOR

QC- Sample ID: 377693-005 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE/SAMPLE DUPLICATE RECOVERY							
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flág				
Analyte					_				
Chloride	ND	ND	NC	20					

Lab Batch #: 811317

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Analyst:JLG

QC- Sample ID: 377692-001 D

Batch #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY										
Percent Moisture	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte		<b>[B]</b>		,	•							
Percent Moisture	9.85	10.3	5	20								

# **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							-							_	Pr	ojec	t Na	me:	Sou	the	rn U	nio	n G	88	Lanc	ifarr	<u>n</u> _		
	Company Name	Basin Environmental	Consultin	g, LLC	:								-			_		Pi	ojec	:1 <b>#</b> :_											
	Company Address:	P.O. Box 381				· ·							_			_	ı	Proj	ect L	.oc:	Lea (	Cou	nty, I	M							
	City/State/Zip:	Lovington, NM 88260	<u>.</u> .													_			P	)#: <sub>_</sub>											
	Telephone No:	(575)605-7210				_ Fax No:		(50	5) 3	96-1	429	1					Repor	t Fo	rmal	ا يا	X s	tano	lard			TR	RP	ſ	] NF	PDE\$	<b>}</b>
	Sampler Signature:	Camilla	$\mathcal{Z}_{\mathcal{S}}$	ركيس	int	e-mail:		<u>cil</u>	ory	ant	@	oas	in-c	ons	ulti	ng.	com	_							,			_			
(lab use	only)	·	_ •	g														F			TCI TOTA	.P:	Analy	/Ze F	X	Τ	П	র	T	F E	
ORDEF	x#: 51	7715			· · · · · · · · · · · · · · · · · · ·	<del>,</del>	r —	_	Pr	eser	vatio	on &	of Co	onta	ners	I A	/latrix	8015B		П	T	18	3	T				Ŋ	ľ	ā,	<u> </u>
AB# (lab use only)	FIEL	D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Fittared	Total #. of Containers	<u>83</u>	HNO,	НС	H <sub>2</sub> SO <sub>4</sub>	NaOH	None	Other ( Specify)	DW-Drinking Water SL-Study	CW - Groundwater 5-50lV50 NP-Nor-Potable Specify Oth	15.E	TX 1005	Cetions (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	Metale: An An Be Ca C. Or Un	Volatiles	Semivolatiles	BTEX 80218/5030 or BTEX 8260	RCI	NO.R.W.	Collegacias E32		RUSH TAT (Pre-Schedule) 24, 48, 72 hrs	Standard TAT 4 DAY
16	VZ Ce	II 10 G-1			6/15/10	1420		1	х							S	OIL	x							x		$\Box$	x	I		X
07	VZ Ce	II 10 G-2			6/15/10	1430		1	х							8	OIL	X	Ш		$\bot$	$\perp$	L	$oxed{oxed}$	X		$\Box$	x		$\square$	X
03	VZ Ce	ill 10 G-3			6/15/10	1440		1	X			Ц	_			S	OIL	X	Ц	_		┵	$oldsymbol{\perp}$	_	X			<u> </u>	丄	Ц	X
04	VZ Ce	II 10 G-4			6/15/10	1450		1	х				$\bot$		$oldsymbol{\downarrow}$	S	OIL	X		4	$\downarrow$	$\bot$	1	_	X	Ц	<del> </del>	×		Ш	X
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Relinquisi	Miller 1 yr	Date 6/17 Date	70	me O	Received by:  5062 / Received by:	our								0	117	ate 7	7	Time	•	VOC Cust Sem	s Fre	e of seals	Den	dspa conta	iner			KAR GRAN		202	
5000 Relinquisi	ed by:	(4/1>	112	me em	Received by ELC	от:	ρ						<del></del>			ate	را د	Time	,	t t Tem	y Sa y Co perat	mple unier 07 une	r/Cile ? gla Upon	UP!	ep.? S Xelpt	DHIL :		edEx ζ.(¿	Lon	N Ne Sta	ır



#### XENCO Laboratories

Atlanta, Boca Raton. Corpus Christi, Dallas Houston, Mlami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Trie: Sample Receipt Checidist

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 B	Env.				_		
( . 17		20	•				
Date/Time: 0 1	77710	00					-
Lab ID#:	>/1115		•				
Initials:	KL		-		•		
		Sample Recei	ot Check	list			
1. Samples on ice?				Blue	Water	No	
2. Shipping container in good	d condition?			Yes	No	None	
3. Custody seals intact on sh	ipping container	(cooler) and kottle	?	(Yes)	No	NIA	
4. Chain of Custody present?	,			Yes	No		
5. Sample instructions comp	lete on chain of c	ustody?		Yes	No		
6. Any missing / extra sample				Yes	(No)		
7. Chain of custody signed w	hen relinguished	/ received?		(Yes)	No		
8. Chain of custody agrees w	ith sample label(	s)?		(Yes)	No		
9. Container labels legible an	d intact?			(Yes)	No		
10. Sample matrix / propertie	s agree with cha	in of custody?		(Yeg)	No		
11. Samples in proper contai	ner / bottle?			(Yes)	No		
12. Samples properly presen	/ed?			(Yes)	No	NA	
13. Sample container intact?			,	( Yes	No		
14. Sufficient sample amount	for indicated ter	st(s)?		(Ÿes)	No		
15. All samples received with				(Yes)	No		
16. Subcontract of sample(s)	?			Yes	No	(NA)	
17. VOC sample have zero he				(Yes )	No	NA	
18. Cooler 1 No. Coo	eler 2 No.	Cooler 3 No.		Cooler 4 No	٠.	Cooler 5 No.	
1bs 3.6 °c	lbs	°C ibs	°C	ibs	°C	lbs	°C
	No	nconformance	Docume	ntation		<del> </del>	
Contact:	Contacted	i bv:		•	Date/Time:		
			<del></del>				
Regarding:							
Corrective Action Taken:							
			- <del></del>			<del></del>	
					<del></del>		
							<del></del>
Check all that apply:   Coc	oling process ha	s begun shortly after	r sampling	event and o	ut of tempe	rature	

condition acceptable by NELAC 5.5.8.3.1.a.1.

Client understands and would like to proceed with analysis

□ Initial and Backup Temperature confirm out of temperature conditions

# **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 (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(4444), 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	<b>Date Collected</b>	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

#### 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: 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 Analys Jummary 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

		·			Project Manager:	Brem Barron, II	
	Lab Id:	377719-001	377719-002				
Anglusis Daguested	Field Id:	VZ Cell 11 G-1	VZ Cell 11 G-2		٠		
Analysis Requested	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Jun-15-10 15:10	Jun-15-10 15:20				
Anions by E300	Extracted:	-					
72	Analyzed:	Jun-21-10 12:53	Jun-21-10 12:53				
	1 1						
Chloride	Units/RL:	mg/kg RL 8.67 4.47	mg/kg RL 15.6 4.45				
						·	
BTEX by EPA 8021B	Extracted:	Jun-19-10 10:15	Jun-19-10 10:15				•
	Analyzed:	Jun-19-10 18:41	Jun-19-10 20:33	,	e e		
	Units/RL:	mg/kg RL	mg/kg RL				
Benzene		ND 0.0011	ND 0.0011				
Toluene	<u> </u>	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				
Percent Moisture	Extracted:						
	Analyzed:	Jun-19-10 09:18	Jun-19-10 09:18				
	Units/RL:	% RL	% RL			•	
Percent Moisture		6.08 1.00	5.70 1.00				
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55	Jun-18-10 14:55				
	Analyzed:	Jun-22-10 00:10	Jun-22-10 00:37				
·	Units/RL:	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 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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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



Project Name: Southern Union Gas Landfarm

'ork Orders: 377719,

**Project ID:** 

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 13:28	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True - Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			[0]		
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 A	Analyzed: 06/19/10 13:50	SURROGATE RECOVERY STUDY					
BTEX by EPA	8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	<b>S</b> .			[D]			
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	SU	RROGATE R	ECOVERY	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	<del>(</del>
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

Sample: 377719-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 06/19/10 18:41	SURROGATE RECOVERY STUDY					
ВТЕ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			{D}			
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					
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
_	Analytes			[5]			
1,4-Difluorobenzene		0.0296	0.0300	99	80-120		
4-Bromofluorobenzene	:	0.0302	0.0300	101	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 377719,

Project ID:

Lab Batch #: 811393

Sample: 377719-001 SD / MSD

Matrix: Soil Batch:

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	Control Limits %R	Flags
Analytes	1	'-'	[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 20:33	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0253	0.0300	84	80-120			
4-Bromofluorobenzene	0.0284	0.0300	95	80-120			

Lab Batch #: 811610

Sample: 566324-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/21/10 17:52	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/21/10 18:	19 SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
1-Chlorooctane		127	100	127	70-135		
o-Terphenyl		63.2	50.1	126	70-135		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 377719,

Project ID:

Lab Batch #: 811610

Sample: 377719-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 00:10	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	11		[D]	, , , , ,		
I-Chlorooctane	107	100	107	70-135		
o-Terphenyl	50.8	50.1	101	70-135		

Lab Batch #: 811610

Sample: 377719-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 00:37	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	ļ		[D]		·
1-Chlorooctane	105	00.5	106	70 135	t

50.2

Lab Batch #: 811610

o-Terphenyl

Sample: 377715-001 S/MS

Batch:

Matrix: Soil

101

70-135

49.8

Units: mg/kg Date Analyzed: 06/22/10 10:28	SU	SURROGATE RECOVERY STUDY										
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
Analytes	•	ļ	[D]									
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 10:55	SURROGATE RECOVERY STUDY										
TPH By SW8015 Mod  Analytes  1-Chlorooctane	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 Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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		BLAN	K/BLANK	SPIKE / I	BLANK S	PIKE DUP	LICATE I	RECOVERY STUDY												
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Biank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag									
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]													
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 Analytes	Blank Sample Result [A]	Spike Added	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







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	Blank Sample Result [A]	Spike Added	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result IFI	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	l	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

Project ID:

Date Prepared: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	MATRIX / MATRIX SPIKE RECOVERY STUDY												
Inorganic Anions by EPA 300  Analytes	Parent Spiked Sample Control Sample Spike Result Added [C] [D] %R													
Chloride	ND	53.4	71.6	134	75-125	Х								

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

BRL - Below Reporting Limit



#### **Form 3 - M MSD** Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377719

Lab Batch ID: 811393

**QC- Sample ID:** 377719-001 S

Batch #:

Matrix: Soil

Project ID:

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	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	.%	%R	%RPD	
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 **Date Analyzed:** 06/22/2010

**QC-Sample ID:** 377715-001 S

Batch #:

Matrix: Soil

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	Ì
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)|

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Date Prepared: 06/21/2010

Work Order #: 377719

Lab Batch #: 811582

Project ID:

Date Analyzed: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 D

**Percent Moisture** 

Analyte

Batch #: 1 Matrix: Soil

Reporting Units: mg/kg

mg/kg	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY	ı
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag	
Analyte		[B]		l		İ
	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

Ren	ortina	Units:	%
Kep	OL LIUE	Omits:	/0

Percent Moisture

Chloride

SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
9.22	931	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				·											_	Pr	ojec	t Na	me:	Sou	the	<u>rn t</u>	<u>Jnic</u>	n (	<u> 388</u>	Lan	<u>ıdfar</u>	m		
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	City/State/Zip:	Lovington, NM 882	260														_			P	) <b>#</b> :											
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LAB # (leb use only)	FIEL	TO CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	90	HNO3	모	H <sub>2</sub> SO <sub>4</sub>	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)		GW = Groundwater S=Sol/Sol NP=Non-Potable Specify Oth	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cettons (Ca. Mg. Na. K)	Anions (Cl. SO4, Alkalinity)	Metals: As An Ba Cd Cr Po Ho	Volatiles	Semivolatiles	GTEX 8021 BISOS DA BTEX 8260	RCI	N.O.R.M.	Chi Buildes ?		RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
61	VZ Ce	ell 11 G-1				6/15/10	1510		1								S	OIL	x				I	I	I	X			X	$\Box$		X
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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

Perre 1 of 1

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

client: Basin	Env.						•	
Date/Time: 6	17.10 1	1.2	<u> </u>					
Lab ID#:	377719	7						
Initials:	AL	·						
		S	ample Receipt Che	eck	list			
1. Samples on ice?		·			Blue	Water	No	
2. Shipping container in	good condition?				(Yes)	No	None	
3. Custody seals intact		ner (co	poler) and bottles?		(Yes)	No	N/A	
4. Chain of Custody pre	sent?				Yes	No		
5. Sample instructions	complete on chain	of cus	tody?		Yes	No		
6. Any missing / extra s	amples?				Yes	(No)		
7. Chain of custody sig	ned when relinquis	hed / r	eceived?		(Yes)	No		
8. Chain of custody agr	rees with sample lai	bel(s)?	·		(Yes)	No		
9. Container labels legi	ble and intact?				Yes	No.		
10. Sample matrix / pro	perties agree with o	hain o	of custody?		Yee	No		-
11. Samples in proper	container / bottle?		<u> </u>		Yes	No		
12. Samples properly p	reserved?	·			(Yes)	No	N/A	
13. Sample container in	ntact?		-		(Yes)	No		
14. Sufficient sample a	mount for indicated	test(s	)?		(Ýes)	No		
15. All samples receive	d within sufficient )	rold tii	me?		(Yes)	No		
16. Subcontract of sam	ple(s)?				Yes	No	(N/A)	
17. VOC sample have z	ero head'space?	<u> </u>			(Yes	No	N/A	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 No	) <u>.                                    </u>	Cooler 5 No.	
1bs 3.6 °	C lbs	ಌ	ibs	°C	lbs	°c	ibs	ဘ°
		None	conformance Docu	me	ntation		•	
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Regarding:		<del></del>			<del></del>			
Corrective Action Take	on:							
Check all that apply:	condition a	ccept	egun shortly after samp able by NELAC 5.5.8.3.1 perature confirm out of	.a.1	•	-	rature	

□ 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 (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: 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

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 377722**



#### Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample Id VZ Cell 12 G-1 Matrix Date Collected

Sample Depth

Lab Sample Id

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

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: 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 Analys Jummary 377722

#### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

ine la c

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	
· .	Lab Id:	377722-001				
Analysis Requested	Field Id:	VZ Cell 12 G-1				
Analysis Requesieu	Depth:					
·	Matrix:	SOIL				
	Sampled:	Jun-15-10 15:40				
Anions by E300	Extracted:					
	Analyzed:	Jun-21-10 12:53				
·	Units/RL:	mg/kg RL				
Chloride		12.4 4.59				
BTEX by EPA 8021B	Extracted:	Jun-19-10 10:15				
	Analyzed:	Jun-19-10 22:02				4
	Units/RL:	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				
Percent Moisture	Extracted:					
	Analyzed:	Jun-19-10 09:18				
	Units/RL:	% RL	ı			
Percent Moisture		8.40 1.00				
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55				
	Analyzed:	Jun-22-10 08:12			,	
	Units/RL:	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.

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



Project Name: Southern Union Gas Landfarm

7ork Orders: 377722,

**Project ID:** 

Lab Batch #: 811393

**Sample:** 566168-1-BKS / BKS

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 06/19/10 13:28	SURROGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/19/10 13:50	SURROGATE RECOVERY STUDY						
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:5	7 SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			{D}		
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					
втех	K 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 19:2	6 SU	RROGATE R	ECOVERY	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	_

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
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

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 06/21/10 17:52	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1-Chlorooctane	121 .	99.7	121	70-135			
o-Terphenyl	56.5	49.9	113	70-135	<del></del>		

Lab Batch #: 811610

Sample: 566324-1-BLK / BLK

Batch: 1

Matrix: Solid

Units: mg/kg	Date Analyzed: 06/21/10 18:46	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		127	100	127	70-135	<u></u>
o-Terphenyl		63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377722-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 08		SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod  Analytes		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
				[D]						
1-Chlorooctane		120	100	120	70-135					
o-Terphenyl		55.3	50.0	111	70-135					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D]  $\approx 100 * A / B$ 

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

ork Orders: 377722,

Project ID:

Lab Batch #: 811610

Sample: 377715-001 S/MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 0	6/22/10 10:28 S	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes	"-1		[D]						
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 Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]			1	
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

Lab Batch ID: 811582 Sample: 811582-1-BKS

**Date Prepared:** 06/21/2010

Batch #: 1

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

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk, Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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 Accoveries



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 Samp

**Sample:** 566324-1-BKS **Batch #:** 1

Matrix: Solid

Units: mg/kg 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 #: 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 #:

Matrix: Soil

Reporting Units: mg/kg 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	Х			

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

BRL - Below Reporting Limit



#### **Form 3 - M MSD** Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377722

Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #:

Matrix: Soil

Project ID:

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

Analyst: ASA

Reporti

Reporting Units: mg/kg	·	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
BTEX by EPA 8021B	Parent Sample Result	Spike	Spiked Sample Result	Sample	-	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag				
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD					
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 Date Analyzed: 06/22/2010

**QC- Sample ID:** 377715-001 S

Batch #:

Matrix: Soil

Date Prepared: 06/18/2010

Analyst: BEV

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Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag				
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD					
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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377722

Lab Batch #: 811582 Date Analyzed: 06/21/2010 Project ID:

Date Prepared: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 D

Batch #:

Matrix: Soil

Reporting Un	nits: mg/l	kg
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•	•		14.		A	•••
		 			_	_
C	AMDI	/ CA	MDI	r n	HDI	14

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag								
Analyte		[B]											
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 #:

Matrix: Soil

SAN	<b>1PLE</b>	/SAMP	LE	DUP	LICAT	E R	ECOVE	

Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		<b>[B]</b>	]		·
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

# Pa

# En aronmental 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				·										_	Pro	ojeci	t Nai	ne: _	Sou	the	rn Ų	nlo	n G	as I	and	farm	1		
	Company Name	Basin Environmental C	onsultin	g, LLC	<u> </u>											-		Pr	ojec	t#:_											
	Company Address:	P.O. Box 381			<u>.</u>											_	F	roje	ect L	oc: <u>l</u>	ea (	our	ıty, ٨	im_					_		
	City/State/Zip:	Lovington, NM 88260														_			PC	#:_											
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LAB # (tab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Fittered	Total #. of Containers		HNOs					(Specify)	DW - Ordniding Water St Sludg	pedfy oth	TPH: 418.1 (80159) 8015	TPH: TX 1005 TX 1008	Cations (Ca. Mg, Na. K)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volaties	Semirotables	BTEX 80218/5030 & BTEX 8280	RCI	NORM.	4		RUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
	VZ Ce	all 12 G-1			6/15/10	1540			x			T	Ì	T		SC	)IL	x							x		X	:†_		_	X
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dalles Houston, Miami, Odessa, Philadeiphia 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 Basiv	r For		·				
Date/Time:	;= 10	1.2	<u>&amp;</u>				-
		7					
Lab ID#:	AL					*	
Initials:							
		S	ample Receipt Che	cklist 			
1. Samples on ice?	·			Blue	Water	No	
2. Shipping container i	n good condition?			Yes	No	None	
3. Custody seals intact	on shipping contain	ner (c	ooler) and lottles?	(Yes)	No	N/A	
4. Chain of Custody pr	esent?		- <u></u>	Yes	No		
5. Sample instructions	complete on chain	of cus	tody?	Yes	No		
6. Any missing / extra	samples?			Yes	No		
7. Chain of custody sig	ned when relinquis	hed / r	received?	(Yes)	No		
8. Chain of custody ag	rees with sample lai	bel(s)?	?	(Yes)	No		·
9. Container labels leg	ible and intact?			(Yes)	No		
10. Sample matrix / pro	operties agree with o	hain (	of custody?	(YES)	No		
11. Samples in proper	container / bottle?			Yes	No		
12. Samples properly	oreserved?			(Yes)	No	N/A	
13. Sample container i	ntact?		······································	(Yee)	No		
14. Sufficient sample a	mount for indicated	test(s	s)?	(Yes)	No		
15. All samples receive	ed within sufficient I	rold ti	me?	Yes)	No		
16. Subcontract of san	nple(s)?			Yes	No	(NA)	
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.	
1bs 3.6°	°C lbs	°C	lbs	°C lbs	°C	lbs	°C
		None	conformance Docum	nentation	•		
Contact:	Contac	cted b	y:		Date/Time:		
Regarding:				. <del></del>			
							<del></del>
Corrective Action Tak	en:						
Check all that apply:	Cooling process	hae h	egun shortly after sampl	ing event and a	ut of tempe	ratura	
oneck an marappiy.	condition a	ccept	able by NELAC 5.5.8.3.1.	a.1.			
	☐ Initial and Backu	p Terr	perature confirm out of t	temperature co	anoitions		

M.

□ 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(4444), 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

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### **Sample Cross Reference 377723**



### Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample IdMatrixDate CollectedSample DepthLab Sample IdVZ Cell 13 G-1SJun-15-10 16:00377723-001





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

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: 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 Analys Summary 377723

#### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inelad:

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	
	Lab Id:	377723-001					
Anglysis Paguestad	Field Id:	VZ Cell 13 G-1					
Analysis Requested	Depth:			•			
	Matrix:	SOIL					
	Sampled:	Jun-15-10 16:00	. ب		-		
Anions by E300	Extracted:						,
	Analyzed:	Jun-21-10 12:53	•				
	Units/RL:	mg/kg RL					
Chloride		71.0 4.43					
BTEX by EPA 8021B	Extracted:	Jun-19-10 10:15					
·	Analyzed:	Jun-19-10 22:25					
	Units/RL:	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					
Percent Moisture	Extracted:						
	Analyzed:	Jun-19-10 09:18		•			
	Units/RL:	% RL					
Percent Moisture		5.10 1.00					
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55					
	Analyzed:	Jun-22-10 08:40					
,	Units/RL:	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.

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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
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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: Southern Union Gas Landfarm

Vork Orders: 377723,

**Project ID:** 

Lab Batch #: 811393

Sample: 566168-1-BKS/BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 13:28	Su	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found  A	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	[A]	[6]	[D]	/6K	
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	SU	RROGATE R	ECOVERY	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	<u></u>
4-Bromofluorobenzene	0.0299	0.0300	100	80-120	

Lab Batch #: 811393

**Sample:** 566168-1-BLK / BLK

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:57	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyze	ed: 06/19/10 19:03	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021  Analytes	В	Amount Found [A]	True Amount [B]	Recovery .%R [D]	Control Limits %R	Flags
1,4-Diffuorobenzene		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	SU	RROGATE R	ECOVERY	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	l
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 377723,

Project ID:

Lab Batch #: 811393

Sample: 377723-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 22:25 SURROGATE RECOVERY STUDY							I
втех	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			١
1,4-Difluorobenzene		0.0253	0.0300	84	80-120		ŀ
4-Bromofluorobenzene		0.0289	0.0300	96	80-120		ı

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

Onits: hig/kg Date Alialyzed: 00/21/10 17.32					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		•
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/21/10 18:46 SURROGATE RECOVERY S					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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						
ТРН В	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
. •	Analytes			[D]	"	
1-Chlorooctane		102	99.9	102	70-135	
o-Terphenyl		49.7	50.0	. 99	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

/ork Orders: 377723,

**Project ID:** 

Lab Batch #: 811610

Sample: 377715-001 S / MS

Matrix: Soil Batch:

Units: mg/kg	Date Analyzed: 06/22/10 10:28	SU	RROGATE R	ECOVERY	STUDY	
ТРН	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	SU	RROGATE R	RECOVERY	STUDY	
ТРН	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 Recovery [D] = 100 \* A / B

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>^</sup> II results are based on MDL and validated for QC purposes.



### **BS / BSD Recoveries**



Project Name: Southern Union Gas Landfarm

Work Order #: 377723

Analyst: ASA

Project ID:

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

**Lab Batch ID: 811393** 

Sample: 566168-1-BKS

**Date Prepared:** 06/19/2010 **Batch #:** 1

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / B	BLANK S	PIKE DUPI	ICATE	RECOVE	RY STUD	Y	
BTEX by EPA 8021B	Blank Sample Result	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Spike	Blk. Spk Dup.	RPD	Control Limits	Control Limits	F

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Benzene	ND	0.1000	0.1080	108	0.1	0.1072	107	l	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	l	71-129	35	1
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 .	l	71-133	35	

Analyst: LATCOR

COR

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		BLAN	K/BLANK S	SPIKE / E	LANK S	PIKE DUPI	LICATE 1	RECOVE	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	ND	10.0	10.2	102	10	10.4	104	2	75-125	20	



### 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		BLAN	K/BLANK:	SPIKE / E	BLANK S	PIKE DUPI	ICATE 1	RECOVI	ERY STUD	OY	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[ <b>D</b> ]	[E]	Result [F]	[G]			,	
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

Date Prepared: 06/21/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 377693-005 S

Batch #:

Matrix: Soil

MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result	Control Limits %R	Flag	
ND	53.4	71.6	134	75-125	
	Parent Sample Result [A]	Parent Sample Spike Result Added [A] [B]	Parent Sample Spike Result Result Added [A] [B]	Parent Sample Result Added [A] Spiked Sample Result Result [B] Spiked Sample Result [C] [D]	Sample Spike Result %R Limits Result Added [C] [D] %R  [A] [B]

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

BRL - Below Reporting Limit



**Form 3 - M MSD** Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 377723 Lab Batch ID: 811393

QC- Sample ID: 377719-001 S

Batch #:

Matrix: Soil

Project ID:

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

Date Prepared: 06/19/2010

Reporting Units: mg/kg

Analyst: ASA

Reporting Onits. hig/ag	1	N	AATRIX SPIK	E/MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[C]	[D]	[E]	Result [F]	[G]	/*	/ok	70KID	
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 **Date Analyzed:** 06/22/2010

QC- Sample ID: 377715-001 S

Batch #:

Matrix: Soil

Date Prepared: 06/18/2010

Analyst: BEV

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag	
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD		
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



### **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377723

Lab Batch #: 811582 Date Analyzed: 06/21/2010

Project ID:

Date Prepared: 06/21/2010 Analyst: LATCOR

QC- Sample ID: 377693-005 D

Batch #: 1 Matrix: Soil

Reporting Units: mg/kg	SAMPLE/SAMPLE DUPLICATE RECOVERY

Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	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	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		<b>[B]</b>			]
Percent Moisture	9.22	9.31	1	20	

# **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															_		Pro	ojeç	t Na	me:	Sc	uth	ieri	ı Ur	<u>ıloı</u>	n G	<b>as</b>	Lan	dfa	<u>rm</u>			
	Company Name	Basin Environment	al Consu	iltin	g, LLC	<u> </u>											_			Pr	ojec	:t#:												_	
	Company Address:	P.O. Box 381																	F	roje	ect l	.oc:	Le	a Co	<u>unt</u>	y, N	M								
	City/State/Zip:	Lovington, NM 8826	io																		P	) #:													
	Telephone No:	(\$75)605-7210 ·					Fax No:		(50	<b>(5)</b>	396-1	429	)					Re	port	Fo	mai	t:	X	Sta	nda	rd			TRE	ŔP			NPD	ES	
	Sampler Signature:	Camell	r [	3	کی	irt	e-mail:		缩	ьгу	ani	@	bas	in-c	on:	sult	ing	.cc	<u>m</u>															_	
(lab use	only)	<del></del>			O							٠									_			CLP:	A	nalyz	e F				$\overline{\mathfrak{A}}$		$\exists$	12 hrs	
ORDE	R# 51	7723				<u></u>				P	eser	vati	on &	f of (	onta	iner	5	Mat	rix	98				TAL:	Se	H	$\dashv$	X S			X			¥ L	
LAB # (leb use only)	FIEL	D CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	80;	HNO,	нс	H <sub>2</sub> SO <sub>4</sub>	NaOH	NB <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Other ( Smooth.)	DW-Drinking Water St Stude	CW - Groundwater S-solizoi	pecffy	TPH: 418.1 8015M 80168	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg (	Votatiles	Semivolatiles	BTEX 80218/5030 O BTEX 8260	RCI		3 51175-4 (4)		1.	Standard TATA DAY	Standard IAI 4 DAT
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dalias 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

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

client: Basi	n E	NV.							
Date/Time:	0:17.	10	11:U	<u> </u>					-
Lab ID#:	3	7772	3						
Initials:		AL							
			S	ample Receipt (	Checki	list		•	
1. Samples on ice?						Blue	Water	No	
2. Shipping containe	r in good	condition?				(Yes)	No	None	
3. Custody seals inta	ct on shi	pping conta	ainer (co	ooler) and lottles?	<b>)</b>	Yes	No	N/A	
4. Chain of Custody	present?					Yes	No		
5. Sample instruction	ns compl	ete on chair	of cus	tody?		Yes	No		
6. Any missing / extr	a sample	\$?				Yes			
7. Chain of custody	signed w	nen relinqui	shed / r	eceived?		Yes	No		
8. Chain of custody :	agrees wi	th sample l	abel(s)?	<u> </u>		(Yes)	Mo		
9. Container labels le	egible and	d intact?				(Yes)	No		
10. Sample matrix / p	properties	agree with	chain o	of custody?		(Yes)	No		
11. Samples in prope	er contair	er/bottle?				Yes	No		
12. Samples propert	y preserv	ed?				(Pes)	No	N/A	
13. Sample containe	r intact?					(Yes)	No		
14. Sufficient sample	amount	for indicate	ed test(s	s)?		(Yes)	No		
15. Ali samples rece	ived with	in sufficient	hold ti	me?		Yes)	No		
16. Subcontract of s	ample(s)	?	•			Yes	No	(N/A)	
17. VOC sample have	e zero he	ad`space?				(Yes)	No	N/A	
18. Cooler 1 No.	Coo	er 2 No.		Cooler 3 No.		Cooler 4 No	),	Cooler 5 No.	
1bs 3.6	> °C	lbs	°C	Ibs	ి లా	lbs	°C	lbs	°C
,			None	conformance Do	cume	ntation	•		
Contact:		Cont	acted by	y:			Date/Time:		<del></del>
Regarding:		<del> </del>							
Corrective Action Ta	ken:								
·									
		,		-					
Check all that apply	; <b>⊡Coo</b>	ling proces	s has b	egun shortly after sa	mpling	event and o	ut of tempe	rature	
	⊡initi			able by NELAC 5.5.8 perature confirm ou			nditions		

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(4444), 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

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
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

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-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 Analys

### **ummary 377726**

#### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

inelad:

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

					Project Manager:	Brent Barron, II	
	Lab Id:	377726-001					
Analysis Requested	Field Id:	VZ Cell 14 G-1					
Anuiysis Nequesieu	Depth:						
	Matrix:	SOIL					
	Sampled:	Jun-15-10 08:00					
Anions by E300	Extracted:			-			
	Analyzed:	Jun-21-10 22:43					·
	Units/RL:	mg/kg RL	11				
Chloride		8.05 5.65					
BTEX by EPA 8021B	Extracted:	Jun-19-10 10:15					
	Analyzed:	Jun-19-10 23:32					
	Units/RL:	mg/kg RL	<u> </u>				
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	·	<u> </u>			
Percent Moisture	Extracted:						
	Analyzed:	Jun-19-10 09:18					
	Units/RL:	%RL					
Percent Moisture		25.6 1.00					
TPH By SW8015 Mod	Extracted:	Jun-18-10 14:55					
	Analyzed:	Jun-22-10 10:01					
	Units/RL:	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
- **POL** 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



Project Name: Southern Union Gas Landfarm

'ork Orders: 377726,

Project ID:

Lab Batch #: 811393

Sample: 566168-1-BKS / BKS

Batch:

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	Control Limits %R	Flags	
Analytes	()	'-'	[D]			
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:

Matrix: Solid

Units: mg/kg Date	<b>Analyzed:</b> 06/19/10 13:50	SURROGATE RECOVERY STUDY					
BTEX by EP	A 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analyt	es	(*-)		[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 06/19/10 14:57	·SÜ	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	. Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I,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	SU	RROGATE R	ECOVERY	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	SU	RROGATE R	ECOVERY	STUDY	
ВТЕ	X 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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 377726,

Project ID:

Lab Batch #: 811393

Sample: 377726-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/19/10 23:32	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		Ì	[D]		
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	SU	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
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	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
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	SU	RROGATE R	RECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
I-Chlorooctane		127	100	127	70-135	
o-Terphenyl		63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377726-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 10:01	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R {D}	Control Limits %R	Flags
I-Chlorooctane ·	113	99.6	113	70-135	
o-Terphenyl	53.8	49.8	108	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 377726,

Project ID:

Lab Batch #: 811610

Sample: 377715-001 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 10:23	8 SU	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes			[D]		E					
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	SU	RROGATE R	ECOVERY	STUDY	•
ТРН І	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 Recovery [D] = 100 \* A / B

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### **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										
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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	l	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

Lab Batch ID: 811587

Sample: 811587-1-BKS

**Date Prepared:** 06/21/2010

Batch #: 1

Date Analyzed: 06/21/2010

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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

Lab Batch ID: 811610

Date Prepared: 06/18/2010

**Project ID:** 

Date Analyzed: 06/21/2010

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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G] .				
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

Date Prepared: 06/21/2010

**Project ID:** 

Analyst: LATCOR

QC- Sample ID: 377726-001 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	8.05	134	129	90	75-125				

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

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377726

Lab Batch ID: 811393

**QC- Sample ID:** 377719-001 S

Batch #:

Project ID: Matrix: Soil

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

**Date Prepared:** 06/19/2010

Analyst: ASA

Reporting Units: mg/kg

Benzene

Toluene

o-Xylene

Ethylbenzene m,p-Xylenes

	M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
Parent Sample Result [A]	Spike Added	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
ND	0.1054	0.0788	75	0.1069	0.0842	79	7	70-130	35	
ND	0.1054	0.0747	71	0.1069	0.0799	75	7	70-130	35	
ND	0.1054	0.0773	73	0.1069	0.0831	78	7	71-129	35	
ND	0.2108	0.1622	77	0.2138	0.1741	81	7	70-135	35	

Lab Batch ID: 811610

**Date Analyzed:** 06/22/2010

BTEX by EPA 8021B

**Analytes** 

**QC- Sample ID:** 377715-001 S Date Prepared: 06/18/2010

ND

Batch #:

79

Matrix: Soil

0.0894

84

71-133

35

BEV Analyst:

0.1069

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SP	IKE DUPLICA	TE RECOV	ERY STUDY
	Parent	C-Dard County C-Brad	Duntings	Continued	Cambridge

0.1054

1 0		1.	EXTREM DI III		ICLE DI	RE DOI Elen	IL KEC	OVERT	GIODI		
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	<b>%</b> .	%R	%RPD	
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	

0.0829

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

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

Page 13 of 16



### Sample Duplicate Recovery



Project Name: Southern Union Gas Landfarm

Work Order #: 377726

Lab Batch #: 811587

Project ID:

Date Analyzed: 06/21/2010

Date Prepared: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377726-001 D

Batch #:

Matrix: Soil

SAMPLE /	SAMPLE	DUPLICA	ATE I

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		[~]	L			
Chloride	8.05	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 #:

Matrix: Soil

Reporting Units: %

SAMPLE	/ SAMPLI	E DUPLIO	CATE E	RECOVERY

reporting outside / v	Samuel BE	Similar Similar Del Bienti B Recoverti					
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag		
Analyte	, IAI	[ <b>B</b> ]		, , , , ,			
Percent Moisture	9.22	9.31	1	20			

#### 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					<del></del>												Proj	ect	Nam	ie: <u>{</u>	Sour	he	n U	nio	n G	as l	Lanc	lfar	m		
	Company Name	Basin Environme	intal Co	onsultin	g, LLC												_			Pro	ject	<b>#</b> :_											
	Company Address:	P.O. Box 381															_		Pr	ojec	t Lo	c: <u>L</u>	ea C	our	ıty, N	iM							
	City/State/Zip:	Lovington, NM 88	3260			·	<u> </u>														PO	#:_											
	Telephone No:	(575)605-7210				· <u>·</u>	_ Fax No:		(50	5) 3	96-1	429	1				_	Rej	port I	Form	nat:	[2	3 s	and	ard			TRE	<b>3</b> P	1		PDE	s
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(lab use	only)		٦		U														•				TCLI		naly	ze i	or.		$\overline{T}$	一	_	Ţ <u>.</u>	]
ORDEF	37	7720								Pr	esen	vatio	n & /	of C	ontai	ners	17	Matr	ix	<b>60</b> T		7	OTA	+-	1		X	1 }		S		48, 72 hrs	
AB # (inb use only)		D CODE	•	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Held Filtered	Fotal #. of Containers		HNO,				None	edfy)	ater StStudg	S - SON/SO	Spacify Oth	PH: 418.1 (8015M) 8015	Calloca Co. N. 1006	Anione (C. S.A. Altodole.)	SAR/ESP/CEC	Metals: As Ag Ba Cd Cr Po Hg Se	Voletities	Semivolatiles	BTEX 8021 B/5030 or BTEX 8260	RCI	ľ	L Maiches E 3		NUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
	VZ Ce	II 14 G-1				6/15/10	0800		1	X				I			-	501	_	x		Ť	1	Ī			X			x	十	٢	X
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#### **XENCO** Laboratories

Atlenta, Boce Raton, Corpus Christi, Dallas Houston, Miami, Odesse, 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: Basiv	Env.				_		
Date/Time: 4	-17-10 1	1.2	<u> </u>				
Lab ID#:	37772	Le					
Initials:	AL						
		S	Sample Receipt Chec	klist			
1. Samples on ice?				Blue	Water	No	
2. Shipping container is	n good condition?	•		Yes	No	None	
3. Custody seals intact		ner (c	ooler) and bottles?	(Yes)	No	NA	
4. Chain of Custody pre	sent?			Yes	No		
5. Sample instructions	complete on chain	of cus	tody?	Yes	No.		
6. Any missing / extra s	samples?			Yes	(No)		
7. Chain of custody sig	ned when relinquis	ned /	received?	Yes	No		
8. Chain of custody ag	rees with sample lat	el(s)	?	(Yes)	No		
9. Container labels legi	ble and intact?			Yes	No		
10. Sample matrix / pro	perties agree with o	hain	of custody?	(Yes)	No		
11. Samples in proper	container / bottle?			(Yes)	No		
12. Samples properly p	reserved?			(Yes)	No	N/A	
13. Sample container in	ntact?			(Yes	No		
14. Sufficient sample a	mount for indicated	test(	3)?	(Yes)	No		
15. All samples receive	ed within sufficient l	old ti	me?	Yes	No		
16. Subcontract of sam	nple(s)?			Yes	No	NA	
17. VOC sample have z	ero head space?	·		(Yes)	No	N/A	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.	Cooler 4 No	o.·	Cooler 5 No.	
1bs 3.6 °	C lbs	°C	ibs	°C lbs	·°c	lbs	°c
		None	conformance Docum	entation			
Contact:	Contac	ted b	w:		Date/Time:		
			<u> </u>	-			<del></del>
Regarding:				<del></del> —	·		
			·				
Corrective Action Take	en:		·				
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			······································				
Check all that apply:	Cooling process	hae h	egun shortly after sampli	na event and r	out of tempe	cature	
	condition a	ccept	table by NELAC 5.5.8.3.1.a	.i.	-		
	☐ Initial and Backu	р Теп	operature confirm out of te	emperature co	nditions		

□ 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 (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: TX0136). Texas (T104704700-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

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

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## **Sample Cross Reference 377721**



## Basin Environmental Consulting, LLC, Lovington, NM

Southern Union Gas Landfarm

Sample IdMatrixDate CollectedSample DepthLab Sample IdVZ Cell 15 G-1SJun-15-10 16:20377721-001

#### 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 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: 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.



Total TPH

Project Id:

Contact: Camille Bryant

Project Location: Lea County, NM

## Certificate of Analys Jummary 377721

### Basin Environmental Consulting, LLC, Lovington, NM

Project Name: Southern Union Gas Landfarm

-Report Date: 23-JUN-10

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

Project Manager: Brent Barron, II Lab Id: 377721-001 Field Id: VZ Cell 15 G-1 Analysis Requested Depth: Matrix: SOIL Sampled: Jun-15-10 16:20 Anions by E300 Extracted: Jun-21-10 12:53 Analyzed: Units/RL: RLmg/kg Chloride 28.0 9.04 BTEX by EPA 8021B Extracted: Jun-19-10 10:15 Analyzed: Jun-19-10 21:40 Units/RL: mg/kg ND 0.0011 Benzene Toluene ND 0.0021 Ethylbenzene ND 0.0011 m.p-Xylenes ND 0.0021 ND 0.0011 o-Xylene Total Xylenes ND 0.0011 Total BTEX ND 0.0011 **Percent Moisture** Extracted: Jun-19-10 09:18 Analyzed: % Units/RL: RL Percent Moisture 7.05 1.00 TPH By SW8015 Mod Extracted: Jun-18-10 14:55 Jun-22-10 01:59 Analyzed: Units/RL: mg/kg RLC6-C12 Gasoline Range Hydrocarbons ND 16.1 C12-C28 Diesel Range Hydrocarbons ND 16.1 16.1 C28-C35 Oil Range Hydrocarbons ND

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

ND

16.1



## **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



Project Name: Southern Union Gas Landfarm

7ork Orders: 377721,

Project ID:

Lab Batch #: 811393

Sample: 566168-1-BKS/BKS

Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 06	5/19/10 13:28	SURROGATE RECOVERY STUDY									
BTEX by EPA 8021B		Amount . Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes				[D]							
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	SU	KRUGATE K	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	(**)	[5]	[D]	/•••	·
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:

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	Control Limits %R	Flags						
Analytes			[D] ·								
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:

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	Control Limits %R	Flags					
Analytes			{D}							
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						

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



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	50	RRUGATE R	ECOVERY	SIUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount  B	Recovery %R	Control Limits %R	Flags
Analytes			· [D]		
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:

Matrix: Solid

Units: mg/kg

Date Analyzed: 06/21/10 17:52

SURROGATE RECOVERY STUDY

Units; ing/kg Date Analyzed. 00/21/10 17.32										
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes			[D]							
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:

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	Control Limits %R	Flags					
Analytes			[D]							
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:

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 06/21/10 18:46	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
1-Chlorooctane		127	100	127	70-135	
o-Terphenyl		63.2	50.1	126	70-135	

Lab Batch #: 811610

Sample: 377721-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 01:59	SU	RROGATE R	ECOVERY	ECOVERY STUDY								
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R {D}	Control Limits %R	Flags							
1-Chlorooctane	102	99.9	102	70-135								
o-Terphenyl	49.5	50.0	99	70-135	<u> </u>							

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 377721,

**Project ID:** 

Lab Batch #: 811610

Sample: 377715-001 S/MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 06/22/10 10:2	28	KKUGAIE N	ECUVERI	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]	,,,,,	
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	SU	RROGATE R	RECOVERY	OVERY 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 Recovery [D] = 100 \* A / B

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;ll 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 Spike Blank Blank Spike Blank Blk. Spik Control Co

BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1080	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

Chloride

Sample: 811582-1-BKS

ND

Batch #: 1

10.0

Matrix: Solid

75-125

20

Units: mg/kg		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUPI	LICATE	RECOVI	ERY STUL	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[C]	[D]	[E]	Result [F]	[G]	/*	/0K	/UKI D	

10.2

102

10

10.4

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

104



# 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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added	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	<u> </u>		
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

Project ID:

**Date Prepared:** 06/21/2010

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	Х					

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

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 377721 Lab Batch ID: 811393

**QC- Sample ID:** 377719-001 S

Batch #:

Matrix: Soil

Project ID:

Date Analyzed: 06/19/2010

Date Prepared: 06/19/2010

Reporting Units: mg/kg

Analyst: ASA

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control . Limits	Flag		
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD			
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 #:

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	Parent Sample Result	Spike	Spiked Sample Result	Sample	-	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
C6-C12 Gasoline Range Hydrocarbons	ND	1080	1460	135	1090	1230	113	17	70-135	35	<u> </u>
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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 377721

Lab Batch #: 811582 Date Analyzed: 06/21/2010 Project ID:

Date Prepared: 06/21/2010

Analyst: LATCOR

QC- Sample ID: 377693-005 D

Batch #: 1 Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	[-1	[B]			
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 / SAMPLE DUPLICATE RECOVERY											
Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag								
Analyte		[B]											
Percent Moisture	9.22	9.31	i	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

# En Tronmental 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														-	Pro	ojeci	t Nar	ne:	Sou	ther	m U	nlo	n G	88	Lanc	far	<u>m</u>		
	Company Name	Basin Environmental C	onsultin	g, LLC	:					_						_		Pr	ojec	#:_											
	Company Address:	P.O. Box 381		_		<del></del>										_	F	roje	ect L	oc: <u>l</u>	ea (	Coun	ity, f	M						<u>.</u>	
	City/State/Zip:	Lovington, NM 88260												ç					PC	#:_											
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LAB # (ab use only)	FIEL	D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtared	Total #. of Containers	tze	HNO <sub>3</sub>	HCI	H <sub>2</sub> SO <sub>4</sub>	NBOH	Na <sub>z</sub> S <sub>z</sub> O <sub>3</sub> None	Other (Specify)	y Water	NP-Non-Potable Specify Oth	TPH: 418.1 (8015M) 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anores (Cr. SCA, Autainary)	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivoletiles	BTEX 80218,5030 or BTEX 8260	RCI	NORM.	क्रिट्रकात्वापः।		RUSH TAT (Pre-Behedule) 24,	Standard TAT 4 DAY
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoenix, San Antonio, Tampa Document Titie: 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	:- 10	1-20	>			•	-
Lab ID # :	377721						
Initials:	AL						
		Sa	imple Receipt Che	ecklist			
1. Samples on ice?				Blue	Water	No	
2. Shipping container in	good condition?			(Yes)	No	None	
3. Custody seals intact of		ner (co	oler) and kottles?	(Yes)	No	N/A	
4. Chain of Custody pres	sent?			Yes	No		
5. Sample instructions of	omplete on chain	of cust	ody?	Yes	No		
6. Any missing / extra sa			·	Yes	(No)		
7. Chain of custody sign		hed / re	ceived?	Yes	No		
8. Chain of custody agre				(YE)	No		
8. Container labels legit				(Yes)	No		
10. Sample matrix i prop	perties agree with o	hain o	f custody?	(Ye	No		
11. Samples in proper c	ontainer / bottle?		,	(Yes)	No		
12. Samples properly pr	reserved?			(Yes	No No	NA	
13. Sample container in	tact?			(Yes			
14. Sufficient sample an		test(s)	?	(Yes)	No		
15. All samples received				(Yes)	No No		
16. Subcontract of same				Yes		(NA)	
17. VOC sample have ze				(Yes	No	NA	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.	Cooler 4 No	).	Cooler 5 No.	
1bs 3.6 %	<del></del>	°c	lbs	°C lbs		T	°C
		Nonc	onformance Docu				
Contact:	Contac	cted by	•	· <del></del> _	Date/Time:		
Regarding:	·						
Corrective Action Takes	n:						
	condition a	ccepta	gun shortly after samp ble by NELAC 5.5.8.3.1 perature confirm out of	1.a.1.		rature	

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



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)

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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: 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

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 399258**



## Southern Union Gas Services- Monahans, Monahans, TX

### Southern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
VZ Cell 1 G-1	S	Dec-01-10 09:10		399258-001
VZ Cell I 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

Sample receipt non conformances and Comments:

None

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 reanalysis. Samples affected are: 590647-1-BLK,399258-005,399258-004,399258-001.



Project Id:

Contact: Rose Slade

#### Certificate of Analys **Jummary 399258**

### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 10-DEC-10

Project Location: Lea County, NM Project Manager: Brent Barron, II

			· · · · · · · · · · · · · · · · · · ·		Project Manager:	Dieni Banon, n	
,	Lab Id:	399258-001	399258-002	399258-003	399258-004	399258-005	
Analysis Requested	Field Id:	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	
Anatysis Requesteu	Depth:				,		
	Matrix:	SOIL	SOIL	SOIL	SOIL.	SOIL	
•	Sampled:	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	
Anions by E300	Extracted:						
12110115 DJ 2200	Analyzed:	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	
	Units/RL:				1		*
Chloride	Unity KL:	mg/kg R 10.6 4.5		mg/kg RL 84.7 10.1	mg/kg RL	mg/kg RL 19.3 4.38	
BTEX by EPA 8021B							
BIEA Dy EFA 8021B	Extracted:	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	
	Analyzed:	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	
	Units/RL:	mg/kg R		mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.001		ND 0.0060	ND 0.0011	ND 0.0010	,
Toluene		ND 0.002		ND 0.0120	ND 0.0023	ND 0.0021	
Ethylbenzene		ND 0.001		ND 0.0060	ND 0.0011	ND 0.0010	·
m_p-Xylenes		ND 0.002		ND 0.0120	ND 0.0023	ND 0.0021	•
o-Xylene		ND 0.001		ND 0.0060	ND 0.0011	ND 0.0010	
Total Xylenes		ND 0.001		ND 0.0060	ND 0,0011	ND 0.0010	
Total BTEX		ND 0.001	ND 0.0011	ND 0.0060	ND 0.0011	ND 0.0010	
Percent Moisture	Extracted:						
,	Analyzed:	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	
	Units/RL:	% R	~ % RL	% RL	% RL	% RL	
Percent Moisture		7.27 1.0	7.21 1.00	16.6 1.00	11.7 1.00	4.07 1.00	
TPH By SW8015 Mod	Extracted:	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	
	Analyzed:	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	
	Units/RL:	mg/kg R	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 16.	ND 16.1	ND 18.0	ND 16.9	ND 15.6	
C12-C28 Diesel Range Hydrocarbons		ND 16.	ND 16.1	ND 18.0	ND 16.9	ND 15.6	
C28-C35 Oil Range Hydrocarbons		ND 16.	ND 16.1	ND 18.0	ND 16.9	ND 15.6	
Total TPH		ND 16.	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 Laboratorics. XENCO Laboratorics 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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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116		



Project Name: Southern Union Gas Landfarm

'ork Orders: 399258,

Project ID:

Lab Batch #: 834940

Sample: 590617-1-BKS / BKS

Batch:	1 ·	Ma	trix: Solid
SHEE	nc.	TF	RECOVERY STUD

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	Control Limits %R	Flags	
Analytes			[D]		,	
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:

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	Control Limits %R	Flags	
Analytes	• •	',	[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 17:32	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		_	[D]		
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:

Matrix: Soil

Units: mg/kg	Jnits: mg/kg Date Analyzed: 12/07/10 18:19 SURROGATE RECOVERY STUD					
BTEX t	oy EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
A	nalytes	. ,		[D]		
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:

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		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 399258,

Sample: 399258-003 / SMP

Project ID:

Lab Batch #: 834940

Batch:

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			[D]			
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:

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	Control Limits %R	Flags	
Analytes			[D]			
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	Control Limits %R	Flags	
Analytes			[D]			
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	Control Limits %R	Flags	
Analytes			[D]			
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	SU	RROGATE RI	ECOVERY	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

/ork Orders: 399258,

Lab Batch #: 834972

Sample: 399258-001 S/MS

Project ID:

Matrix: Soil Batch:

Units: mg/kg	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	Ì		[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 18:30 SURROGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/07/10 21:01	SU	RROGATE R	ECOVERY :	STUDY	
	y EPA 8021B nalytes	Amount Found [A]	True Amount	Recovery %R [D]	Control Limits %R	Flags
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 21:22 SURROGATE REC			ECOVERY :	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	4 SURROGATE RECOVERY STUDY				
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0207	0.0300	69	80-120	*
4-Bromofluorobenzene	0.0273	0.0300	91	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



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						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	. ,		[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10	13:19	9 SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes		·	[D]			
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	<b>Date Analyzed:</b> 12/06/10 13:48	SU	RROGATE R	ECOVERY S	STUDY	,
	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: 399258-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/06/10 22:13	SURROGATE RECOVERY STUDY					
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes	,		[D]			
I-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	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		1	[D]	ŀ	
1-Chlorooctane	87.6	99.5	88	70-135	
o-Terphenyl	41.9	49.8	84	70-135	.,

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399258.

Project ID:

Matrix: Soil

Lab Batch #: 834726

Sample: 399258-003 / SMP

Batch:

Units: mg/kg Date Analyzed: 12/06/10 23:12	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg

Date Analyzed: 12/06/10 23:42

TPH By SW8015 Mod

**Analytes** 

1

SURROGATE RECOVERY STUDY Amount True Control Found Amount Recovery Limits Flags [A] [B] %R %R [D]

88

85

70-135

70-135

o-Terphenyl Lab Batch #: 834726

1-Chlorooctane

Sample: 399258-005 / SMP

88.0

42.2

Matrix: Soil

99.5

49.8

1

SURROGATE RECOVERY STUDY Date Analyzed: 12/07/10 00:12 Units: mg/kg Amount True Control **TPH By SW8015 Mod** Found Amount Recovery Limits Flags [A] [B] %R %R Analytes [D] I-Chlorooctane 92,1 99.7 92 70-135 o-Terphenyl 44.2 49.9 89 70-135

Lab Batch #: 834726

Sample: 399258-005 S/MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 00:42	SURROGATE RECOVERY STUDY  Amount True Control Found Amount Recovery Limits Flags									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes			[D]							
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	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



### **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		BLAN	K/BLANK	SPIKE / I	BLANK S	PIKE DUPI	LICATE 1	RECOVI	ERY STUD	Y	
BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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		BLAN	K/BLANK S	SPIKE / I	BLANK S	SPIKE DUP	LICATE I	RECOVI	ERY STUI	OY 	
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		(B)	[C]	[ <b>D</b> ]	[E]	Result [F]	[G]				
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

Batch #: 1

Project ID:

Date Analyzed: 12/06/2010

Lab Batch ID: 834914

Sample: 834914-1-BKS

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Anions by E300  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	ND	10.0	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	ļ	BLAN	K/BLANK S	PIKE / BLANK	SPIKE DUPI	ICATE F	RECOVERY	STUD	Y
		T	Τ							

Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]	:		- 	
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		BLAN	K/BLANK	SPIKE / E	BLANK S	PIKE DUPI	ICATE 1	RECOVI	ERY STUL	Y	
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 Dupticate Result [F]	Bik. 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 #: 399258

Lab Batch #: 834914

Date Prepared: 12/06/2010

Project ID:

Date Analyzed: 12/06/2010 QC- Sample ID: 399253-003 S

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	eporting 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
		ļ	<b></b>			Ļ.—
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 #:

Matrix: Soil

Reporting Units: mg/kg MATRIX SPIKE RECOVERY STUI											
Inorganic Anions by EPA 300  Analytes		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\*(C-A)/B Relative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



#### **Form 3 - M MSD Recoveries**

Project Name: Southern Union Gas Landfarm



Work Order #: 399258

Lab Batch ID: 834940 **Date Analyzed: 12/07/2010** 

**QC- Sample ID:** 399255-001 S

Batch #:

Matrix: Soil

Project ID:

**Date Prepared:** 12/07/2010

Analyst:

SEE

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

2I		MATRIA STIRE / MATRIA STIRE DUTLICATE RECOVERT STUDI													
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	-	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag				
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD					
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

**Date Analyzed:** 12/07/2010

**QC-Sample ID:** 399258-001 S

Batch #:

Matrix: Soil 1

**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	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag				
Analytes	[A]	[B]	[C]	70 K [D]	[E]	Result [F]	%K [G]	70	70R	76KFD					
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					



## 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 #:

Matrix: Soil

**Date Analyzed:** 12/07/2010

**Date Prepared:** 12/06/2010

Reporting Units: mg/kg

BEV Analyst:

Reporting Units: mg/kg		M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	_	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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	



## **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:

ed: 12/06/2010 Analyst: LATCOR

QC- Sample ID: 399253-003 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY												
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag									
CULLIA														
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	DUPLIC	ATE REC	OVERY
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
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

Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag										
Percent Moisture	9.60	10.8	11	20											

Lab Batch #: 834604

Date Analyzed: 12/06/2010 12:55

**Percent Moisture** 

Analyte

**Date Prepared:** 12/06/2010

11.7

Analyst:JLG

QC-Sample ID: 399258-004 D

Batch #:

Matrix: Soil

Reporting Units: %

Percent Moisture

SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

11.8

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: 432-563-1890 Fax: 432-563-1713

	Project Manager:	Ben Arguijo															-	Pro	ect	Nan	ne: S	out	herr	ı Ur	lon	Ga	S L	and	rarr	n		
	Company Name	Basin Environme	ntal Servi	ces 1	Techn	ologies, LLC											-		Pr	oject	#:_		_									
	Company Address:	P.O. Box 301					<u></u>							٦			-	P	roje	ct L	oc: <u>L</u>	ea C	ount	y, NI	M							
	City/State/Zip:	Lovington, NM 88	260														-	•		PO	#:_		117	87								
	Telephone No:	(575)396-2378				····	Fax No		(57	5) 3	96-1	429					. F	leport	For	mat	. [2	St	anda	ırd			TRR	₹P	1	☐ NF	PES	<b>;</b>
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(lab use	only)		7																E			TCL	): 					٦	$\top$	T	72 hrs	
ORDE	R# 399268	3								Pr	esen	vatio	on &	# of C	ontal	ners	М	atrix	83		Т	TOTAL	- S	$\vdash$	Н	X S					<b>å</b> ,	L
LAB # (lab use only)	,	_D CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	e)	HNO <sub>3</sub>	нсі	705′н	NaOH	None None	Other (Specify)	DW-Drinking Water St. = Sludg	~ ~	TPH: 418.1 (8015M) 8015B	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl., SO4, Arkalinity) SAR / FSP / CEC	Cd Cr Pb Hg	Volatiles	Semivolatiles	<b>HEX 8021B/5LIB</b> or BTEX 8260	RCI		Ci. E300		RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
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2	VZ C	ell 1 G-2				12/1/10	915		1	X	_						s	OIL	X		_	4	$\downarrow$			A			X	_	╄-	x
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4	VZ C	ell 1 G-4				12/1/10	925		1	X						1_	s	OIL	X		$\perp$	$\bot$		_		X		Ш	X	$\dashv$	╀	X
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#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia

Phoenix, San Antonio, Татра

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: Patal Environmental							
Date/Time: 12/3/10 1.45			•				
Lab ID#: 399258							
Initials: XM							
	S	ample Receipt Ch	ecki	ist	,		
1. Samples on ice?				Blue	Water	No	
2. Shipping container in good condition?				(es)	No	None	
3. Custody seals intact on shipping conta	iner (co	oler) and bottles?		Yes	No	N/A	· _ · _ · _
4. Chain of Custody present?				<b>786</b>	No		
5. Sample instructions complete on chain	of cus	tody?		Yes	No		
6. Any missing / extra samples?				Yes	No		
7. Chain of custody signed when relinquis	shed / r	eceived?		Yes	No		
8. Chain of custody agrees with sample la	bel(s)?			TES	No		
9. Container labels legible and intact?				Yes	No		
10. Sample matrix / properties agree with	chain c	of custody?		Yes	No ·		
11. Samples in proper container / bottle?				(Yes)	No		
12. Samples property preserved?				Yes	No	N/A	
13. Sample container intact?				Yes	No		
14. Sufficient sample amount for indicate	d test(s	)?		(Yes)	No	-	
15. All samples received within sufficient	hold ti	me?		Yes	No		
16. Subcontract of sample(s)?				Yes	No	N/A	
17. VOC sample have zero head space?				Yes	No	NA	
18. Cooler 1 No. Cooler 2 No.		Cooler 3 No.		Cooler 4 No	)	Cooler 5 No.	
lbs O °C lbs	ႚင	ibs	°င	ibs	°C	ibs	°C
	None	onformance Doc	ume	ntation			
Contact:Conta	cted by	<b>y:</b>			Date/Time:		
Regarding:	•						
							<del>~</del>
Corrective Action Taken:							
	<del></del>	·		· · · · · · · · · · · · · · · · · · ·			
Check all that apply: □Cooling process	has b	gun shortly after sam	pling	event and o	ut of temper	rature	
condition □Initial and Back	accept up Tem	able by NELAC 5.5.8.3. perature confirm out of	.1.a.1. of tem	perature co	nditions		•

Final 1.000

 $\Box$  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



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)

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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

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 399259**



## Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	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

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



Project Id:

Contact: Rose Slade

Project Location: Lea County, NM

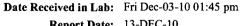
## Certificate of Analy

# Jummary 399259

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Report Date: 13-DEC-10



ojeti Eocation. Dea county, 1997								Project Ma	nager:	Brent Barron, II	
	Lab Id:	399259-00	1 .	399259-0	02	399259-0	003	399259-0	004		
Analysis Paguastad	Field Id:	VZ Cell 2 G	i-1	VZ Cell 2	G-2	VZ Cell 2	G-3	VZ Cell 2	G-4		
Analysis Requested	Depth:	•									
	Matrix:	SOIL		SOIL		SOIL		SOIL			
	Sampled:	Dec-01-10 09	9:40	Dec-01-10 0	9:45	Dec-01-10	09:50	Dec-01-10	09:55		
Anions by E300	Extracted:	-							-		
	Analyzed:	Dec-07-10 01	1:22	Dec-07-10 0	1:22	Dec-07-10	01:22	Dec-07-10	01:22		
	Units/RL:	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		
BTEX by EPA 8021B	Extracted:	Dec-06-10 14	1:00	Dec-06-10 1	4:00	Dec-06-10	08:30	Dec-06-10	08:30		
	Analyzed:	Dec-07-10 02	2:23	Dec-07-10 0	2:47	Dec-06-10	19:06	Dec-06-10	19:28		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL		`
Benzene		ND 0	.0012	ND	0.0011	ND	0.0011	ND	0.0011		
Toluene		ND 0	.0023	ND	0.0022	ND	0.0022	ND	0.0022		
Ethylbenzene		ND 0			0.0011		0.0011	ND	0.0011		
m_p-Xylenes		ND 0			0.0022		0.0022		0.0022		•
o-Xylene		ND 0		·	0.0011		0.0011		0.0011		
Total Xylenes		ND, 0		ND			0.0011		0.0011		
Total BTEX		ND 0	.0012	ND	0.0011	ND	0.0011	ND	0.0011		
Percent Moisture	Extracted:				,						
	Analyzed:	Dec-06-10 12	2:55	Dec-06-10 1	2:55	Dec-06-10	12:55	Dec-06-10	12:55		
	Units/RL:	%	RL	%	RL	%	RL	%	RL		
Percent Moisture		14.0	1.00	7.51	1.00	8.16	1.00	9.10	1.00		
TPH By SW8015 Mod	Extracted:	Dec-06-10 11	1:00	Dec-06-10 1	1:00	Dec-06-10	11:00	Dec-06-10	11:00		
	Analyzed:	Dec-06-10 21	1:35	Dec-06-10 2	1:54	Dec-06-10 2	22:14	Dec-06-10	22:34		
	Units/RL:	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	1	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.

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

Brent Barron, II Odessa Laboratory Manager

Final 1.000



### **Flagging Criteria**

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to 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
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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: Southern Union Gas Landfarm

7ork Orders: 399259,

Lab Batch #: 834653

**Sample:** 590469-1-BKS / BKS

Project ID:

Date Analyzed: 12/06/10 10:06

Batch:	1	Mat	rix: Solid	
SURR	OGA	TE	RECOVERY	STUDY

Units: mg/kg	Date Analyzed: 12/06/10 10:06	SU	RROGATE R	ECOVERY	STUDY	
ВТЕХ	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	• •	',	(D)	i	
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	Control Limits %R	Flags		
Analytes			[D]				
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:

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	Control Limits %R	Flags			
Analytes			[D]					
I,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:

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	Control Limits %R	Flags		
Analytes			[D]				
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	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0274	0.0300	91	80-120	
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	•

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Work Orders: 399259,

Project ID:

Lab Batch #: 834653

Sample: 399259-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 19:06	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 1	12/06/10 19:28	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes		(**)		[D]			
I,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:

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	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 16:18	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			(10)		
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	Control Limits %R	Flags
Analytes			[D]		
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0344	0.0300	115	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Vork Orders: 399259,

Project ID:

Lab Batch #: 834760

Sample: 399251-001 S / MS

Matrix: Soil

Units: mg/kg Date	<b>Analyzed:</b> 12/06/10 17:51	SU	RROGATE R	ECOVERY	STUDY	_
BTEX by EPA	A 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	' Flags
Analyte	es		Ì	{ <b>D</b> }	1	1
1,4-Difluorobenzene	1	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

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/06/10 18:14	SURROGATE RECOVERY STUDY					
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes	( <b>)</b>	, ,	[D]			
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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
I,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	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 20:37	SU	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	- 7		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 399259,

**Project ID:** 

Lab Batch #: 834718

Sample: 590499-1-BSD / BSD

Batch:

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	Control Limits %R	Flags	
Analytes			[D]			
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						
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
l-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	SU	RROGATE R	<b>ECOVERY</b>	STUDY	
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooctane		75.1	99.5	75	70-135	
o-Terphenyl		37.7	49.8	76	70-135	
		I	1	1	1	ı

Lab Batch #: 834718

Sample: 399259-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 21:54	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R  D	Control Limits %R	Flags				
Analytes  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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 22:14	SU	RROGATE R	ECOVERY	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

7ork 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	SU	RROGATE R	RECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	•		[D]		
1-Chlorooctane	75.3	99.7	76	70-135	
o-Terphenyl	38.2	49.9	77	70-135	,

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[Đ]	{E}	Result [F]	[G]				
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	l	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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]					
Benzene	NĎ	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

	BLAN	K/BLANK	SPIKE / E	SLANK S	SPIKE DUPI	JICATE	RECOVE	LKYSIUD	Y	
lt	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	F

Anio	ons by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes			[B]	[C]	[D]	[E] -	Result [F]	[G]				
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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R !D	Spike Added [E]	Blauk 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\*|(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

QC- Sample ID: 399258-004 S

Date Analyzed: 12/07/2010

Project ID:

**Date Prepared:** 12/07/2010

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	117	227	350	103	75-125					

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

BRL - Below Reporting Limit



**Form 3 - 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 #:

Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Reporting Units: mg/kg

Reporting Outes: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Spiked Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	<b>%</b>	%R	%RPD	
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 #:

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	Parent Sample Result	Spike	Spiked Sample Result	Sample	-	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	% ·	%R	%RPD	
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	NĎ	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\*(C-A)/B Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399259

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	RPD	Control Limits %RPD	Flag					
Analyte		[B]								
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: %

_				
I	SAMPLE / SA	MPLE	DUPLICATE	RECOVERY

Percent Moisture  Analyte  ercent Moisture	SAMI LE /	SAWII LLE	DOI LIC	AIE REC	OVERI
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]	[		
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	<u></u>		<del></del>						<u> </u>						P	roje	ect M	Vamo	e: <u>S</u>	out	heri	n U	nior	n Ga	18 L	.anc	lfarı	<u>m</u>		
	Company Name	Basin Environmental	Services	Techn	ologies, LLC														Proj	ect #	#:											
	Company Address:	P.O. Box 301														_		Pre	ojec	t Loc	:: <u>L</u> e	a C	ouni	ty, N	M							
	City/State/Zip:	Lovington, NM 88260	l			·														PO #	<b>;</b> :	c	117	28	7_							
	Telephone No:	(575)396-2378				Fax No:	*	(57	5) 3:	96-1	429						Repo	art F	om	nat:	X	Sta	anda	ard			TRR	٦P	ſ	NF	PDES	 3
	Sampler Signature:	_11/16	1			e-mail:		<u>pr</u>	n@	ba	sin	env	/.C0	<u>om</u>																		_
(lab use	•											سيد										TCLP	:	naly	ze F	or:		$\overline{T}$	T	T	72 hrs	
LAB # (lab use only)	·	D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	fotal #. of Containers	lce to				NaOH		None		CW = Groundwater S= Soil/Soil XI	on-rotable specify on	TPH: 418.1 (8015M) 8015B	Cations (Ca. Ma. Na. K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se		Semivolatiles	**************************************	RCI	Σ,	CI E 300		RUSH TAT (Pre-Schedule) 24, 48.	Standard TAT 4 DAY
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.3		ell 2 G-3			12/1/10	950		1	Х			T				T	SOIL	1	x	Τ				П	П	X	T	T	x	$\top$	П	х
4	VZ C	ell 2 G-4			12/1/10	955		1	X								SOIL	$\int_{\mathbb{R}^{2}}$	x							X	$oxed{oxed}$	floor	x	m I	$\prod$	Х
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Relinquis	. <i>,</i>	Date (2/3/)	/ / /	ime	Received by EL	OT: Nurstock									21	Date 3/			me 15	Те	empe	ratu	re U	pon	Rec Rec	ラーC でeipt:	λla	355	;	0	°C	



#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia

Phoentx, San Antonio, Tampa

Document Title: Sample Receipt Checklist

Document No.: SYS-SRC

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

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

# Prelogin / Nonconformance Report - Sample Log-In

Client: BEEN Environmental	,			•
Date/Time: 12/3/10 1:45				
Lab ID#: 399269				
Initials: XII				
Sample Receipt Che	cklist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	(FES)	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)?		No		
9. Container labels legible and intact?	Yes	No	ļ	
10. Sample matrix / properties agree with chain of custody?	Yes	No ·	<del>  </del>	
11. Samples in proper container / bottle?	(Yes)	No	<b> </b>	
12. Samples properly preserved?	Yes	No	N/A	
13. Sample container intact?	Yes	No	<del> </del>	
14. Sufficient sample amount for indicated test(s)?	(Yest)	No	<b> </b>	
15. All samples received within sufficient hold time?	Yes	No	<del> </del>	
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 N	o.	Cooler 5 No.	
ibs O°C ibs °C ibs	°C ibs	• <u>°</u>	ibs	<u>°c</u>
Nonconformance Docu	mentation			
Contact:Contacted by:		Date/Time:_		
Regarding:		. <u></u>	,	
Corrective Action Taken:				
Check all that apply:  Cooling process has begun shortly after samp condition acceptable by NELAC 5.5.8.3.1		out of tempe	rature	

□ 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



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):

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Xenco-Atlanta (EPA Lab Code: GA00046):

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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

Sample receipt non conformances and Comments:

None

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 reanalysis. Samples affected are: 590647-1-BLK,399256-003,399256-004,399256-001,399256-002.



# Certificate of Analys

# Jummary 399256

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

nel d

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

					Project Manager:	Dient Barron, II	
	Lab Id:	399256-001	399256-002	399256-003	399256-004	399256-005	
Analysis Requested	Field Id:	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	
Anaiysis Nequesieu	Depth:						
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	•
·	Sampled:	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	
Anions by E300	Extracted:						
	Analyzed:	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	
	Units/RL:	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	
BTEX by EPA 8021B	Extracted:	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	
	Analyzed:	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	
	Units/RL:	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	
Percent Moisture	Extracted:						
	Analyzed:	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	
	Units/RL:	% 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	
TPH By SW8015 Mod	Extracted:	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	
	Analyzed:	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	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
C6-C12 Gasoline Range Hydrocarbons		ND 16.5	ND 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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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



Project Name: Southern Union Gas Landfarm

'ork Orders: 399256,

**Project ID:** 

Lab Batch #: 834653

Sample: 590469-1-BKS/BKS

Batch:

Matrix: Solid

·	SURROGATE RECOVERY STUDY										
BTEX by EPA 8021B	Amount Found [A]	True Amount  B}	Recovery %R	Control Limits %R	Flags						
Analytes	. ,	'-'	[D]								
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	l su	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 11:32	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I,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	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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

·	SURROGATE RECOVERY STUDY										
	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
1,4-Difluorobenzene	0.0274	0.0300	91	80-120							
4-Bromofluorobenzene	0.0307	0.0300	102	80-120							

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



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	Su	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	(**)	(5)	[D]	. ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
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:

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	Control Limits %R	Flags		
Analytes			[D]				
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	Control Limits %R	Flags		
Analytes			[D] <sup>*</sup>				
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 17:2	6 SU	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes	]		[D]					
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						
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
1,4-Difluorobenzene		0.0262	0.0300	87	80-120			
4-Bromofluorobenzene		0.0315	0.0300	105	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399256,

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

Project ID:

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 18:30	SU	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes		',	[D]		!			
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/07/10 22:26	SURROGATE RECOVERY STUDY						
	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R  D	Control Limits %R	Flags		
1,4-Difluorobenzene	Kilalytes	0.0215	0.0300	72	80-120	*		
4-Bromofluorobenzene		0.0302	0.0300	101	80-120			

Lab Batch #: 834972

Sample: 399256-004 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 22:48	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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	SU	RROGATE RI	ECOVERY S	STUDY	•
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I,4-Difluorobenzene	0.0214	0.0300	71	80-120	*
4-Bromofluorobenzene	0.0307	0.0300	102	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>\*</sup>Il results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 399256,

Project ID:

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	()		[D]	,,,,,		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 13:19	Su	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes		ĺ	{D}	İ			
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								
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane	- Amarytes	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 St	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes			{ <b>D</b> }							
I-Chlorooctane	87.3	100	87	70-135						
o-Terphenyl	42.8	50.2	85	70-135						

Lab Batch #: 834726

Sample: 399256-002 / SMP

Batch:

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				
I-Chlorooctane	73.9	100	74	70-135					
o-Terphenyl	35.5	50.2	71	70-135					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

7ork Orders: 399256,

Lab Batch #: 834726

Sample: 399256-003 / SMP

Project ID:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/06/10 20:42	SURROGATE RECOVERY STUDY								
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes	1,		[D]	, ,					
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	Control Limits %R	Flags					
Analytes			[D]							
I-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:

Matrix: Soil

Units: mg/kg Date Analyzed: 1	2/06/10 21:42 SU	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags						
I-Chloroctane	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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 00:		SURROGATE RECOVERY STUDY									
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
I-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								
	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					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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	
Onto 0 · 0	· · · · · · · · · · · · · · · · · · ·	
		-

BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Coutrol Limits %R	Control Limits %RPD	Flag
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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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 #: 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		BLAN	K/BLANK S	SPIKE / E	SLANK S	PIKE DUPI	JCATE	RECOVI	LRY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	(E)	Result [F]	[G]				
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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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

Project ID:

Date Prepared: 12/06/2010

Analyst: LATCOR

Batch #:

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

BRL - Below Reporting Limit



#### **Form 3 - M MSD** Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 399256

Project ID:

Lab Batch ID: 834653

**OC-Sample ID:** 399338-002 S

Batch #: Matrix: Soil

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst:

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

1 0 00	MATTAGE OF THE PART OF THE POPULATION OF THE PART OF T											
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 #:

Matrix: Soil

Date Analyzed: 12/07/2010

**Date Prepared:** 12/07/2010

Analyst: SEE

Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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-Xvlene	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



## 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 #:

Matrix: Soil

Date Analyzed: 12/07/2010

**Date Prepared:** 12/06/2010

Analyst:

BEV

		•			
-					
	MATRIX SPIKE	ALATINIV	CDITZE	DIDIIO ATE	DECOME
	WIATRIX SPIRE	WAIKIA	SPIRE	DUPLICATE	KECUYEI

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STU					STUDY						
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample Result  F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%K [G]	70	70 <b>K</b>	70KFD	
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	



## **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  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
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 #:

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY								
Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag				
	(D)							
9.60	10.8	11	20					
	Parent Sample Result [A]	Parent Sample Result [A] Result [B]	Parent Sample Result [A] Sample Duplicate Result [B]	Parent Sample Result [A] Sample Duplicate Result [B] Control Limits %RPD				

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				<del> </del>										Pr	ojec	t Na	me:	So	the	<u>ırn L</u>	<u>Jnio</u>	<u>m G</u>	as	Lan	ndfar	<u>m</u> _		
	Company Name	Basin Environmental	Services	Techn	ologies, LLC											_	P	rojec	:t #:											
	Company Address:	P.O. Box 301				<del></del>										_	Proj	ect l	.oc:	Lea	Cou	inty,	NM							
	Company Name  Company Address: P.O. Box 301  City/State/Zip: Lovington, NM 8824  Telephone No: (575)396-2378  Sampler Signature: Lovington, NM 8824  Sampler Signature: Lovington, NM 8824  Sampler Signature: Lovington, NM 8824  Sampler Signature: Lovington, NM 8824  Sampler Signature: Lovington, NM 8824  Sampler Signature: Lovington, NM 8824  VZ Cell 3 G-1  VZ Cell 3 G-1  VZ Cell 3 G-3  VZ Cell 3 G-4  VZ Cell 3 G-5  Day Day Day Day Day Day Day Day Day Day	1													_		P	<b>)</b> #:			91	78	בי							
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AB # (lab use only)	·		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Total #. of Containers		93				Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	(Specify)	DW - Drinking Water St. Sludg CW - Croundwater S - Solivsol	4: 418.1 (8015M)	. ≃	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se Volatiles	Semivolatiles	HEX BUZTENSURD OF BTEX 8260		N.O.R.M.	CI & 300		ž	
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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#: 399256				
Initials: AM				
Sample Receipt Check	dist		· 	
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	(B)	No	٠	
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)?	(AS)	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 property preserved?	Yes	No	N/A	
13. Sample container intact?	(Yes)	No		
14. Sufficient sample amount for indicated test(s)?	Yes	No	<del> </del>	
15. All samples received within sufficient hold time?	Yes	No		<del> </del>
16. Subcontract of sample(s)?	Yes	No	N/A	
17. VOC sample have zero head space?	Yes	No	NA	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 N	o. '	Cooler 5 No.	
ibs O°C ibs °C ibs °	C lbs	°c	lbs	°c
Nonconformance Docume	entation	Date/Time:		
		22,00 - 111101_	<del></del>	
Regarding:		·		
Corrective Action Taken:				
Check all that apply:   Cooling process has begun shortly after sampling condition acceptable by NELAC 5.5.8.3.1.a.  Initial and Backup Temperature confirm out of te	. <b>1.</b>	, -	rature	

Final 1.000

☐ 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



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: 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

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

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# **Sample Cross Reference 399253**



## Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	Sample Depth	Lab Sample Id
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

Sample receipt non conformances and Comments:

None

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 reanalysis. 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 Analys

## Jummary 399253 Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Project Id:

Project Location: Lea County, NM

Contact: Rose Slade

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 13-DEC-10

Project Manager: Brent Barron, II

					Froject Manager.	Dient Bailon, II	
	Lab 1d:	399253-001	399253-002	399253-003	399253-004	399253-005	
Analysis Requested	Field Id:	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	•
Anatysis Requesteu	Depth:						
	Matrix:	SOIL	· SOIL	SOIL	SOIL	SOIL	
	Sampled:	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	
Anions by E300	Extracted:						
	Analyzed:	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	
	Units/RL:						•
Chloride	Units/KL:	mg/kg RL ND 9.51	mg/kg RL ND 4.76	mg/kg RL ND 9.29	mg/kg RL ND 9.85	mg/kg RL ND 8.81	
							<del></del>
BTEX by EPA 8021B	Extracted:	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	
	Analyzed:	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	
	Units/RL:	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	mg/kg RL	
Benzene		ND 0.0011	ND 0.001 <u>1</u>	ND 0.0011	ND 0.0012	ND 0.0010	<u> </u>
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	. <u> </u>
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	
Percent Moisture	Extracted:	•					
	Analyzed:	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	
_	Units/RL:	% <u>RL</u>	% 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	
TPH By SW8015 Mod	Extracted:	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	
	Analyzed:	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	
	Units/RL:	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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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



Project Name: Southern Union Gas Landfarm

/ork Orders: 399253,

Lab Batch #: 834940

**Project ID:** 

Sample: 590617-1-BKS/BKS

Matrix: Solid Batch:

	SURROGATE RECOVERY STUDY								
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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	Control Limits %R	Flags				
Analytes			[D]						
1,4-Difluorobenzene	0.0301	0.0300	100	80-120					
4-Bromofluorobenzene	0.0342	0.0300	114	80-120	<del></del>				

Lab Batch #: 834940

**Sample:** 590617-1-BLK / BLK

Batch:

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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 18:19	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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 18:4	2 SU	RROGATE R	ECOVERY S	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 399253,

**Project ID:** 

Lab Batch #: 834940

Sample: 399253-005 / SMP

Batch:

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	Control Limits · %R	Flags				
Analytes			[D]						
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:

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	Control Limits %R	Flags				
Analytes	<b>,</b> - <b>,</b>		[D]						
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 16:21	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	6 SURROGATE RECOVERY STUDY						
ВТЕ	X by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R  D	Control Limits %R	Flags		
1,4-Difluorobenzene	Analytes	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:

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		ļ	1	,			
1,4-Difluorobenzene	0.0262	0.0300	87	80-120 <sub>.</sub>			
4-Bromofluorobenzene	0.0315	0.0300	105	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399253,

Project ID:

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

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	Control Limits %R	Flags	
Analytes	[1	(2)	[D]	, , , ,		
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

SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 12/08/10 00:56	SURROGATE RECOVERT STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	()	'-'	[D]	/ / /			
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	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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		
I,4-Difluorobenzene	0.0241	0.0300	80	80-120			
4-Bromofluorobenzene	0.0279	0.0300	93	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 399253,

Project ID:

Lab Batch #: 835333

Sample: 590902-1-BLK / BLK

Batch:

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	Control Limits %R	Flags		
Analytes			(D)				
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:

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	Control Limits %R	Flags		
Analytes			[D]	1			
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	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/09/10 10:42	SURROGATE RECOVERY STUDY						
BTE	X by EPÁ 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes	, .		[D]				
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/09/10 13:15	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	0.0290	0.0300	97	80-120				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399253,

**Project ID:** 

Lab Batch #: 834726

Sample: 590506-1-BKS / BKS

Matrix: Solid Batch:

Units: mg/kg	<b>Date Analyzed:</b> 12/06/10 12:50	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod  Analytes		Amount Found	True Amount	Recovery %R	Control Limits %R	Flags		
		[A]	[B]	[D]	/0K			
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						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]	]			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 13	:48 SU	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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:

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	Control Limits %R	Flags		
				[D]				
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 15:42	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			{D}					
1-Chlorooctane	94.4	99.5	95	70-135				
o-Terphenyl	45.7	49.8	92	70-135				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 399253,

Project ID:

Lab Batch #: 834726

Sample: 399253-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 16	5:12 St	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
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:

Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 12/06/10 16:42	SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod  Analytes		Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
A	narytes			12,				
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:

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:

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	Control Limits %R	Flags		
Analytes			[D]				
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:

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		
rinarytes							
1-Chlorooctane	110	100	110	70-135			
o-Terphenyl	49.6	50.0	99	70-135			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution





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  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND ·	0.1000	0.0965	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		BLAN	K/BLANK S	SPIKE / B	LANK S	PIKE DUPI	LICATE :	RECOVE	RYSTUD	Y
DEEN FDA 0021D	Diant	Calles	Diamir	Diank	6.11	Dia-i-	Bul- CI-		Camtral	

											***
BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	· 0.1002	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	<del></del>
o-Xylene	ND	0.1000	0.0894	89	0.1	0.0900	90	1	71-133	35	





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		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPI	LICATE I	RECOVE	ERY STUD	Y	
BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	ND	0.1000	0.1066	107	0.1	0.0955	96	11	70-130	35	<del>                                     </del>
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		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPL	ICATE	RECOVE	ERY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	ND	10.0	10.3	103	10	10.2	102	1	75-125	20	





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

Anions by E300

Sample: 834914-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

	BLAN	K/BLANK	SPIKE / I	BLANK S	SPIKE DUP	LICATE I	RECOVI	ERY STUD	Y	
Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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

Analytes
Chloride

Sample: 590506-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUPI	ICATE I	RECOVE	ERY STUD	<b>Y</b> .	
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Result 1Fl	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				1
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	



## Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 399253

Lab Batch #: 834907

Date Analyzed: 12/06/2010

Project ID:

Date Prepared: 12/06/2010

Analyst: LATCOR

QC- Sample ID: 399244-001 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
Inorganic Anions by EPA 300  Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
Thatyees	ļ	1				
Chloride	ND	212	212	100	75-125	

Lab Batch #: 834914

Date Analyzed: 12/06/2010

**Date Prepared: 12/06/2010** 

**Analyst: LATCOR** 

QC- Sample ID: 399253-003 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	RIX / MA	TRIX SPIKE	RECO	VERY STU	DY
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\*(C-A)/BRelative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



#### Form 3 - M. **MSD** Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 399253

QC- Sample ID: 399255-001 S

Batch #:

Matrix: Soil

Project ID:

Lab Batch ID: 834940 Date Analyzed: 12/07/2010

**Date Prepared:** 12/07/2010

Reporting Units: mg/kg

Analyst: SEE

Reporting Ones. 118 xg		ĮV.	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	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 #:

Matrix: Soil

**Date Analyzed:** 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg		M	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]		[D]	(E)	Result [F]	[G]	76	70K	76KI D	
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



## 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 #:

Matrix: Soil

Date Analyzed: 12/09/2010

**Date Prepared:** 12/08/2010

Analyst:

SEE

Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample Result	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result  F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[C]	76 K [D]	[E]	Result [F]	[G]	70	/68	70KFD	
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 #:

Matrix: Soil

Date Analyzed: 12/07/2010

**Date Prepared:** 12/06/2010

Analyst: BEV

Reporting Units: mg/kg		N	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY	,	
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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)/BRelative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399253

Lab Batch #: 834907

Date Analyzed: 12/06/2010 10:19

Date Prepared: 12/06/2010

**Project ID:** Analyst:LATCOR

Batch #: 1

Matrix: Soil

QC- Sample ID: 399244-001 D

SAMPLE / SAMPLE DUPLICATE RECOVERY

Reporting Units: mg/kg	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	Limits Flag						
Anions by E300	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag						
Analyte		[B]									
Chloride	ND	ND	NC	20	,						

Lab Batch #: 834914

Date Analyzed: 12/06/2010 16:02

Date Prepared: 12/06/2010

Analyst:LATCOR

QC-Sample ID: 399253-003 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	/ SAMPLE	DUPLIC	ATE REC	OVERY
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]	•		
Chloride	ND	ND	NC	20	

Lab Batch #: 834594

Date Analyzed: 12/06/2010 12:55 QC- Sample ID: 399244-001 D

**Percent Moisture** 

Analyte

Date Prepared: 12/06/2010

Analyst: JLG

Batch #:

Matrix: Soil

Reporting Units: %

SAMPLE	SAMPLE	DUPLIC.	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag

5.83

Lab Batch #: 834602

Date Analyzed: 12/06/2010 12:55

Date Prepared: 12/06/2010

5.58

Analyst: JLG

20

QC-Sample ID: 399253-003 D

Batch #: 1

Matrix: Soil

Percent Moisture

Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			ļ
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

# **Environmental Lab of Texas**

#### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

1.77 平均 1.577 金属电影器 网络电影 1.2000 电电影电影电影中心主义 1.67 平均 1.57 电影

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

	Project Manager:	Ben Arguijo															- "	roje	Ct N	ine;	301	1/11/16	III C	IIIOI	1 0	45 L	_aric	urarr	11		
`	Company Name	Basin Environm	nental Ser	vices	Tecnol	ogies, LLC							_				_	F	Proje	ct #:											
	Company Address:	P.O. Box 301				<u> </u>											_	Pro	ject	Loc:	Lea	Cou	nty, l	NM_							
	City/State/Zip:	Lovington, NM 8	88260														_		P	O #:		9	א די	37	•						
	Telephone No:	(575) 396-2378				<del>-</del>	Fax No:		(57	5) 3	96-1	429					, Repo	ort F	orma	ıt:	X	Stand	dard			TRF	RP.	-	☐ NF	PDES	 3
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·		771							<u> </u>	(		<u> </u>										_	Anal	yze F	or:		<del></del>		<u> </u>	1	1
(lab use			]															$oldsymbol{\perp}$			TOT	LP: AL:	+	+-	X					72 hrs	
ORDER	<b>1#</b> : 399253			Т	T	<del>,</del>			_	Pro	eser\	atlo	1 & #	of C	ontair	ners	Matrix	- 1				7	%	T	260					24, 48,	
LAB # (lab use only)	FIEL	.D CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce	HNO <sub>3</sub>	HCI	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> 6 <sub>2</sub> O <sub>3</sub>	Other (Specify)	2 8	TPH 418 1 8015M) RO	1X 1005 XT	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag ta Cd Cr Po Hg Volatiles	Serrivolatiles	<b>EX 8834245068</b> or BTEX 8260	RCI	¥.	CI 5300			
1	VZ C	ell 4 G-1				12/1/10	1100		1	X			$\Box$			L	SOIL	.   >						L	1	Ц		X		L	х
2	VZ C	ell 4 G-2				12/1/10	1055		1	X			$\downarrow$	4		_	SOIL	<u>.</u>	丄	$\sqcup$	$\perp$	$\downarrow$		丄	1	Ц		X	$\bot$	$\perp$	X
3	VZ C	ell 4 G-3				12/1/10	1050		1	-		_	4	$\downarrow$		L	SOIL	<u>.</u>	<u>\</u>	$\perp$ 4	_	_		↓_	1	$\sqcup$	_	X	4	╄	X
4	VZ C	ell 4 G-4				12/1/10	1045	<u> </u>	1	Х		4	4	1		L	SOIL	_	4		_ .	_		╀	X	Ш	_	X	4	_	×
_5_	YZ C	ell 4 G-5				12/1/10	1045	_	1	X		+	4	+	+-	╀	SOIL	4	4		$\dashv$	+	+	+-	X	$\vdash$	4	X	+-	╀	X
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Special I	nstructions:	<del></del>			_			_		Ш			Щ			L_	L		上	Joh	Oret	ory (	Come	nent	Ļ	Щ			Щ		<u></u>
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Relinquist	ged by:	4	Date	Tir /J.H	ne '5	Received by ELC	Musedo	- 1	<u></u>						ló	) ]/2		Tin  : <b> </b>		Ten	pera	iture	Upor	Rec	eipt	2 0	316 —	155	2	•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

Effective Date: 6/1/2010

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

Page 1 of 1

## Prelogin / Nonconformance Report - Sample Log-In

			•		•	·		
Client: BOSIN Enviro	nmental							
Date/Time: 12/3/10			·					
Lab ID#: 30,9253	·		- <u></u>					
Initials:								
		S	ample Receipt Ch	ecki	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container in	good condition?				(es)	No	None	
3. Custody seals intact o		er (c	ooler) and bottles?		Yes	No	N/A	
4. Chain of Custody pres	ent?				(T85)	No		
5. Sample instructions of	omplete on chain o	f cus	stody?		Tes	No		
6. Any missing / extra sa	mples?				Yes	No		
7. Chain of custody sign	ed when relinquish	ed/	received?		Yes	No		•
8. Chain of custody agre	es with sample lab	el(s)	?		THE STATE OF THE S	No	·	
9. Container labels legib	le and intact?				Yes	No		
10. Sample matrix / prop	erties agree with c	nain	of custody?		Yes	No -		
11. Samples in proper co	ontainer / bottle?		**************************************		Yes	No		
12. Samples property pro	eserved?			<u>.</u>	Yes	No	N/A	<del></del>
13. Sample container int	act?			·	Yes	No		
14. Sufficient sample am	ount for indicated	test(	5)?		Yes	No		
15. All samples received	within sufficient h	old ti	me?		(Yes)	No		
16. Subcontract of samp	le(s)?				Yes	No	N/A	
17. VOC sample have ze	ro head space?		· <sub>[-</sub>		Yes	No	NA	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 No	).	Cooler 5 No.	
lbs O°C	lbs	প্	lbs	°C	lbs	°c	lbs	°C
	` ,	lon	conformance Doc	ıma	ntation			
Contact:	Contac			A1110		Data France		
		LEG D	y		<del></del>	Date/Time:_		
Regarding:								
Corrective Action Taken	· <b>:</b>						,	
•					<del></del> .	···		
						<del></del>		
Check all that apply:	Cooling amoust 1		egun shortiy after sam		annot and		matures.	
	condition ac	cept	able by NELAC 5.5.8.3	.1.a.1	•	•	Iemie	
C	Initial and Backup	Ten	perature confirm out o	of terr	perature co	nditions		

Final 1.000

Client understands and would like to proceed with analysis

	·				
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•					
					4.
			·		
·					
	,				
•					

# **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

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)

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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: 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 IdMatrixDate CollectedSample DepthLab Sample IdVZ Cell 5 G-1SDec-01-10 11:10399244-001

### 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

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



Project Id:

#### **Certificate of Analys** ummary 399244

## Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

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

					Project Manager:	Dicili Dailon, II	
·	Lab Id:	399244-001					
Annhain Bananatad	Field Id:	VZ Cell 5 G-1					
Analysis Requested	Depth:						
	Matrix:	SOIL					
	Sampled:	Dec-01-10 11:10					
Anions by E300	Extracted:						· · · · · · · · · · · · · · · · · · ·
Tanions by 2000	Analyzed:	Dec-06-10 10:19					
,	1			,			
Chloride	Units/RL:	mg/kg RL ND 8.90		· · · · · · · · · · · · · · · · · · ·			
BTEX by EPA 8021B	Extracted:	Dec-06-10 14:00					
·	Analyzed:	Dec-07-10 00:27					
<u>, , , , , , , , , , , , , , , , , , , </u>	Units/RL:	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					
Percent Moisture	Extracted:				•		
	Analyzed:	Dec-06-10 12:55					•
'	Units/RL:	% RL				•	•
Percent Moisture		5.58 1.00					
TPH By SW8015 Mod	Extracted:	Dec-07-10 09:00					
,	Analyzed:	Dec-08-10 07:10				·	
	Units/RL:	mg/kg RL		•			
C6-C12 Gasoline Range Hydrocarbons		ND 15.8				P.	
C12-C28 Diesel Range Hydrocarbons		ND 15.8					
C28-C35 Oil Range Hydrocarbons		ND 15.8					
Total TPH		ND 15.8					
			I	I	<u>.                                    </u>		

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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842 Cantwell Lane, Corpus Christi, TX 78408	(361) 884-0371	(361) 884-9116



Project Name: Southern Union Gas Landfarm

'ork Orders: 399244,

Project ID:

Lab Batch #: 834760

Sample: 590531-1-BKS/BKS

Matrix: Solid Batch:

Units; mg/kg	BTEX by EPA 8021B  Amount Found [A]  Amount Found [B]  Analytes  Analytes  Analytes  Analytes  Amount Found [B]  Anount Found [B]  Anount Recovery %R %R [D]  No.0308  0.0300  103  80-120					
вте	X by EPA 8021B	Found	Amount		Limits	Flags
	Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 12/06/10 16:18	SURROGATE RECOVERY STUDY										
втех	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags						
	Analytes		•	[D]								
1,4-Difluorobenzene		0.0272	0.0300	91	80-120							

0.0306

4-Bromofluorobenzene Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch:

Matrix: Solid

102

80-120

0.0300

Units: mg/kg	Date Analyzed: 12/06/10 16:41	SU	SURROGATE RECOVERY STUDY				
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			[D]			
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:

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	Control Limits %R	Flags		
Analytes			[D]				
I,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	4 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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
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:

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	Control Limits %R	Flags	
Analytes		, ,	[D]			
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:

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	00.0	72	70.125		
1-Ciliotooctane	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: 399335-001 S / MS

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 18:	21 SU	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			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399244,

Project ID:

Lab Batch #: 834654

Sample: 399335-001 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/06/10 18:40	SURROGATE RECOVERY STUDY				
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	[A]	[10]	[D]	/••	
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:

Matrix: Solid

Units:	mg/kg
--------	-------

Date Analyzed: 12/08/10 04:17

SURROGATE RECOVERY STUDY Control Amount True **TPH By SW8015 Mod** Recovery Limits Flags Found Amount %R %R [A] [B] |D|Analytes 1-Chlorooctane 108 100 108 70-135 o-Terphenyl 48.0 50.1 70-135

Lab Batch #: 834957

Sample: 590643-1-BSD / BSD

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 12/08/10 04:46	SURROGATE RECOVERY STUDY					
ТРН	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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/08/10 05:15	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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 SU	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			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 399244,

Project ID:

Lab Batch #: 834957

Sample: 399541-003 S / MS

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/08/10 08:38	su su	RROGATE R	ECOVERY	%R %R [D] 95 70-135	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Limits	Flags
Analytes	, ,	'	[D]		
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	SU	RROGATE R	ECOVERY S	STUDY	
ТРН	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 Recovery [D] = 100 \* A / BAll results are based on MDL and validated for QC purposes.

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution





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  Analytes	Blank Sample Result {A}	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	. ND	0.1000	0.0924	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	Blank Spike Result	Blank Spike %R	Spike Added	Biank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
Chloride	ND	10.0	10.3	103	10	10.2	102	1	75-125	20	





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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	,	[B]	[C]	[D]	[E]	Result [F]	[G]				
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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag	
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]			,		
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	<u> </u>	



# 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

Project ID:

Date Prepared: 12/06/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

MATRIX / MATRIX SPIKE RECOVERY STUDY										
Parent Sample Result	Spike Added	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag					
[A]	[B]	1								
ND	212	212	100	75-125						
	Parent Sample Result [A]	Parent Sample Spike Result Added [A] [B]	Parent Spiked Sample Spiked Result Added [C]	Parent Sample Spiked Sample Result Added [C] [D]	Parent Sample Result Added A [B] Spiked Sample Result Result [C] Spiked Sample Result Result [C] Spiked Sample Result [D] WR WR					

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

· Below Reporting Limit



#### Form 3 - MS / MSD Recoveries

Project Name: Southern Union Gas Landfarm

Work Order #: 399244

**QC-Sample ID:** 399251-001 S

Batch #:

Matrix: Soil

Project ID:

Lab Batch ID: 834760 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	Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result  F	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag		
Analytes	[A]	[B]		{ <b>D</b> ]	[E]	i Result [F]	[G]	/*	/ <b>U</b> K	/(ICI D			
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

Date Analyzed: 12/06/2010

**QC- Sample ID:** 399335-001 S

Batch #:

Matrix: Soil

Date Prepared: 12/06/2010

Analyst: BEV

Reporting Units: mg/kg	M	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag	
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD		
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

**Date Analyzed:** 12/08/2010

**QC- Sample ID:** 399541-003 S

Batch #:

Matrix: Soil

Date Prepared: 12/07/2010

Analyst: BEV

Reporting Units: mg/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY												
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag			
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD				
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\*(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

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## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399244

Lab Batch #: 834907

**Date Prepared:** 12/06/2010

**Project ID:** 

Date Analyzed: 12/06/2010 10:19

Analyst:LATCOR Matrix: Soil

QC- Sample ID: 399244-001 D

Batch #: 1 SAMPLE / SAMPLE DUPLICATE RECOVERY

Reporting Units: mg/kg	SAMPLE /	SAMPLE DUPLICATE RECOVERY							
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
Chloride	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 #:

Matrix: Soil

Reporting Units: %	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY										
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag							
Analyte		{ <b>B</b> }										
Percent Moisture	5.58	5.83	4	20								

# Page 16 of

# **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.	Den Arguno															-		Ojec	LITA	-	Jour	1161	. 01	1011	Gas	Lai	luia			
•	Company Name	Basin Enviro	onmental Se	rvices	Techno	ologies, LLC											_		Pi	rojec	t#:_						· · · · · · · · · · · · · · · · · · ·				
	Company Address:	P.O. Box 301	1												<del>-</del>		_	1	Proje	ect L	.oc:_	Lea C	oun	ty, N	М						
	City/State/Zip:	Lovington, N	IM 88260																	P	) #:_		91	78	7						
	Telephone No:	(575) 396-237	78				Fax No:		(57	5) 39	96-1	429					F	Repor	t Fo	rmat	. [	X s	tanda	ard	•	_ T	RRP			NPDE:	s
	Sampler Signature:		1/2/20				e-mail:		pn	n@	ba	sine	env	.coı	m	_	_														
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ORDE	700 0	l							1	Pre	serv	ation	18#	of Co	ontair	ners	I M	atrix				TOTAL		$\Box$	-	X				48, 72 hrs	l
LAB # (lab use only)		LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		2,			Nacs-O.		(Specify)	- Drinking water St. = Studg	GW = Groundwater 5 = Soil/Soil 9	121	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity) SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolaties	<b>PTEX 802 18/50/30</b> or BTEX 8260	N.O.R.M.	CI- F 300		×	
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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: PEBNENVIVCAIMENTAL		·		•
Date/Time:  2/3/10 1:45				
Lab ID#: 399 244				
Initials: XIV				
Sample Receipt Ch	necklist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(Tes	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	TES	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 property 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 O °C lbs °C lbs	°C lbs	°C	lbs	°c
Nonconformance Doc	umentation			
Contacted by:		Date/Time:		— <del></del>
Regarding:				
Corrective Action Taken:				
Check all that apply: □ Cooling process has begun shortly after sam condition acceptable by NELAC 5.5.8.3 □ Initial and Backup Temperature confirm out of	.1.a.1.	_	rature	

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□ 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



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)

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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: 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	<b>Date Collected</b>	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

#### Sample receipt non conformances and Comments:

None

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



Project Id:

Contact: Rose Slade

# Certificate of Analys Summary 399245

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 13-DEC-10

Project Location: Lea County, NM Project Manager: Brent Barron, II Lab Id: 399245-001 399245-002 Field Id: VZ Cell 6 G-1 VZ Cell 6 G-2 Analysis Requested Denth:

	Depth:						•
	Matrix:	SOIL	SOIL				
<del>.</del>	Sampled:	Dec-01-10 11:20	Dec-01-10 11:25				
Anions by E300	Extracted:						
	Analyzed:	Dec-06-10 10:19	Dec-06-10 10:19				·
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		ND 4.47	37.0 9.11				
BTEX by EPA 8021B	Extracted:	Dec-06-10 14:00	Dec-06-10 14:00				
	Analyzed:	Dec-07-10 00:50	Dec-07-10 01:14				·
·	Units/RL:	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				
Percent Moisture	Extracted:						
	Analyzed:	Dec-06-10 12:55	Dec-06-10 12:55 .				
	Units/RL:	. % RL	% RL			-	
Percent Moisture	-	6.00 1.00	7.75 1.00				
TPH By SW8015 Mod	Extracted:	Dec-07-10 09:00	Dec-07-10 09:00				
	Analyzed:	Dec-08-10 07:39	Dec-08-10 08:07				
	Units/RL:	mg/kg RL	mg/kg RL	,			
C6-C12 Gasoline Range Hydrocarbons	•	ND 16.0	ND 16.2			1	
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 Laboratorics 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



Project Name: Southern Union Gas Landfarm

/ork Orders: 399245,

Lab Batch #: 834760

**Sample:** 590531-1-BKS / BKS

Project ID:

Matrix: Solid Batch:

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	Control Limits %R	Flags						
Analytes	r-3	(2)	[D]	'**							
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			[D]				
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 EP	A 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analyt	es			[D]				
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:

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			[D]				
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		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



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 RECOVERT STUDY						
BTEX	by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	• •	, ,	[D]		
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:

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	Control Limits %R	Flags	
Analytes			[D]			
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	SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			(D)		
I-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:

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:

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		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Batch:

'ork Orders: 399245,

Sample: 399335-001 S / MS

Project ID:

Lab Batch #: 834654

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	Control Limits %R	Flags	
Analytes			[D]			
1-Chlorooctane	70.3	99.5	71	70-135		
o-Terphenyl	37.4	49.8	75	70-135		

Lab Batch #: 834654

TPH By SW8015 Mod

Analytes -

Sample: 399335-001 SD / MSD

Batch: 1

Matrix: Soil

Units: mg/kg

1-Chlorooctane

Date Analyzed: 12/06/10 18:40

SURROGATE RECOVERY STUDY Amount True Control Found Amount Recovery Limits Flags %R [A] [B] %R [D] 71.3 100

71

.77

70-135

70-135

o-Terphenyl Lab Batch #: 834957

**Sample:** 590643-1-BKS/BKS

Batch:

38.7

Matrix: Solid

50.1

Units: mg/kg Date Analyzed: 12/08/10 04:17	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes		•	[D]				
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/08/10 04:46	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes			[D]				
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/08/10 05:15	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes ·	i (**)	127	[D]	/••						
1-Chlorooctane .	112	99.5	113	70-135						
o-Terphenyl	53.8	49.8	108	70-135						

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 399245,

Project ID:

Lab Batch #: 834957

Sample: 399245-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/08/10 07:39	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes		'	[ <b>D</b> ]							
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/08/10 08:07	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]	:					
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:

Matrix: Soil

Units: mg/kg

/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					
	Analytes	95.6	101	95	70-135						
		41.4	50.3	82	70-135						

Lab Batch #: 834957

1-Chlorooctane o-Terphenyl

Sample: 399541-003 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/08/10 09:08	SURROGATE RECOVERY STUDY									
TPH By SW8015 Mod	Amount Found	True Amount [B]	Recovery %R	Control Limits %R	Flags					
Analytes	,	ļ	[D]							
1-Chlorooctane	94.9	100	95	70-135						
o-Terphenyl	39.8	50.1	79	70-135						

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## BS / BSD 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

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg

BTEX by EPA 8021B	Blank Sample Result [A]		Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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]	Sample Result Added Spike Spike Added Spike Dup. RPD Limits Limits Fl									
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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		Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[ <b>D</b> ]	[E]	Result [F]	[G]				l
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

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg Blk. Spk Spike Blank Blank Blank Control **Control** TPH By SW8015 Mod Blank Spike Spike Dup. RPD Limits Limits Flag Sample Result Added Spike Spike Added %R %R %R %RPD Result Duplicate % A [D]Result [F] |G|[B] [C] [E]Analytes C6-C12 Gasoline Range Hydrocarbons 70-135 86 1010 841 83 2 35 ND 1000 860 C12-C28 Diesel Range Hydrocarbons ND 1000 852 85 1010 842 83 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 **QC- Sample ID:** 399244-001 S

Project ID:

**Date Prepared:** 12/06/2010

Analyst: LATCOR

Batch #:

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\*(C-A)/BRelative Percent Difference [E] = 200\*(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 #:

Matrix: Soil

Date Analyzed: 12/06/2010

**Date Prepared:** 12/06/2010

SEE

Analyst:

Reporting Units: mg/kg		M	ATRIX SPIK	E / MATRIX SI	PIKE DUPLICA	TE RECO	VERY S	TUDY
	Dayant			6-111	Destinate	6-114		C41

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 #:

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	Parent Sample Result	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	70	% <b>K</b>	%RPD	
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 #:

Matrix: Soil

**Date Analyzed: 12/08/2010** 

**Date Prepared:** 12/07/2010

Analyst: BEV

Reporting Units: mg/kg		M	ATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		·
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %R	- •	Duplicate Spiked Sample Result  F	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%K [D]	Added [E]	Result [F]	%K [G]	70	70K	70KPD	
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\*(C-A)/B Relative Percent Difference RPD = 200\*|(C-F)/(C+F)| Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399245

Lab Batch #: 834907

Date Analyzed: 12/06/2010 10:19

Anions by E300

Analyte

Project ID:

Date Prepared: 12/06/2010

Analyst: LATCOR

QC- Sample ID: 399244-001 D

Batch #: 1 Matrix: Soil

Reporting Units: mg/kg

Chloride

 SAMPLE	SAMPLE	DUPLIC	ATE REC	OVERY
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
NID	110	110	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 #:

Matrix: Soil

Reporting Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
Percent Moisture	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]	 		
Percent Moisture	5.58	5.83	4	20	

# **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													<u>.</u>	_	P	ojec	t Na	me:	So	<u>uthe</u>	<u>ern</u>	Unic	n (	}as	Lar	ndfa	rm		
	Company Name	Basin Environme	ntal Consul	ting, LL	С				_							_		P	ojec	ct #:											
	Company Address:	P.O. Box 381														_		Proj	ect L	Loc:	Lea	Col	ınty	, NM							
	City/State/Zip:	Lovington, NM 88	260													_			P	0 #:			91	78	<b>Z</b> _						
	Telephone No:	(575)396-2378				Fax No:	:	<u>(57</u>	5) 3	96-1	429					_	Repo	rt Fo	rma	t:	X	Stan	ıdarı	d	Γ	] TF	RRP			NPDES	s
	Sampler Signature:	5/1	20	_		e-mail:	:	pr	n@	)ba	sin	en	/.CC	<u>m</u>																	_
(lab use	only)		) ]			-												F			TC	LP:	Ana	alyze	For:	T	$\overline{}$	T	П	72 hrs	1
ORDER	* 39924 <b>5</b>	•							Pr	eser	vatio	n &	# of (	Contai	ners	IN	<b>Natrix</b>	-			TOT	-+	-	$\mp$	-	_				8,	
LAB # (lab use only)		D CODE	Beginning Death	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers		63			NaOH		(Specify)	ater St. » Sludg	GW - Groundwater S. Soll/Sol		TPH: TX 1005 TX 1006	Cations (Ca, Mg. Na, K)	Anions (Cl, SO4, Alkalinity)	SAR/ESP/CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Settingulariles	RCI	N.O.R.M.	CI - E 300	<b>X</b>	RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
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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: Patin Environmental		•		
Date/Time:  2/3/10 1:45				
Lab ID#: 399245				
Initials: XIY				
Sample Receipt Ch	ecklist			, 
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(Fes )	No_	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	(FBS)	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)?	TE	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.	
ibs O°C ibs °C ibs	°C lbs	°C	lbs	°c
Nonconformance Doc	umentation			
Contact:Contacted by:		Date/Time:		
		<b></b>		<del></del>
Regarding:			·	
	·			
Corrective Action Taken:				
				·
Check all that apply:   Cooling process has begun shortly after san condition acceptable by NELAC 5.5.8.3	npling event and o	ut of tempe	rature	

•

☐ 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 (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)

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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)





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

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## **Sample Cross Reference 399254**



## Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matr	rix Date Collected	Sample Depth	Lab Sample Id
VZ Cell 7 G-1	. <b>S</b>	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

Sample receipt non conformances and Comments:

None

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-834726 TPH By SW8015 Mod



# Certificate of Analys Summary 399254

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Id:

Project Location: Lea County, NM

Contact: Rose Slade

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.

					rroject Manager:	Bruit Burron, 11	
	Lab Id:	399254-001					
Anglusia Daguaria	Field Id:	VZ Cell 7 G-1				ļ	
Analysis Requested	Depth:						
	Matrix:	SOIL					İ
	Sampled:	Dec-01-10 12:55					
Anions by E300							
Aillous by £300	Extracted:	~ ^				Ì	
	Analyzed:	Dec-06-10 16:02		~			
	Units/RL:	mg/kg RL					
Chloride .		ND 4.51					
BTEX by EPA 8021B	Extracted:	Dec-07-10 15:00					
	Analyzed:	Dec-08-10 03:55					
	Units/RL:	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					
Percent Moisture	Extracted:						
,	Analyzed:	Dec-06-10 12:55	·				
	Units/RL:	% RL				,	
Percent Moisture	•	6.88 1.00					
TPH By SW8015 Mod	Extracted:	Dec-06-10 10:00					
	Analyzed:	Dec-06-10 17:41					<u> </u>
	Units/RL:	mg/kg RL	•				
C6-C12 Gasoline Range Hydrocarbons		ND 16.2					<del></del>
C12-C28 Diesel Range Hydrocarbons		ND 16.2					
C28-C35 Oil Range Hydrocarbons		ND 16.2					
Total TPH		ND 16.2	_	-			
					<del></del>		

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 Laboratorics 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



Project Name: Southern Union Gas Landfarm

'ork Orders: 399254,

Project ID:

Lab Batch #: 834940

**Sample:** 590617-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 1	5:51 SU	RROGATE	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	<i>;</i>		[D]		
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

Units: mg/kg Date Analyzed: 12/07/10 10:25	50	mooning n	DOO I DIGIT I	01021	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	. []	(5)	[D]	/•••	
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	SU	RROGATE RI	ECOVERY S	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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 18:19	SU	RROGATERI	ECOVERY S	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					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 12:5	0 SL	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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes			[D]						
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: 399254-001 / SMP

Batch: 1

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 17:41	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	89.2	101	88	70-135				
o-Terphenyl	43.4	50.3	86	70-135				

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Vork Orders: 399254,

Lab Batch #: 834726

Sample: 399258-005 S / MS

**Project ID:** 

Batch:

Matrix: Soil

Units: mg/kg	SURROGATE RECOVERY STUDY								
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]					
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	Control Limits %R	Flags				
Analytes			[D]						
1-Chlorooctane	110	100	· 110	70-135					
o-Terphenyl	49.6	, 50.0	99	70-135					

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

Il 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

BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Biank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
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										
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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 / BSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399254

Analyst: BEV

Lab Batch ID: 834726

Date Prepared: 12/06/2010

**Project ID:** 

Date Analyzed: 12/06/2010

Sample: 590506-1-BKS

Batch #: 1

Matrix: Solid

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg

TPH By SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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

Project ID:

**Date Analyzed:** 12/06/2010

Date Prepared: 12/06/2010

Analyst: LATCOR

QC- Sample ID: 399253-003 S

Batch #:

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

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries





Work Order #: 399254

Project ID:

Lab Batch ID: 834940

QC- Sample ID: 399255-001 S

Batch #:

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	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD %	Control Limits %R	Control Limits %RPD	Flag
	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	76	76K	70KFD	
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 #:

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	Spike Added	Spiked Sample Result	Sampte		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits %RPD	Flag
Analytes	[A]	[B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R ·	70KFD	
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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399254

Lab Batch #: 834914

Project ID:

Date Analyzed: 12/06/2010 16:02

**Date Prepared:** 12/06/2010

Analyst: LATCOR

QC- Sample ID: 399253-003 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY							
Anions by E30	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag				
Analyte		[2]							
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

Reporting Units: 70	SAMIFLE / SAMIFLE DUILICATE RECOVERT							
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag			
Analyte	'	[B]			·			
Percent Moisture	9.60	10.8	11	20				

# **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				-										_		Pr	ojec	t Na	me:	So	uth	ern	<u>Un</u>	ion	Ga	s La	ndfa	ırm		
	Company Name	Basin Environmental	Services	Techn	ologies, LLC														P	roje	:t #:	_										
	Company Address:	P.O. Box 301									1,2					_		ı	Proj	ect l	.oc:	Lea	a Co	unt	y, NA	И						
	City/State/Zip:	Lovington, NM 88260																		P	0 #:		(	<b>4</b> 0	78	7						
	Telephone No:	(575) 396-2378				Fax No:		<u>(5</u>	75) :	396-	1429	9					R	epor	t Fo	rma	t:	X	Sta	ndar	rd	•	П т	RRF	,		NPDE	ES
	Sampler Signature:	Alm		_		e-mail:	:	<u>p</u>	m@	<u>Dba</u>	sir	nen	v.c	om														/-				
(lab use	only)																	_					CLP:	An	nalyz	e Fo	ж: 	一	$\overline{\top}$	П	$\exists$	
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AB # (lab use only)		_D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Total #. of Containers	ce	HNO3	HCI	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None		- Drinking Water	OW = Oroundwater 5=50if50i		TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	CHEK GUZTBIJGGG CH BTEX 8260	NORM	CI- E 300			Standard TAT 4 DAY
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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 PXTSAEnvironmental		•		
Date/Time: 12/3/10 1:45				
Lab ID#: 399254				
Initials: AM				
Sample Receipt Checki	ist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	TES	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)?	TES	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	) <b>.</b>	Cooler 5 No.	·
ibs O°C ibs °C ibs °C	lbs	°c	lbs	°C
Nonconformance Docume	ntation			
Contact:Contacted by:	<del></del>	Date/Time:_		
Regarding:				<del></del>
Corrective Action Taken:				
			<del></del>	
	<del></del>			
Check all that apply:   Cooling process has begun shortly after sampling condition acceptable by NELAC 5.5.8.3.1.a.1  Initial and Backup Temperature confirm out of tem  Client understands and would like to proceed with	nperature co	•	rature	

Final 1.000

# **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):

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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

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.



Project Id:

Project Location: Lea County, NM

# Certificate of Analys Jummary 399246

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Contact: Rose Slade

Date Received in Lab: Fri Dec-03-10 01:45 am

Report Date: 13-DEC-10

Project Manager: Brent Barron, II

					Project Manager:	Dieni Bailon, II	
	Lab Id:	399246-001	399246-002				
Analysis Requested	Field Id:	VZ Cell 8 G-1	VZ Cell 8 G-2				
Analysis Requested	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Dec-01-10 12:40	Dec-01-10 12:45				
Anions by E300	Extracted:						
	Analyzed:	Dec-06-10 10:19	Dec-06-10 10:19				
	Units/RL:	mg/kg RL	mg/kg RL				
Chloride		27.6 9.16	12.3 9.00				
BTEX by EPA 8021B	Extracted:	Dec-07-10 13:50	Dec-06-10 14:00				<u> </u>
	Analyzed:	Dec-08-10 01:39	Dec-07-10 02:00				
·	Units/RL:	mg/kg RL	mg/kg RL	<del>-</del>			
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				
Percent Moisture	Extracted:						
	Analyzed:	Dec-06-10 12:55	Dec-06-10 12:55				
	Units/RL:	% RL	% RL				
Percent Moisture		8.27 1.00	6.70 1.00				
TPH By SW8015 Mod	Extracted:	Dec-06-10 08:20	Dec-06-10 08:20				
	Analyzed:	Dec-06-10 13:57	Dec-06-10 14:15		•		
	Units/RL:	mg/kg RL	mg/kg RL	٠.,			
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.

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

Brent Barron, II Odessa Laboratory Manager

Final 1.000



### **Flagging Criteria**

- X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to 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



Project Name: Southern Union Gas Landfarm

'ork Orders: 399246,

**Project ID:** 

Lab Batch #: 834760

Sample: 590531-1-BKS/BKS

Batch:

Matrix: Solid

BTEX by EPA 8021B  Analytes  4-Difluorobenzene	Date Analyzed: 12/06/10 15:08	SURROGATE RECOVERY STUDY								
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes	• • •		[D]						
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 16:18	SU	RROGATE RI	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		. ,	[D]		
1,4-Difluorobenzene	0.0272	0.0300	91	80-120	

0.0306

4-Bromofluorobenzene Lab Batch #: 834760

Sample: 590531-1-BSD / BSD

Batch:

Matrix: Solid

102

80-120

0.0300

Units: mg/kg	Date Analyzed: 12/06/10 16:41	SURROGATE RECOVERY STUDY										
втех	K 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	<b>Date Analyzed:</b> 12/06/10 17:51	SURROGATE RECOVERY STUDY									
вте	X 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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 18:14	SU	RROGATE RI	ECOVERY	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



# Project Name: Southern Union Gas Landfarm

Work Orders: 399246,

**Project ID:** 

Lab Batch #: 834760

Sample: 399246-002 / SMP

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/07/10 02:00	SURROGATE RECOVERY STUDY									
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			[D]							
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	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I,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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 16:21	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	Pate Analyzed: 12/07/10 17:26	SU	RROGATE R	ECOVERY	STUDY	
BTEX by	EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Ana	lytes		•	[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 18:09	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		·
1,4-Difluorobenzene	0.0262	0.0300	87	80-120	
4-Bromofluorobenzene	0.0315	0.0300	105	80-120	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399246,

Project ID: `

Lab Batch #: 834972

Sample: 399258-001 SD / MSD

Matrix: Soil Batch:

Units; mg/kg	Date Analyzed: 12/07/10 18:30	SU	RROGATE R	ECOVERY	STUDY	
вте	X 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: 399246-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyze	ed: 12/08/10 01:39	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021	В	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes				[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed	: 12/06/10 10:51	SU	RROGATE R	ECOVERY S	STUDY	
TPH By SW8015 Mod Analytes	1	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	SU	RROGATE R	ECOVERY :	STUDY	
ТРН В	sy SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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	SU	RROGATE R	ECOVERY :	STUDY	
	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	

<sup>\*</sup> Surrogate outside of Laboratory QC limits . .

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Work Orders: 399246,

Project ID:

Lab Batch #: 834654

Sample: 399246-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 13:5	7 SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

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	Control Limits %R	Flags	
Analytes	· -		[D]			
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 18:2	1 SU	RROGATE R	ECOVERY	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	8:40 St	RROGATE R	ECOVERY	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 Recovery [D] = 100 \* A / B

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution







Project Name: Southern Union Gas Landfarm

Work Order #: 399246

Analyst: SEE Lab Batch ID: 834760 Date Prepared: 12/06/2010

**Project ID:** 

Date Analyzed: 12/06/2010

Batch #: 1

Matrix: Solid

Units: mg/kg

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

BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added	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	0.0924	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

Sample: 590531-1-BKS

Batch #: 1

Matrix: Solid

Units:	mg/kg
--------	-------

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

BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Bik. 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 #: 399246

Lab Batch #: 834907

**Date Analyzed:** 12/06/2010 **QC- Sample ID:** 399244-001 S

Project ID:

**Date Prepared:** 12/06/2010

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	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\*(C-A)/BRelative Percent Difference [E] = 200\*(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 #:

Matrix: Soil

Date Analyzed: 12/06/2010

**Date Prepared:** 12/06/2010

Penarting United marka

SEE Analyst:

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY											
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	•	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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 #:

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	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup. %R	RPD	Control Limits %R	Control Limits %RPD	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%K [G]	70	76 <b>K</b>	%KPD	
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







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 SP

MATRIX SPIKE / N	1ATRIX SPIKE	DUPLICATE	RECOVERY STUDY

	MATRIA STIRE / MATRIA STIRE DUTLICATE RECOVERT STUDI										
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Sample	-	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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)/BRelative Percent Difference RPD = 200\*(C-F)/(C+F) Matrix Spike Duplicate Percent Recovery [G] = 100\*(F-A)/E



### **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399246

Lab Batch #: 834907

**Project ID:** 

Analyst: LATCOR

Date Analyzed: 12/06/2010 10:19 QC- Sample ID: 399244-001 D

Date Prepared: 12/06/2010 Batch #: 1

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: mg/kg

Reporting Units: mg/kg	SAWII LE	SAMILLE	DUILIC	AIL KEC	OVEKI
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
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 #:

Matrix: Soil

SAMPLE / SAMPLE DUPLICATE RECOVERY Reporting Units: %

	511111221	0.1	~ 0. 2.0.		0 , 2111
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte	l lat	[B]		,,,,,	
Percent Moisture	5.58	5.83	4 ~	20	

# **Environmental Lab of Texas**

#### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

12600 West I-20 East Odessa, Texas 79765

TOWARD THE STATE OF THE STATE O

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

	Project Manager:	Ben Arguijo														_		Pro	ject	Nan	ne:	<u> 501</u>	utne	ern	Uni	on	Gas	s La	inara	11111			
	Company Name	Basin Environmenta	I Services	Techn	ologies, LLC			_			<del></del>								Pr	oject	#:_									NP TAT (Pre-Schedule) 24 48 72 hrs		_	
	Company Address:	P.O. Box 301			· •		_									_		P	roje	ct L	oc: <u>I</u>	Lea	Cou	inty	, NM								
	City/State/Zip:	Lovington, NM 88260	0		·															PO	#:_			91	7.8	37							
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ORDER	x#: 39924 <b>6</b>				•				Pr	eser	vatic	on & ,	f of	Conta	ainei	rs	Mat	lrix	88		Т	TOT	-	<u>"</u>	+	_	X 8					<b>å</b> [	
LAB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	ke	HNO <sub>3</sub>	HCI	H <sub>2</sub> SO <sub>4</sub>	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	Norte		OW = Groundwater S=Soll/Sol	· × 1	TPH: 418.1 (8015M) 801	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (CI, SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 & BTEX 8260	RCI NO DE	N.O.K.M.	ا ا		RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
	VZ C	ell 8 G-1			12/1/10	1240		_	х							1	so	IL	X							ight  ceil	I	ightharpoons	X		$\square$	$\dashv$	X
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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 Enviro	_					
Date/Time: 12/3/10	1:45	·				
Lab ID#: 399246	·····					
Initials: $\mathcal{S}^{\mathcal{N}}$						
		Sample Receipt Ch	ecklist	•		
1. Samples on ice?			Blue	Water	No	
2. Shipping container in	good condition?	-	(es)	No	None	
3. Custody seals intact o		(cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody pres			TES	No		
5. Sample instructions of	omplete on chain of c	ustody?	Tes	No		
6. Any missing / extra sa	mples?		Yes	No		
7. Chain of custody sign		/ received?	Yes	No		
8. Chain of custody agre	es with sample label(	s)?	TEST	No		
9. Container labels legib	le and intact?		Yes	No		
10. Sample matrix / prop	erties agree with cha	in of custody?	Yes	No		
11. Samples in proper co	ontainer / bottle?		Yes	No		
12. Samples property pri	eserved?		Yes	No	NA	
13. Sample container int	act?		Yes	No		
14. Sufficient sample am	nount for indicated tes	st(s)?	(Yes)	No		
15. All samples received	l within sufficient hole	d time?	Yes	No		
16. Subcontract of samp	xle(s)?	,	Yes	No	NA	
17. VOC sample have ze	ro head space?		Yes	No	NA	
18. Cooler 1 No.	Cooler 2 No.	Cooler 3 No.	Cooler 4 N	lo.	Cooler 5 No.	
lbs O °c	lbs	°C lbs	°C lbs	٥	lbs	°C
•	No	nconformance Doc	umentation			
Contact:	Contacte			Date/Time:		
	Onlacte	u by	<del></del>	Date/Time.		
Regarding:						
Corrective Action Taker	n:					
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Uneck all that apply:		s begun shortly after samentable by NELAC 5.5.8.3		out of tempe	erature	

□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



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: 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

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 399247**



# Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matrix	Date Collected Sa	mple Depth	Lab Sample Id
VZ Cell 9 G-1	· <b>S</b>	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

Sample receipt non conformances and Comments:

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 Analys Summary 399247

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Contact: Rose Slade

Project Id:

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

	<del></del>							1 Toject Ma	mager.	Dient Barton,		
	Lab Id:	399247-0	001	399247-0	002	399247-0	003	399247-0	004	399247-0	005	
Analysis Requested	Field Id:	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	
Anatysis Kequesteu	Depth:											·
	Matrix:	SOIL		SOIL		SOIL		SOIL	,	SOIL		
	Sampled:	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	
Anions by E300	Extracted:											
	Analyzed:	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	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	•
Chloride	<u>'</u>	ND	9.77	18.3	9.06	9.90	9.36	10.1	4.36	ND	4.70	
BTEX by EPA 8021B	Extracted:	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	
·	Analyzed:	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	
	Units/RL:	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		0.0011	
Total BTEX		ND	0.0012	ND	0.0011	ND	0.0011	ND	0.0010	ND	0.0011	
Percent Moisture	Extracted:											
	Analyzed:	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	
·	Units/RL:	%	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	
TPH By SW8015 Mod	Extracted:	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	
·	Analyzed:	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	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	
C6-C12 Gasoline Range Hydrocarbons		ND	17.5	ND	16.2	ND	16.7	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.

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
- POL Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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Project Name: Southern Union Gas Landfarm

Vork Orders: 399247,

Sample: 590531-1-BKS / BKS

Project 1D:

Lab Batch #: 834760

Matrix: Solid Batch:

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 Amount Control True Found Recovery Flags Amount Limits [A] [B] %R %R [D]

91

102

80-120

80-120

4-Bromofluorobenzene Lab Batch #: 834760

1,4-Difluorobenzene

BTEX by EPA 8021B

**Analytes** 

Sample: 590531-1-BSD / BSD

Batch:

0.0272

0.0306

Matrix: Solid

0.0300

0.0300

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:

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					
I,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	Control Limits %R	Flags		
Analytes			[D]		٠.		
1,4-Difluorobenzene	0.0308	0.0300	103	80-120			
4-Bromofluorobenzene	0.0344	0.0300	115	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Work Orders: 399247,

Project ID:

Lab Batch #: 834760

Sample: 399247-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/06/10 21:20	SU	RROGATE R	RECOVERY	STUDY	_
ВТЕ	X by EPA 8021B	Amount Found {A}	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

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	Control Limits %R	Flags				
Analytes	, ,		[D]						
I,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:

Matrix: Soil

Units: mg/kg

⁄kg	Date Analyzed: 12/06/10 22:07	Su	RRUGATE R	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]	·	
e		0.0268	0.0300	89	80-120	

Lab Batch #: 834760

1,4-Difluorobenzene 4-Bromofluorobenzene

Sample: 399247-004 / SMP

Batch:

Matrix: Soil

106

80-120

0.0300

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	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0269	0.0300	90	80-120			
4-Bromofluorobenzene	0.0317	0.0300	106	80-120			

0.0318

Lab Batch #: 834760

Sample: 399247-005 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 00:04	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		
			89			
4-Bromofluorobenzene	0.0320	0.0300	107	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

<sup>7</sup>ork Orders: 399247,

**Project ID:** 

Lab Batch #: 834654

Sample: 590471-1-BKS/BKS

Matrix: Solid

Units: mg/kg	Date Analyzed: 12/06/10 10:51	Date Analyzed: 12/06/10 10:51 SURROGATE RECOVERY STUDY				
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery	Control Limits %R	Flags
	Analytes			[D]		
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

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 11:10	SU	SURROGATE RECOVERY STUDY						
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
Analytes			[D]					
I-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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 11:28 SURROGATE RECOVERY S					STUDY	
ТРН В	y SW8015 Mod	· Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
•	Analytes		. ,	[D]		·
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 14:33	SU	RROGATE RI	ECOVERY S	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R  D]	Control Limits %R	Flags
Analytes			,	·	
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		
I-Chlorooctane	71.9	100	72	70-135			
o-Terphenyl	36.3	50.1	72	70-135			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Work Orders: 399247,

**Project ID:** 

Lab Batch #: 834654

Sample: 399247-003 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 1:	5:30 SL	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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:

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
<u> </u>					
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:

Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 12/06/10 16:07	SURROGATE RECOVERY STUDY					
ТРН В	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
	Analytes			{D}			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 18:21 SURROGATE RECOVERY STUDY			STUDY		
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			· [D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 18:40 SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	( <u>1</u>	,	[ <b>D</b> ]		
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



# **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

	BLAN	K/BLANK S	SPIKE / E	SLANK S	SPIKE DUPL	ICATE .	RECOVE	RY STUD	Y	
sult	Spike Added	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	

BTEX by EPA 8021B  Analytes	Blank Sample Result [A]	Spike Added	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	0.0924	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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blauk 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	

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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Bik. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analytes		[B]	[C]	{ <b>D</b> }	[E]	Result [F]	[G]							
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				



### Form 3 - MS Recoveries

Project Name: Southern Union Gas Landfarm



Work Order #: 399247

Lab Batch #: 834907

**∠ate Analyzed:** 12/06/2010 **QC- Sample ID:** 399244-001 S

Project ID:

Date Prepared: 12/06/2010

Analyst: LATCOR

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATI	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		212	212	100	75-125								

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

P- - 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 #:

Matrix: Soil

Date Analyzed: 12/06/2010

**Date Prepared:** 12/06/2010

Analyst: SEE

Departing United malles

	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
Parent Sample Result	Spike Added	Spiked Sample Result [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Fiag				
[A]	[B]		[D]	[E]		[G]								
ND	0.1116	0.0945	85	0.1114	0.0896	80	5	70-130	35					
ND	0.1116	0.0951	85	0.1114	0.0839	75	13	70-130	35					
ND	0.1116	0.1014	91	0.1114	0.0851	76	17	71-129	35					
ND	0.2232	0.2026	91	0.2228	0.1786	80	13	70-135	35					
ND	0.1116	0.0999	90	0.1114	0.0872	78	14	71-133	. 35					
	Sample Result [A]  ND  ND  ND  ND  ND	Parent   Sample   Result   Added   [B]     ND   0.1116   ND   0.1116   ND   0.1232	Parent   Sample   Result   Result   [C]     ND   0.1116   0.0945     ND   0.1116   0.1014     ND   0.2232   0.2026	Parent   Sample   Result   Added   [C]   %R   [D]	Parent   Sample   Result   Added   [C]   %R   Added   [E]	Parent   Sample   Result   Added   [B]	Parent   Sample   Result   IA   Parent   Spike   Result   IA   Parent   IA   Parent   Sample   Result   IA   Parent   IA   Par	Parent   Sample   Result   IAj   Parent   Spiked   Result   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAj   Parent   IAJ	Parent   Sample   Result   IAj   Parent   Spike   Added   IBJ   Parent   IAj   Parent   IAJ	Parent   Sample   Result   Added   [B]   Spiked   Sample   Added   [B]   Spike   Spike   Added   [B]   Spike   Spike   Added   [B]   Spike   Added   [B]   Spike   Added   [B]   Spike   Added   Spiked Sample   Result [F]   Spiked Sample   Spiked Sample   Result [F]   Spiked Sample   Spiked Sample   Result [F]   Spiked Sample   Spiked Sample   Result [F]   Spiked Sample   Spiked				

Lab Batch ID: 834654

**QC- Sample ID:** 399335-001 S

Batch #:

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	Parent Sample	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag				
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD					
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)/BRelative Percent Difference RPD = 200\*(C-F)/(C+F)

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

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

17



### **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399247

Lab Batch #: 834907

Date Analyzed: 12/06/2010 10:19

**Project ID:** 

Date Prepared: 12/06/2010

Analyst:LATCOR

QC- Sample ID: 399244-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY													
Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag									
		33.0	2.0										

Lab Batch #: 834594

Chloride

Date Analyzed: 12/06/2010 12:55

Anions by E300

Analyte

**Date Prepared:** 12/06/2010

Analyst: JLG

QC- Sample ID: 399244-001 D

Batch #:

Matrix: Soil

Donouting United 9/

Reporting Units: %	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY													
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	· RPD	Control Limits %RPD	Flag										
Analyte	.	[B]													
Percent Moisture	5.58	5.83	4.	20											

# **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 Argu	ijo					.,									-	Pro	<del>je</del> ct	Nan	ne: 3	out	nerr	Un	non	Ga	<u>5 L</u>	3110	14111	<u></u>		
	Company Name Basin En	vironmental Se	rvices	Techn	ologies, LLC			_	_							-		Pr	ojec	#:_											
	Company Address: P.O. Box	301														-	F	roje	ct L	oc: <u>L</u>	ea C	ount	y, N	<u>M</u>							
	City/State/Zip: Lovingtor	, NM 88260				·										_			PC	#:_		9	<u> 17</u>	87	<u> </u>						
	Telephone No: (575) 396-	2378			· ·	_ Fax No	:	(57	5) 3	96-1	429					_	Report	For	mat	[2	St	anda	rd			TRR	P	[	] NF	PDES	;
	Sampler Signature:	She			_	- e-mail	:	pn	n@	)ba	sin	- env	r.col	m		_															•
(lab use					· <del></del> _	•													_		TCL		nalyz	ze Fo	or:	$\overline{}$	$\overline{T}$	$\overline{}$	_	ءٍ ا	1
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ORDE	r#: 399247		<del></del>	<del></del>	<del></del>	<del> </del>	Т	Γ	Pr	esen	/atlo	n & #	of Co	ontai	ners	12	latrix	8015B	اي	1		d Se			8260					1 4	$\Box$
AB # (lab use only)	FIELD CODE	·	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Fittered	Fotal #. of Containers	<u>88</u>	HNO <sub>3</sub>	HCI	H <sub>2</sub> SO <sub>4</sub>	NaOH	, CoZoZ	Other ( Specify)	DW - Drinking Water St - Sludg	CW = Groundwater S=Soll/So NP=Non-Potable Specify Oth	TPH: 418.1 (8015M) 8	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	SAR / ESP / CFC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5039 or BTEX 8260	RCI	- {	CI- E300		RUSH TAT (Pre-Schedule)	Standard TAT 4 DAY
<u> </u>	VZ Cell 9 G-1				12/1/10	1205	<u> </u>	1	x			+	十	T	十	1	OIL	x				Ī			1			x	I	L	X
2	VZ Cell 9 G-2				12/1/10	1210		1	х	П		$\top$	丁		T	s	OIL	х			$oxed{\mathbb{T}}$				X			x	丄	丄	X
3	VZ Cell 9 G-3				12/1/10	1210		1	X							s	OIL	X							X	$\sqcup$	_	X	_	4	×
4	VZ Ceil 9 G-4				12/1/10	1215		1	X							s	OIL	X			ᆚ				X	Ш	_	×	4	4	×
_5_	VZ Cell 9 G-5				12/1/10	1220		1	X				$\perp$	$oxed{\bot}$		s	OIL	x		_	4	_	<u> </u>	<u> </u>	1	$\vdash \downarrow$	_	×	+	╬	+×
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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: PASA ENVI						•		
Date/Time: 12/3/1	o i.us							
Lab ID#: 3992L	L <del></del>							
Initials: XIII								
		S	ample Receipt Ch	necki	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container	in good condition?		·		/(es	No	None	
3. Custody seals intac	t on shipping conta	iner (co	poler) and bottles?		Yes	No	NA	
4. Chain of Custody p	resent?				(TEE)	No		
5. Sample instruction	s complete on chain	of cus	tody?			No		
6. Any missing / extra	samples?				)%	No		_
7. Chain of custody s	igned when relinquis	shed / r	eceived?		Yes	No		
8. Chain of custody a	grees with sample la	bel(s)?	<b>?</b>		TES	No		
9. Container labels le	gible and intact?				Yes	No		
10. Sample matrix / p	roperties agree with	chain c	of custody?		Yes	No		
11. Samples in prope	r container / bottle?		<del></del>		Yes	No		
12. Samples property	preserved?				Yes	No	N/A	
13. Sample container	intact?		···		Yes	No		
14. Sufficient sample	amount for indicate	d test(s	)?		Yes	No		
15. Ali samples receit	ed within sufficient	hold ti	me?		Yes	No		
16. Subcontract of sa	mple(s)?				Yes	No	N/A	-
17. VOC sample have	zero head space?				Yes	No	NA	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 N	0.	Cooler 5 No.	
ibs O	°C lbs	°C	ibs	°c			ibs	°c
		None	conformance Doc		nasti e n			
Combonie	<b></b>				nauon			
Contact:	Coma	icted D	y:			Date/Time:_		
Regarding:							•	
Corrective Action Tal	ren•							
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<del></del>	<del></del>					<del>, ,</del>		
						<del></del>		
		_	<del></del>			<del></del>		
Check all that apply:		s has b accept	egun shortly after san able by NELAC 5.5.8.3	npling 3.1.a.1	event and o	out of tempe	rature	

- □ Initial and Backup Temperature confirm out of temperature conditions
- ☐ Client understands and would like to proceed with analysis

Final 1.002

## **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):

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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)

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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

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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

Sample receipt non conformances and Comments:

None

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 Analys Jummary 399248

#### Southern Union Gas Services- Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm



Project Id:

Project Location: Lea County, NM

Contact: Rose Slade

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 13-DEC-10

Project Manager: Brent Barron, II

Lab Id:       399248-001       399248-002       399248-003       399248-004         Analysis Requested       VZ Cell 10 G-1       VZ Cell 10 G-2       VZ Cell 10 G-3       VZ Cell 10 G-4         Matrix:       SOIL       SOIL       SOIL       SOIL       SOIL         Sampled:       Dec-01-10 12:25       Dec-01-10 12:25       Dec-01-10 12:30       Dec-01-10 12:30	
Analysis Requested  Depth:  Matrix: SOIL SOIL SOIL SOIL	
Depth:   Matrix: SOIL SOIL SOIL SOIL	
1	
Sampled: Dec 01 10 12:25   Dec 01 10 12:25   Dec 01 10 12:20   Dec 01 10 12:20	
Sumples:   Dec-01-10 12.25   Dec-01-10 12.30   Dec-01-10 12.30	
- Anions by E300 Extracted:	-~-
Analyzed: Dec-06-10 10:19 Dec-06-10 10:19 Dec-06-10 10:19 Dec-06-10 10:19	
Units/RL: 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	
BTEX by EPA 8021B	
Analyzed: Dec-08-10 03:25 Dec-06-10 20:10 Dec-06-10 20:34 Dec-06-10 20:57	
Units/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	
Toluene ND 0.0022 ND 0.0021 ND 0.0021 ND 0.0022	
Ethylbenzene ND 0.0011 ND 0.0011 ND 0.0011 ND 0.0011	
m_p-Xylenes	
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	
Percent Moisture Extracted:	,
Analyzed: Dec-06-10 12:55 Dec-06-10 12:55 Dec-06-10 12:55	
Units/RL: % RL % RL % RL % RL	•
Percent Moisture 8.10 1.00 9.97 1.00 5.99 1.00 9.20 1.00	
TPH By SW8015 Mod	
Analyzed: Dec-06-10 16:26 Dec-06-10 16:46 Dec-06-10 17:04 Dec-06-10 17:23	
Units/RL: 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 Laboratorics 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



Project Name: Southern Union Gas Landfarm

7ork Orders: 399248,

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Project ID:

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 15:08	SU	SURROGATE RECOVERY STUDY					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes	(*-)	[2]	[D]	,,,,,			
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	Control Limits %R	Flags	
Analytes			[D]			
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:

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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



#### Project Name: Southern Union Gas Landfarm

Work Orders: 399248,

Project ID:

Lab Batch #: 834760

Sample: 399248-002 / SMP

Batch:

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	Control Limits %R	Flags
Analytes			[D]		
1,4-Diffuorobenzene	0.0269	0.0300	90	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 834760

Sample: 399248-003 / SMP

Batch:

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	Control Limits %R	Flags	
Analytes	[-4]		[D]			
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	Control Limits %R	Flags	
Analytes	ļ	]	[D]			
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:

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			(12)			
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:

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	Control Limits %R	Flags	
Analytes			[D]			
1,4-Difluorobenzene	0.0284	0.0300	95	80-120		
4-Bromofluorobenzene	0.0295	0.0300	98	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Vork Orders: 399248,

**Project ID:** 

Lab Batch #: 834972

**Sample:** 590647-1-BLK / BLK

Matrix: Solid Batch:

Units: mg/kg	Date Analyzed: 12/07/10 17:26	SURROGATE RECOVERY STUDY				
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes		,	[D]		
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 RECOVERT STUDI					
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes	,,,,	[-]	[D]			
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:

Matrix: Soil

Units: mg/kg Da	ate Analyzed: 12/07/10 18:30	SŪ	RROGATE RE	COVERY S	STUDY	
BTEX by E	CPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Anal	ytes			[D]		
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				
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
*	Analytes			[D]		
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					
ТРН	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		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

Surrogate Recovery [D] = 100.\* A / B

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Work Orders: 399248,

Project ID:

Lab Batch #: 834654

Sample: 590471-1-BSD / BSD

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 11:	10 SL	SURROGATE RECOVERY STUDY				
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes		ł	[D]	}		
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			(2)			
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	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Soil

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 12/06/10 16:46	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags	
Analytes			[D]			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 17:04 SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	11	(2)	[D]	/ 4.1	
1-Chlorooctane	73.1	100	73	70-135	
o-Terphenyl	36.5	50.1	73	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

**Vork Orders**: 399248,

Lab Batch #: 834654

Sample: 399248-004 / SMP

Project ID:

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 17:23	SURROGATE RECOVERY STUDY								
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
Analytes	<u> </u>		[2]						
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

Uniter ma/ka

Date Analyzed: 12/06/10 18:21

SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 12/06/10 18:21 SURROGATE RECOVERT STOEL									
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
Analytes	rJ		[D]		*				
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	<b>Date Analyzed:</b> 12/06/10 18:40	SURROGATE RECOVERY STUDY								
	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 Recovery [D] = 100 \* A / B

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



#### **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

V		·									
BTEX by EPA 8021B  Analytes	Biank 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	0.0924	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

United mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Wattix. Dond

Units: mg kg			11/22/11/11	, , , , , , , , , , , , , , , , , , ,							
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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

BLANK/RLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

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

Units: mg/kg	BLANK BLANK STIKE / BLANK STIKE BUT EICATE RECOVERT STUDT										
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C] .	[D]	(E)	Result [F]	[G]				
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

BLANK/BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg TPH By SW8015 Mod Blank Spike Blank Blank Blank Blk. Spk Control Control Spike Sample Result Added Spike Dup. RPD Limits Flag Spike Spike Limits Added [A] Result %R Duplicate %R % %R %RPD [B] [C] Result [F] [D][G] [E]**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 70-135 35 878

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

**Date Prepared:** 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399244-001 S

Batch #:

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

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399248

Project ID:

Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #:

Matrix: Soil

**Date Analyzed: 12/06/2010** 

**Date Prepared:** 12/06/2010

Analyst: SEE

Reporting United marka

110	Analyst:	SEI

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	. %	%R	%RPD	
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 Date Analyzed: 12/07/2010 QC- Sample ID: 399258-001 S

Batch #:

Matrix: Soil

**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	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	•	RPD	Control Limits	Control Limits	Flag
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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



### 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 #:

Matrix: Soil

**Date Analyzed:** 12/06/2010

**Date Prepared:** 12/06/2010

Analyst: BEV

Departing United mode

Reporting Units: mg/kg	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW8015 Mod	Parent Sample Result	Spike	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	Added [B]	[C]	%K [D]	(E)	Result [F]	76 K [G]	70	76K	76KID	
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	



#### **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399248

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 #:

Matrix: Soil

Reporting Units: mg/kg

SAMPLE / SAMPLE DUPLICATE RECOVERY

Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Chloride	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 #:

Matrix: Soil

Keporti	ng Units: %	SAMPLE /	SAMPLE	DUPLIC	ATE REC	OVERY
	Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
	Analyte		[B]	ŀ		
Percent M	oisture	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				<del></del>										Pro	ojec	t Na	ne:	Sou	ther	rn L	Jnio	n G	as I	Lan	orar	<u>m</u>		
	Company Name	Basin Environmer	ntal Service	s Techn	ologies, LLC												Pr	ojec	t#:_											
	Company Address:	P.O. Box 301														F	Proje	ect L	oc: <u> </u>	Lea (	Cour	ıty,	NM							
	City/State/Zip:	Lovington, NM 882	260			- <u>-</u>												PC	) #: _		_ (	91	78	7_					`	
	Telephone No:	(575) 396-2376			<del></del>	Fax No:		(50	5) 39	96-14	129					Repor	t Fo	mat	. [	x s	tand	lard			TR	RP		N	PDES	S
	Sampler Signature:				<u> </u>	e-mail:		pm	1@	bas	sine	nv.c	com	<u> </u>				_				A	1							1
(lab use	only)		1														上			TCL	P:	Ana	lyze F	T	Γ	Γ	ГΤ	T	٠ ټ	ļ
ORDER	1#:399248			•				[	Pre	serv	ation	& # O	f Cor	taine	rs	Matrix	g	Π	$\neg$	TOTA	L:	+	+-	S X	۹ .	'			48, 72 hrs	
LAB # (lab use only)	FIEL	D CODE	Beginning Dapth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce	HNO <sub>3</sub>	HCI	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	DwDrinking Water StSludg GW Groundwater SSoil/Soil NPNon-Potable Specify Oth	TPH: 418.1 (8015MS) 80158	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Ct. SO4, Alkalinity)	Cd Cr Pb Ho	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	CI- £300		RUSH TAT (Pre-Schedule) 24,	Standard TAT 4 DAY
	VZ Ce	ell 10 G-1			12/1/10	1225	Ц	1	x		$\perp$		_			SOIL	X		4	1	ļ	1	4	1	igspace	<u> </u>	×	_	丰	X
2		II 10 G-2			12/1/10	1225		_+	X	_	4	1	-		4	SOIL	X		4	4	1	$\perp$	+	X	╄	-	X	+	╀	X
3		II 10 G-3			12/1/10	1230	$\vdash$	1	시	4	$\bot$	+	-		4	SOIL	X	$\square$	$\dashv$	_	+	+	┼	X	╀	<b>├</b> ─	X		╁	X
¥	VZ Ce	ell 10 G-4			12/1/10	1230		1	×		$\pm$				1	SOIL	Ľ		_	$\pm$			上	X			X	1	土	X
				+-				1			$\frac{1}{1}$								$\frac{1}{2}$	$\pm$	$\frac{1}{1}$	+	$\pm$	$\vdash$	L			士	土	
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Sassialli	nstructions:										土												ment	Ţ				I	I	
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Relinquish		19	10 0	Time 1900 Time	Received by:	Sig					<del></del> -			14	Da	ie le	Time Z:C	20	Cust Cust Sam	ody s ody s ple H by Sa	seals seals land mple urier	s on s on Del or/Cli	ner(s) contincoole coole livere ient R UP	aine er(s) ed Rep. 1	) ? DH	1L	Fed	17 × 67 × 67 × 61	N N N N One S	Star
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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: BASIA Enviro	nmental							
Date/Time:  2/3/10								
Lab ID#: 399248								
Initials: XIV	f							
		S	ample Receipt Ch	ecki	ist			
1. Samples on ice?				1	Blue	Water	No	
2. Shipping container in	good condition?				(es)	No	None	
3. Custody seals intact of	on shipping contain	er (c	ooler) and bottles?		Yes	No	NA	
4. Chain of Custody pre-	sent?				185	No		
5. Sample instructions of	omplete on chain o	f cus	tody?		Yes	. No		<u></u>
6. Any missing / extra sa	amples?				Yes	No		
7. Chain of custody sign	ed when relinquish	ed / ı	received?		Yes	No		
8. Chain of custody agre	es with sample lab	el(s)?	?		<b>F</b>	No		
9. Container labels legit	de and intact?				Yes	No		
10. Sample matrix / proj	erties agree with cl	nain (	of custody?		Yes	No		
11. Samples in proper c	ontainer / bottle?				(Yes)	No		
12. Samples property pr	reserved?				Yes	No	NA	
13. Sample container in	tact?		·		Yes	No		<del></del>
14. Sufficient sample an	nount for indicated	testi	3)?		Yes	No		
15. Ali samples receive	d within sufficient h	old ti	me?		Yes	No		<del></del>
16. Subcontract of sam	ple(s)?				Yes	No	N/A	
17. VOC sample have ze	ero head space?		·		Yes	No	NA.	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 No		Cooler 5 No.	
lbs O°	lbs	<u>°c</u>	lbs	°C	lbs	°C	lbs	°C
		Non	conformance Doc	ume	ntation			
Contact:	Contac	ted b	w:			Date/Time:		
							<del></del>	
Regarding:			<del></del>		·			
							·	
Corrective Action Take	n:							·
								,
		<b></b>			, , , , , , , , , , , , , , , , , , ,			
	·							
Check all that apply:	☐ Cooling process I	has t	egun shortly after sar	npling	event and o	ut of temper	ature	
	conamon a	ccep	table by NELAC 5.5.8.3	5.7.a.7	•			

Final 1.000

□ 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



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):

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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

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

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## **Sample Cross Reference 399255**



### Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample Id	Matrix	<b>Date Collected</b>	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

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

None

Analytical Non Conformances and Comments:

Batch: LBA-834726 TPH By SW8015 Mod



Project Id:

Contact: Rose Slade

Project Location: Lea County, NM

### Certificate of Analys

### Jummary 399255

Southern Union Gas Services- Monahans, Monahans, TX

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

			· · · · · · · · · · · · · · · · · · ·	11'	oject Manager:	Dient Darion, II	
	Lab Id:	399255-001	399255-002	.		, ,	
Analysis Requested	Field Id:	VZ Cell 11 G-1	VZ Cell 11 G-2				
Analysis Requested	Depth:						
	Matrix:	SOIL	SOIL				
	Sampled:	Dec-01-10 13:10	Dec-01-10 13:15				
Anions by E300	Extracted:				· · · · · · · · · · · · · · · · · · ·		
	Analyzed:	Dec-06-10 16:02	Dec-06-10 16:02				
•	Units/RL:	mg/kg RL	mg/kg RL				c
Chloride	Child ICE.	31.1 9.17	24.7 4.63				
BTEX by EPA 8021B	Extracted:	Dec-07-10 15:00	Dec-07-10 15:00				_
	Analyzed:	Dec-07-10 17:55	Dec-08-10 04:41				
	Units/RL:						
Benzene	Units/KL:	mg/kg RL ND 0.0011	mg/kg RL 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		<del></del>		
Total BTEX		ND 0.0011	ND 0.0011				
Percent Moisture	Extracted:						
	Analyzed:	Dec-06-10 12:55	Dec-06-10 12:55				
	Units/RL:	% RL	% RL				
Percent Moisture		8.39 1.00	9.35 1.00				
TPH By SW8015 Mod	Extracted:	Dec-06-10 10:00	Dec-06-10 10:00				
·	Analyzed:	Dec-06-10 18:11	Dec-06-10 18:41				
<u>,</u>	Units/RL:	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 Laboratorics. 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



Project Name: Southern Union Gas Landfarm

'ork Orders: 399255,

Lab Batch #: 834940

**Project ID:** 

Sample: 590617-1-BKS/BKS

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	Control Limits %R	Flags				
Analytes			[D]		:				
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	Control `Limits %R	Flags						
Analytes			[ <b>D</b> ]								
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:

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	Control Limits %R	Flags			
Analytes		`	[D]					
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:

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	Control Limits %R	Flags				
Analytes			[D]		-				
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:

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	Control Limits %R	Flags				
Analytes	•		[D]						
1,4-Difluorobenzene	0.0303	0.0300	101	80-120					
4-Bromofluorobenzene	0.0349	0.0300	116	80-120					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 399255,

Project ID:

Lab Batch #: 834940

Sample: 399255-001 SD / MSD

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/07/10 18:42	SU	RROGATE R	ECOVERY	STUDY	
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		5
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:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/08/10 04:41	Su	KKUGAIE K	LCOVERI	51001	
вте	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	(A)	[2]	[D]	/010	
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:

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 12/06/10 12:50	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod  Analytes	Amount Found [A]	True Amount {B}	Recovery %R [D]	Control Limits %R	Flags
	Analytes			<u> </u>		
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 12/06/10 13:19	SU	RROGATE R	ECOVERY :	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 13:48	St	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
1-Chlorooctane	92.5	100	93	70-135	
o-Terphenyl	44.8	50.1	89	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399255,

Lab Batch #: 834726

Sample: 399255-001 / SMP

Project ID:

Batch:

Matrix: Soil

Units: mg/kg	<b>Date Analyzed:</b> 12/06/10 18:11	SU	IRROGATE RI	ECOVERY	STUDY	
ТРН	By SW8015 Mod	Amount Found [A]	True Amount  B]	Recovery %R	Control Limits %R	Flags
	Analytes	()	[-]	[D]		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 18	:41 SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	·		[D]		ļ
1-Chlorooctane	94.2	99.7	94	70-135	

Lab Batch #: 834726

o-Terphenyl

Sample: 399258-005 S / MS

Batch:

45.2

Matrix: Soil

70-135

Units: mg/kg Date Analyzed: 12/07/10 00:42	SU	RROGATE R	ECOVERY S	STUDY	
TPH By SW8015 Mod  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-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 0	1:12 <b>SU</b>	RROGATE RI	ECOVERY S	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 Recovery [D] = 100 \* A / B

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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	Units: mg/kg BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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		BLAN	K /BLANK S	PIKE / E	BLANK S	PIKE DUPI	ICATE	RECOVE	RY STUD	Y	
Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Kesuk [F]	[G]				
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 / BSD 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

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Units: mg/kg

Ours, mans											
TPH By SW8015 Mod	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

QC- Sample ID: 399253-003 S

Batch #:

Matrix: Soil

Reporting Units: mg/kg	MATI	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\*(C-A)/BRelative Percent Difference [E] = 200\*(C-A)/(C+B)All Results are based on MDL and Validated for QC Purposes

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399255

Project ID:

Lab Batch ID: 834940

**QC-Sample ID:** 399255-001 S

Batch #:

Matrix: Soil

**Date Analyzed: 12/07/2010** 

Date Prepared: 12/07/2010

Analyst:

Reporting Units: mg/kg

Reporting Onto. Ingreg	•	MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY														
BTEX by EPA 8021B	Parent Sample Result	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample		RPD	Control Limits	Control Limits	Flag					
Analytes	[A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	<b>%</b>	%R	%RPD						
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 #:

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	Spike Added	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag				
Analytes	Result [A]		[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD					
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



## **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399255

Lab Batch #: 834914

Date Analyzed: 12/06/2010 16:02

Project ID:

Date Prepared: 12/06/2010 Ar

QC- Sample ID: 399253-003 D

Analyst: LATCOR

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAM	PLE / SAMPLE	DUPLIC	CATE REC	OVERY
Anions by E30	Parent Res	ult Duplicate	RPD	Control Limits %RPD	Flag
. Analyte		[B]			
Chloride	N	O 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 #:

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	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																Pr	ojec	t Nar	ne: _	Sout	her	n U	nior	G8	ıs L	and	farr	<u>n_</u> _		
Company Name	Basin Environme	ental Ser	vices	Techno	ologies, LLC									·				Pr	ojec	t#:_			_							<u>_</u>	
Company Address:	P.O. Box 381	<u> </u>										·				-	ſ	Proje	ect L	oc: <u>I</u>	.ea C	oun	ty, N	M							
City/State/Zip:	Lovington, NM 88	3260			·														PC	)#:_			aı'	18	<b>&gt;</b> _						
Telephone No:	(575) 396-2378					_ Fax No:		(57	5) 39	96- <u>1</u> -	429					. F	Repor	t Fo	rmat	. [	x s	tanda	ard			TRE	₹P	[	NF	PDES	;
Sampler Signature:						e-mail:		pn	1@	ba	sine	env	.con	<u>n</u>								<u>-</u>									
only)		<b>-</b>																	_			P:	Inaly	ze F		Т	Т	T	丁	- <u>1</u>	
* 399 255	<u>)</u>	1 .						1	Pre	eserv	ation	18#	of Co	ntain	ners ,	М	atrix	g			TOTA	<del></del> -	-		$\overline{}$					48, 72	
			Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers								iter SL-Sludg	S = Soli/Sol pecify Oth	<b>\$</b> /	TX 100	Cations (Ca, Mg, Na, K)	Anons (Cl. SO4, Alkalinity)	Cd Cr Pb Hg		Semivolatiles	RIEX 8021B/5038 or BTEX 826	RCI	1			RUSH TAT (Pre-Schedule) 24.	Standard TAT 4 DAY
VZ Ce	ell 11 G-1				12/1/10	1310	_	1	x		T	7	十			├		x				Ī			X			x	$oxed{oxed}$	oxdot	x
VZ Ce	əll 11 G-2				12/1/10	1315		1	X							S	OIL	x							X		$\Box$	x	$\perp$		x
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Re La	W.	ate	]:4	ne 5		OT: Mush			<del>,</del>					12	Da	ite 3/10	0 1		- 1	١	у Со	uner	r/Clie ? Upon	UP:	ep.? S Uo eipt	DHL Z	gli	FedE	بر ج ج ک	) °C	tar
	Company Name Company Address: City/State/Zip: Telephone No: Sampler Signature: only) #: 399 255	Company Name  Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88  Telephone No: (575) 396-2378  Sampler Signature: only)  ##: 300 255  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2	Company Name  Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (575) 396-2378  Sampler Signature: only)  #: 300 255  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2  Date  Policy Code  Date  Date  Date  Date	Company Name  Basin Environmental Services  P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (575) 396-2378  Sampler Signature: conly)  #: 300 255  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2  Date  Tirelaby: Date  Tirelaby	Company Name  Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (575) 396-2378  Sampler Signature: only)  A#: 3CP 255  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2  Date  Time  Date  Time  Date  Time  Date  Time	Company Name  Company Address:  P.O. Box 381  City/State/Zip:  Lovington, NM 88260  Telephone No:  Sampler Signature:  only)  R#: 3CP 25 5  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2  Date  Time  Received by:  Received by:  Received by:  Policy Time  Received by:  Received by:  Part of the par	Company Name  Basin Environmental Services Technologies, LLC  Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (575) 396-2378  Fax No: Sampler Signature: e-mail: only)  R #: 3CP 255  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2  Date  Time  Received by  Time  Time  Received by  Time  Time  Received by  Time	Company Name  Basin Environmental Services Technologies, LLC  Company Address:  P.O. Box 381  City/State/Zip:  Lovington, NM 88260  Telephone No:  (575) 396-2378  Fax No:  Sampler Signature:  e-mail:  only)  R#: 399 255  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2  Date  Time  Received by  Page 12/1/10  Time  Received by  Page 13/10  Time  Received by  Page 13/10  Time  Received by  Page 13/10  Time  Received by  Page 13/10	Company Name  Company Address:  P.O. Box 381  City/State/Zip:  Lovington, NM 88260  Telephone No:  (575) 396-2378  Fax No:  (575) 396-2378  Fax No:  (576) 396-2378  Fax No:  (577) 396-2378  FileLD CODE  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2  Date  Time  Received by  Receiv	Company Name  Basin Environmental Services Technologies, LLC  Company Address:  P.O. 8ox 381  City/State/Zip:  Lovington, NM 88260  Telephone No:  Sampler Signature:  only)  R #: 3CH 255  Fix No: (575) 3:  Fix	Company Name  Basin Environmental Services Technologies, LLC  Company Address:  P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: Sampler Signature: e-mail: pm@ba: only)  R #: 300 25 5  FIELD CODE  VZ Cell 11 G-1  VZ Cell 11 G-2  Date  Time  Received by  Fleetory  Received by  Time  Time  Received by  Time  Ti	Company Name   Basin Environmental Services Technologies, LLC	Company Name  Basin Environmental Services Technologies, LLC  Company Address:  City/State/Zip:  Lovington, NM 88260  Telephone No:  Sampler Signature:  e-mail:  pm@basinenv  pm@basinenv  pm@basinenv  preservation 8 /	Company Name  Basin Environmental Services Technologies, LLC  Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (575) 396-2378 Fax No: (575) 396-1429  Sampler Signature: e-mail: pm@basinenv.com  only)  R#: 3CH 25 D  Freservation & f of co	Company Name  Basin Environmental Services Technologies, LLC  Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (975) 396-2378  Sampler Signature: e-mail: pm@basinenv.com  only)  R #: 3CP 255  FIELD CODE Go G G G G G G G G G G G G G G G G G G	Company Name  Basin Environmental Services Technologies, LLC  Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (575) 396-2378  Sampler Signature: e-mail: pm@basinenv.com  Preservation \$ fot Containers  Preservation	Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (575) 396-1429 Fax No: (575) 396	Company Address: P.O. Box 381  City/State/Zip: Lovington, NM 88260  Telephone No: (375) 396-2378  Fax No: (575) 396-1429  Report only)  R#: 300 250  Field Code  VZ Cell 11 G-1  VZ Cell 11 G-2  Date	Company Address:   P.o. Box 381	Company Address:  Company Address:  Project L  City/State/Zip: Lovington, NM 88260  Telephone No: (575) 396-2378  Sampler Signature:  e-mail:  Project L  Sampler Signature:  e-mail:  Prosect J  Report Format  Fax No: (575) 396-1429  Report Format  Prosect J  Report Format  Fax No: (575) 396-1429  Report Format  Prosect J  Report	Company Name  Basin Environmental Services Technologies, LLC  Project Loc:  City/State/Zip: Lovington, NM 88260  Po #:  Telephone No: (575) 396-2376  Sampler Signature:  e-mail:  pm@basinenv.com  Preservation & for Containers Matrix  FIELD CODE  14	Company Address:  P.O. Box 381  City/State/Zip: Lovington, NM 83260  Fax No. (575) 396-1429  Report Format:  Sampler Signature:  e-mail:  Project Loc: Lea Company Address:  P.O. Box 381  Project Loc: Lea Company Address:  P.O. Box 381  Project Loc: Lea Company Address:  P.O. Box 381  Project Loc: Lea Company Address:  P.O. Box 381  Project Loc: Lea Company Address:  P.O. Box 381  Project Loc: Lea Company Address:  P.O. Box 381  Project Loc: Lea Company Address:  P.O. Box 381  Project Loc: Lea Company Address:  Report Format:    X   Some address: P.O. Box 381   Yes and address: P.O. Box 382   Yes and	Company Address:  Project #:  Company Address:  Project #:  Project Cocc Les Coun  Project #:  Project Cocc Les Coun  Project Acc Les Coun  Project #:  Project #:  Project #:  Project Cocc Les Coun  Project #:  Project #:  Project Cocc Les Coun  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project Cocc Les Coun  Project #:  Project Loc: Les Coun  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project Loc: Les Coun  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project #:  Project Loc: Les Coun  Project #:  Proj	Company Address:   P.O. Box 381	Company Address: P.O. Box 381	Company Address:   Po. Box 381	Company Address:   Project Los: Lea County, NM   Project Los: Le	Company Address: P.O. Box 381	Company Address:   P.O. Box 381	Company Name	Company Name Basin Environmental Services Technologies, LLC  Company Address: P.O. Box 381  Project Loc: Les County, NM  Project Loc



#### XENCO Laboratories

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia Phoentx, 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 or

## Prelogin / Nonconformance Report - Sample Log-In

Client: DOSAEnviro	nuent	<u>al</u>						
Date/Time: 12/3/10	1:45		·					
Lab ID#: 399255								•
Initials: $\chi/\gamma$								
		S	ample Receipt	Checki	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container in	good condi	tion?			(es)	No	None	
3. Custody seals intact o	n shipping	container (co	oler) and bottles?		Yes	No	N/A	<u> </u>
4. Chain of Custody pres	ent?			<u> </u>	<b>F95</b>	No		
5. Sample instructions c	omplete on	chain of cus	tody?		Yes	No		
6. Any missing / extra sa	mples?				Yes	No		
7. Chain of custody sign	ed when re	linquished / r	eceived?		Yes	No		
8. Chain of custody agre	es with sar	nple label(s)?			TES	No		
9. Container labels legib	le and inta	<b>:1</b> ?			Yes	No		
10. Sample matrix / prop	erties agre	e with chain o	f custody?		Yes	No ·		
11. Samples in proper co	ontainer / b	ottie?	<del></del>		Yes	No		
12. Samples property pri	eserved?	··			Yes	No	NA	
13. Sample container int	act?	<u> </u>			Yes	No		
14. Sufficient sample am	ount for in	dicated test(s	)?		(Yes)	No		
15. All samples received	within suf	ficient hold ti	me?		(Yes	No		
16. Subcontract of samp	le(s)?				Yes	No	N/A	
17. VOC sample have ze	ro head sp	ace?			Yes	No	NA	
18. Cooler 1 No.	Cooler 2 N	lo	Cooler 3 No.		Cooler 4 No	0.	Cooler 5 No.	
ibs O °C	lbs	აი	lbs	°C	lbs	°c	lbs	°C
-		None	onformance D	ocume	ntation			
Contact:		Contacted by				Date/Time:		
Regarding:						-		
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Corrective Action Taker	1:							
	·	<del></del>						<del></del>
Check all that apply:	Cooling p	rocess has b	egun shortly after able by NELAC 5.5	sampling	event and	out of tempe	rature	
			able by NELAC 3.3		Pomtum co	nditione		

☐ Client understands and would like to proceed with analysis

Page 16 of 16 Final 1.000

# **Analytical Report 399249**

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



## **Sample Cross Reference 399249**



## Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample IdMatrixDate CollectedSample DepthLab Sample IdVZ Cell 12 G-1SDec-01-10 13:25399249-001



#### 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

Sample receipt non conformances and Comments:

None

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

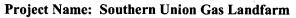
Samples affected are: 399251-001 S.

Batch: LBA-834907 Anions by E300



# Certificate of Analys Jummary 399249

## 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

					Project Manager:	Dient Darion, II	
	Lab [ld;	399249-001					
Analusia Daguarta d	Field Id:	VZ Cell 12 G-1					٠
Analysis Requested	Depth:	•					
	Matrix:	SOIL					
	Sampled:	Dec-01-10 13:25					
Anions by E300	Extracted:						
. •	Analyzed:	Dec-06-10 10:19	•				
	Units/RL:	mg/kg RL					
Chloride	1	19.6 9.18				.,	
BTEX by EPA 8021B	Extracted:	Dec-06-10 14:00					-
·	Analyzed:	Dec-06-10 19:24			•		
	Units/RL:	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		,			
Percent Moisture	Extracted:						
	Analyzed:	Dec-06-10 12:55		,			
	Units/RL:	% RL				-	
Percent Moisture		8.50 1:00					
TPH By SW8015 Mod	Extracted:	Dec-06-10 10:00	, .				
	Analyzed:	Dec-06-10 17:43					
	Units/RL:	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 Laboratorics. XENCO Laboratorics 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
- **POL** Practical Quantitation Limit
- \* Outside XENCO's scope of NELAC Accreditation.

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2505 North Falkenburg Rd, Tampa, FL 33619	(813) 620-2000	(813) 620-2033
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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



Project Name: Southern Union Gas Landfarm

York Orders: 399249,

Lab Batch #: 834760

Project ID:

**Sample:** 590531-1-BKS / BKS

Matrix: Solid Batch:

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			(2)	I		
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

Data Analyzada 12/06/10 16:18

SURROGATE RECOVERY STUDY

Units: mg/kg Date Analyzed: 12/06/10 16:18 SURROGATE RECOVERT STODI						
ВТЕ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes	()	[2]	[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 16:41	SU	RROGATE R	ECOVERY :	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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 17:51	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	Control Limits %R	Flags		
Analytes			[D]				
1,4-Difluorobenzene	0.0308	0.0300	103	80-120			
4-Bromofluorobenzene	0.0344	0.0300	115	80-120			

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



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	Control Limits %R	Flags
Analytes		,		[D]		
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						
ТРН	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
	Analytes			[D]				
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:

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	Control Limits %R	Flags		
Analytes			[D]				
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 11:2	28 SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
Analytes			1 (12)		
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 17:43	SU	RROGATE RI	ECOVERY S	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	36.2	50.1	72	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

7ork Orders: 399249,

Project ID:

Lab Batch #: 834654

Sample: 399335-001 S/MS

Batch:

Matrix: Soil

Units:	mg/kg
--------	-------

Units: mg/kg	<b>Date Analyzed:</b> 12/06/10 18:21	SU	RROGATE R	ECOVERY	STUDY	
TPH	By SW8015 Mod	Amount Found	True Amount	Recovery %R	Control Limits %R	Flags
	Analytes	[A] <sup>*</sup>	[ [B]	[D]	/0K	
-Chlorooctane		70.3	99.5	71	70-135	
-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	SU	RROGATE R	ECOVERY S	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		*
1-Chlorooctane	71.3	100	71	70-135	
o-Terphenyl	38.7	50.1	77	70-135	

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

\ll results are based on MDL and validated for QC purposes.

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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  Analytes	Biank 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	0.0924	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	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes		[B]	[C]	[D]	[E]	Result [F]	[G]				
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

Lab Batch ID: 834654

**Date Prepared:** 12/06/2010

Project ID:

Date Analyzed: 12/06/2010

Batch #: -1 Sample: 590471-1-BKS

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
λ •	ND	1000	914		999	939	04	- 2	70-135	25	
C6-C12 Gasoline Range Hydrocarbons	· ND			91			94			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

Project ID:

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

**Analyst: LATCOR** 

QC- Sample ID: 399244-001 S

Batch #:

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	<u> </u>	(=)							
Chloride	ND	212	212	100	75-125				

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

BRL - Below Reporting Limit



# Form 3 - M MSD Recoveries



Project Name: Southern Union Gas Landfarm

Work Order #: 399249 Lab Batch ID: 834760

Date Analyzed: 12/06/2010

QC-Sample ID: 399251-001 S

Batch #:

Matrix: Soil

Project ID:

Date Prepared: 12/06/2010

Analyst: SEE

Reporting	Unite.	ma/ka
Kenoruna	OHHS:	HIE/KE

Reporting Cuits. Ing K5	MATRIX SPIRE / MATRIX SPIRE 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

**Date Analyzed:** 12/06/2010

QC- Sample ID: 399335-001 S

Batch #:

Matrix: Soil

**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	Spike Added	Spiked Sample Result	Spiked Sample %R	Spike Added	Duplicate Spiked Sample	Spiked Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Fiag
Analytes	[A]	[B]	[C]	76 K [D]	[E]	Result [F]	70K [G]	70	70K	%KPD	
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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399249

Lab Batch #: 834907

Project ID:

Analyst: LATCOR

Date Analyzed: 12/06/2010 10:19 QC- Sample ID: 399244-001 D

Batch #: 1

Date Prepared: 12/06/2010

Matrix: Soil

Reporting Units: mg/kg	SAMPLE /	SAMPLE / SAMPLE DUPLICATE RECOVERY								
Anions by E300  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag					
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 #:

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.58	5.83	4	20	

# Page 15 of 16

# **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															_	F	roje	ct N	ame:	Sc	uth	ern	Un	ion	Ga	s La	ındfa	ırm			_
	Company Name	Basin Environ	mental Ser	vices	Techno	ologies								_			_		ı	Proje	ct #:											_	_
	Company Address:	P.O. Box 301				<del></del>											_		Pro	ject	Loc:	Lea	Co	unty	y, NN	N_							_
	City/State/Zip:	Lovington, NM	88260					_									_			P	O #:			9	178	<u>8</u> .						_	_
	Telephone No:	(575) 396-2378			<u> </u>		Fax No:		(50	5) 3	96-1	429					_	Repo	ort F	oma	et:	X	Star	ndar	rd		□.	TRRF	<b>3</b>		NPDI	ES	
	Sampler Signature:	1	100				e-mail:		pn	n@	bas	sine	env	,co	m				_					· A -		- F					<del>_</del>	_	
(lab use	only)			,															H			Ť	CLP:	Air	nalyzo		<u></u>	丁	T	ГТ	$\mathbf{H}_{i}$	ٳۼۣ	
ORDE	R#: 399249								1	Pre	serv	atio	n & #	of C	onta	iners	1 1	latrix	-[	. T	Т	το	TAL:	60	$\dashv$	${ o}$	X					48, 72 hrs	
AB # (kb use only)		LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Fotal #. of Containers				H <sub>2</sub> SO <sub>4</sub>			Other (Specify)	ter SL-Sludg	rer s=soli/sol		TX 1005 TX 1006	Į ₽	Anions (Cl. SO4, Alkalintty)	SAR/ESP/CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RC: N.O.R.M.	CI- 6300		5	RUSH IA! (Pre-Schedule) 24, 4	Standard IA: 4 DAT
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#### XENCO Laboratories

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

Document No.: SYS-SRC

Document Title: Sample Receipt Checklist

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

Effective Date: 6/1/2010

Page 1 of 1

# Prelogin / Nonconformance Report - Sample Log-In

Client BOSA Envir	ronmenta			<del>-</del>				
Date/Time: 12/3/10				_				
Lab ID#: 39424	-			_				
Initials: X/M					-			
		S	ample Rece	ipt Checkl	ist			
1. Samples on ice?		<del></del>			Blue	Water	No	
2. Shipping container	in good condition	on?			(es)	No	None	
3. Custody seals intac	t on shipping c	ontainer (co	oler) and bott	es?	Yes	No	NA	
4. Chain of Custody p	resent?				PES	No		
5. Sample instruction	s complete on c	hain of cust	tody?		TEN	No		
6. Any missing / extra	samples?				Yes	No		
7. Chain of custody s	igned when relis	quished / n	eceived?		Yes	No		
8. Chain of custody a	grees with samp	ie label(s)?	)		THE STATE OF THE S	No		
9. Container labels le	gible and intact?	?			Yes	No		
10. Sample matrix / po	roperties agree	with chain c	of custody?		Y	No ·		
11. Samples in prope	r container / bot	tie?			Yes	No		
12. Samples properly	preserved?			-	Yes	No	N/A	
13. Sample container	intact?				Yes	No		
14. Sufficient sample	amount for indi	cated test(s	)?		Yes	No		
15. All samples receiv	ved within suffic	ient hold ti	me?		Yes	No		
16. Subcontract of sa	mple(s)?				Yes	No	N/A	
17. VOC sample have	zero head spac	e?			Yes	No	NA	
18. Coaler 1 No.	Cooler 2 No	•	Cooler 3 No.		Cooler 4 No	0,	Cooler 5 No.	
lbs O	°C lbs	°c		bs °C	ibs	°c	lbe	°c
		None	onformanc	e Docume	ntation			
Contact:	c	Contacted by	y:			Date/Time:_		
Regarding:						_		
Corrective Action Ta	ken:						<u>.</u>	
	<del></del>			<del></del>	<del></del>		<del>,</del>	<del></del>
		<del></del>		<del></del>	<del></del>	<del></del>		
		·				<del></del>		
Check all that apply:	☐ Cooling pro	cess has b	egun shortly a	fter sampling	event and	out of tempe	rature	

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



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: 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 IdMatrixDate CollectedSample DepthLab Sample IdVZ Cell 13 G-1SDec-01-10 13:30399250-001

## 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

Sample receipt non conformances and Comments:

Sample receipt Non Conformances and Comments per Sample:

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 reanalysis. Samples affected are: 590647-1-BLK,399250-001.



Project Id:

Contact: Rose Slade

Project Location: Lea County, NM

#### Certificate of Analys Jummary 399250

## Southern Union Gas Services-Monahans, Monahans, TX

Project Name: Southern Union Gas Landfarm

Date Received in Lab: Fri Dec-03-10 01:45 pm

Report Date: 13-DEC-10

oject Eocation. Lea County, 1997					Project Manager:	Brent Barron, II	
	Lab Id:	399250-001					
Analysis Paguastad	Field Id:	VZ Cell 13 G-1		`			
Analysis Requested	Depth:						
	Matrix:	SOIL					
	Sampled:	Dec-01-10 13:30					
Anions by E300	Extracted:						
	Analyzed:	Dec-06-10 10:19					
	Units/RL:	mg/kg RL					
Chloride		72.9 8.78					
BTEX by EPA 8021B	Extracted:	Dec-07-10 13:50					
	Analyzed:	Dec-08-10 04:08					,
	Units/RL:	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	<u>.</u>				
Percent Moisture	Extracted:						
	Analyzed:	Dec-06-10 12:55				,	
	Units/RL:	% RL					
Percent Moisture		4.31 1.00	-			·	
TPH By SW8015 Mod	Extracted:	Dec-06-10 10:00					
	Analyzed:	Dec-06-10 18:02			•		•
	Units/RL:	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.

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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	(281) 240-4200 (214) 902 0300 (210) 509-3334 (813) 620-2000 (305) 823-8500 (432) 563-1800



Project Name: Southern Union Gas Landfarm

Vork Orders: 399250,

Lab Batch #: 834972

Project ID:

Sample: 590647-1-BKS/BKS Matrix: Solid Batch:

Units: mg/kg Date Analyzed: 12/07/10 16:00	SU	RROGATE R	ECOVERY	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	0.0291	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	SU	RROGATE R	ECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]·		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/07/10 17:2	6 SU	RROGATE R	ECOVERY	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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 18:09	SU	RROGATE R	RECOVERY	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

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						

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

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



Project Name: Southern Union Gas Landfarm

Work Orders: 399250,

Project ID:

Lab Batch #: 834972

Sample: 399250-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/08/10 04:08	SU	JRROGATE RI	ECOVERY	STUDY	
ВТЕХ	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 10:51	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes		,	[D]		:
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 12/06/10 11:10	SU	RROGATE RI	ECOVERY	STUDY	
ТРН	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:

Matrix: Solid

Units: mg/kg	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
I-Chlorooctane	71.4	100	71	70-135	
o-Terphenyl	35.5	50.1	71	70-135	

Lab Batch #: 834654

Sample: 399250-001 / SMP

Batch:

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	Control Limits %R	Flags				
Analytes			[D]						
1-Chlorooctane	72.4	100	72	70-135					
o-Terphenyl	36.6	50.0	73	70-135					

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Vork Orders: 399250,

Sample: 399335-001 S / MS

**Project ID:** 

Lab Batch #: 834654

Matrix: Soil Batch:

50.1

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 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

o-Terphenyl

Sample: 399335-001 SD / MSD

Batch: 1

Matrix: Soil

70-135

Units: mg/kg	Date Analyzed: 12/06/10 18:40	SU	RROGATE R	ECOVERY	STUDY	
ТРН	By SW8015 Mod	. Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
·	Analytes			[D]		
1-Chlorooctane		71.3	100	71	70-135	· ·

38.7

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

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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		BLAN	K/BLANK S	SPIKE / E	BLANK S	PIKE DUP	LICATE	RECOVE	ERY STUD	Y	
BTEX by EPA 8021B	Blank	Spike Added	Blank Spike	Blank Spike	Spike Added	Blank Snike	Bik. Spk	RPD	Control	Control	Flao

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	(**)	[B]	[C]	[ <b>D</b> ]	[E]	Result [F]	[G]				
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	l	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

	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY									
Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
	[B]	[C]	[D]	[E]	Result [F]	[G]				
ND	10.0	10.3	103	10	10.2	102	ì	75-125	20	
	Sample Result [A]	Blank Spike Sample Result Added [A] [B]	Blank Spike Blank Sample Result Added Spike Result [B] [C]	Blank Spike Blank Spike Spike Spike [A] [B] [C] [D]	Blank Sample Result [A]  Blank Spike Spike Result [B]  [C]  Blank Spike Added Result (B]  [C]	Blank Spike Blank Spike Spike Added Spike Result [B] [C] [D] [E] Blank Spike Blank Spike Added Spike Duplicate Result [F]	Blank Spike Blank Spike Blank Spike Spike Added Spike Dup.  [A] [B] [C] [D] [E] Result [F] [G]	Blank Spike Blank Spike Spike Added Spike Spike Added Spike Result [A] [B] [C] [D] [E] Result [F] [G]	Blank Spike Spike Spike Added Spike Result [A] [B] [C] [D] [E] Blank Blank Spike Blank Spike Dup. RPD Limits WR [Duplicate Result [F] [G]	Blank Spike Spike Spike Spike Added Spike Result [B] [C] [D] [E] Blank Blk. Spk Dup. RPD Limits Control Limits Puplicate Result [F] [G]

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







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 Analytes	Blank Sample Result [A]	Spike Added	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Biank 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 #: 399250

Lab Batch #: 834907

Date Analyzed: 12/06/2010

QC- Sample ID: 399244-001 S

Project ID:

Date Prepared: 12/06/2010

**Analyst: LATCOR** 

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	MATE	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 <sub>.</sub>				
Chloride	ND	212	212	100	. 75-125					

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

BRL - Below Reporting Limit



## Form 3 - 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 #:

Matrix: Soil

Date Analyzed: 12/07/2010

Date Prepared: 12/07/2010

Analyst: SEE

Reporting Units: mg/kg

Kepoi ting Cints. 11.8 kg		IV	IATRIX SPIK	E/MAT	KLX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	-	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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 #:

Matrix: Soil 1

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	Parent Sample	Spike	Spiked Sample Result	Sample	•	Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD	
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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399250

Lab Batch #: 834907

**Project ID:** 

Date Analyzed: 12/06/2010 10:19

Date Prepared: 12/06/2010

Analyst: LATCOR

QC- Sample ID: 399244-001 D

Batch #:

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE SAMPLE DUPLICATE RECOVERS									
Anions by E300	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag						
Analyte	[A]	[B]		/51.12							
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	DUPLIC	ATE REC	OVERY
Parent Sample	Sample Duplicate	RPD	Control Limits	Flog

Percent Moisture  Analyte	Parent Sample Result [A]	Sample Duplicate Result [B]	RPD	Control Limits %RPD	Flag
Percent Moisture	5.58	5.83	4	20	

# age 15 of 16

# **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																Pro	oject	Nam	e: <u>S</u>	outh	err	<u>Un</u>	ion (	Gas	<u>Lar</u>	<u>ndfai</u>	m		
	Company Name	Basin Environm	ental Ser	vices	Techno	ologies, LLC											•		Pr	oject	#:										
	Company Address:	P.O. Box 381			·								· ·					F	Proje	ct Lo	c: <u>Le</u>	a Co	ount	y, NN	1						
	City/State/Zip:	Lovington, NM 8	18260																	РО	#:			91	281	<b>7</b>					
	Telephone No:	(575) 396-2378					Fax No:		(57	5) 39	96-14	129	_				Re	port	For	mat:	X	Sta	ında	rdi	[		RRP			NPDE:	S
	Sampler Signature:						e-mail:		<u>pn</u>	n@	bas	sine	nv.	com	<u>1</u>			_		_			- A.	=	e For	_					,
(lab use	only)						•												_			TCLP:		talyz	T		$\top$	Т	一	וֱַּן	
ORDE	R# 399250	C								Pre	serv	ation	& # C	of Cor	ntaine	ers	Ma	trix	g		T	OTAL:	Se	$\dashv$		<u>र</u>				48, 72 hra	
LAB # (lab use only)		LD CODE		Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce	HNO <sub>3</sub>	HCI	NaOH	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	None	Other (Specify)	Dw. Drinking Water St. Sludg GW - Groundwater S - SolJSol	Non-Potable S	TPH: 418.1 (8015M) 6015	TPH: TX 1005 TX 1006	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg S	Volatiles	Semivolatiles BTEX 80218/50/36-r RTEX 8260	RCI	N.O.R.M.	CI. E300		ž	Г
	VZ Ce	ell 13 G-1				12/1/10	1330		1	x							so	L	x						工	floor	oxdot	x	$\perp$	I	х
									Ц		_	$\downarrow$	$\perp$	1	Ш			_	$\sqcup$	_	$\downarrow$			$\perp$	4	$\bot$	igspace	$\sqcup$	$\bot$	丄	_
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Special	Instructions:																			s	OCs	e Co: Free	ntain of H	ers l leads	ntact space			C	DY	N	Ð
Relinquis Relinquis	0/1/2	19	Date B// Date	Tir <i>Of D</i> Tir		Received by:	La	-							IJ	Dat	te (e	9	Time . * o Time	0	ustod ampl by	ly se ly se e Hai Sami	als o als o nd D oler/(	n co en co elive Client	ntaine oler(s red :Rep.	;) ?		Cocco.	D - 00000	One St	
Relinguis	hed by:		Daye	Tin	ne	Received by ELC	or: Murdo	A	E						12	Dai	10		Time 45	1	•	Cour			JPS (q Receip	DH 0 2 0t:	<u>"</u> 9	SSP)	; <u>C</u>	one St	ar



#### XENCO Laboratories

Affanta, 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: BOSIN Enviro	onmental							
Date/Time: 12/3/10			·					
Lab ID#: 39936C	)							
Initials: XIV			·					
· .		S	ample Receipt Ch	necki	ist			
1. Samples on ice?	, , , , , , , , , , , , , , , , , , , ,				Blue	Water	No	
2. Shipping container in	good condition?			Mes >	No	None		
3. Custody seals intact	on shipping contain	<u>er (cc</u>	ooler) and bottles?		Yes	No	N/A	
4. Chain of Custody pre	sent?				TES	No		
5. Sample instructions	complete on chain o	f cus	tody?		Yes	No		
6. Any missing / extra s	amples?				Yes	No		
7. Chain of custody sig	ned when relinquish	ed / r	eceived?		Yes	No		
8. Chain of custody agr	rees with sample lab	el(s)?	·		TES	No		
9. Container labels legi	ble and intact?				Yes	No		·
10. Sample matrix / pro	perties agree with c	hain d	of custody?		Yes	No ·		
11. Samples in proper of	container / bottle?		* <del></del>		(Yes)	No		<del>_</del>
12. Samples property p	reserved?				Yes	No	N/A	
13. Sample container in	ntact?				Yes	No	<u> </u>	
14. Sufficient sample a	mount for indicated	test(s	3)?		Yes	No	·	<u> </u>
15. All samples receive	d within sufficient h	old ti	me?		(Yes	No		
16. Subcontract of sam	iple(s)?		·····		Yes	No	N/A	·
17. VOC sample have z	ero head space?		·		Yes	No	N/A )	
18. Cooler 1 No.	Cooler 2 No.		Cooler 3 No.		Cooler 4 No	o	Cooler 5 No.	
lbs () °	C lbs	°C	lbs	ႚင	lbs	°c	lbs	°C
	. 1	None	conformance Dod	ume	ntation			
Contact:	Contac	ted h	W:			Date/Time:		
			, ·					<del></del>
Regarding:				<u> </u>				
	·							
Corrective Action Take	∍n:							
					····			,
							· · · · · · · · · · · · · · · · · · ·	
Obsels all the target								<del> </del>
Check all that apply:			egun shortly after sai able by NELAC 5.5.8.			out of tempe	rature	•

□ 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



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):

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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	<b>Date Collected</b>	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

Sample receipt non conformances and Comments:

None

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 Analys

# Jummary 399251

## 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 Managers Brent Barron II

			15+		Project Manager:	Brent Barron, II	
	Lab Id:	399251-001					
Analysis Requested	Field Id:	VZ Cell 14 G-1	,				
Anatysis Requesteu	Depth:			•			
	Matrix:	SOIL					
	Sampled:	Dec-01-10 08:55					
Anions by E300	Extracted:		,				<del></del>
	Analyzed:	Dec-06-10 10:19					
	Units/RL:	mg/kg RL					
Chloride		ND 9.38					
BTEX by EPA 8021B	Extracted:	Dec-06-10 14:00					
-	Analyzed:	Dec-06-10 17:27					
	Units/RL:	mg/kg RL					
Benzene		ND 0.0011					
Toluene		ND 0.0022					
Ethylbenzene		ND 0.0011		( <del>-</del>			
m_p-Xylenes		ND 0.0022					
o-Xylene		ND 0.0011					
Total Xylenes		ND 0.0011					
Total BTEX		ND 0.0011					
Percent Moisture	Extracted:						
	Analyzed:	Dec-06-10 12:55					
	Units/RL:	.% RL	-				
Percent Moisture		10.4 1.00					
TPH By SW8015 Mod	Extracted:	Dec-06-10 10:00				•	
•	Analyzed:	Dec-06-10 14:15	,				
	Units/RL:	mg/kg RL					
C6-C12 Gasoline Range Hydrocarbons		ND 16.8					-
C12-C28 Diesel Range Hydrocarbons		ND 16.8 ND 16.8					
C28-C35 Oil Range Hydrocarbons Total TPH		ND 16.8					
TOTAL TELE		1410 10.0				<u> </u>	

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



Project Name: Southern Union Gas Landfarm

'ork Orders: 399251, ,

Project ID:

Lab Batch #: 834760

Sample: 590531-1-BKS / BKS

Batch:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 15:08	SU	RROGATE RI	ECOVERY S	STUDY	_
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene			<u> </u>		
	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

Units: mg/kg Date Analyzed: 12/06/10 16:18	SURROGATE RECOVERT STORT			31001	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes	, 11-3	. [2]	[D]	/311	
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:

Matrix: Solid

Units: mg/kg	Date Analyzed: 12/06/10 16:41	, su	RROGATE R	ECOVERY	STUDY	
ВТЕХ	X by EPA 8021B	Amount Found [A]	True Amount {B}	Recovery %R	Control Limits %R	Flags
٠	Analytes	(**)	[2]	[D]	/•••	
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 17:27	SU	RROGATE RI	ECOVERY S	STUDY	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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	SU	RROGATE RE	COVERY	STUDY	
BTE	K by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
	Analytes			[D]		
1,4-Difluorobenzene		0.0143	0.0300	48	80-120	*
4-Bromofluorobenzene		0.0132	0.0300	44	80-120	*

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits, data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

Work Orders: 399251,

Project ID:

Lab Batch #: 834760

Sample: 399251-001 SD / MSD

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 18:14	30	KROGATE K	ECOVERI	31001	
BTEX by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

<b>Units:</b> mg/kg <b>Date Analyzed:</b> 12/06/10 12:50	SU	RROGATE RI	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 13:1	9 SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 13:48	SU	RROGATE RI	ECOVERY	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: 399251-001 / SMP

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 14:15	SU	RROGATE RI	ECOVERY	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	49.6	50.1	99	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399251,

Sample: 399258-005 S / MS

**Project ID:** 

Lab Batch #: 834726

Matrix: Soil

Units: mg/kg	Date Analyzed: 12/07/10 00:42	su	SURROGATE RECOVERY STUDY											
ТРН	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:

Batch:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/07/10 01:12	SU	RROGATE R	ECOVERY	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			, [D]		
I-Chlorooctane	110	100	110	70-135	
o-Terphenyl	49.6	50.0	99	70-135	

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



## **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

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	(A)	[B]	[C]	[D]	[E]	Result [F]	[G]	/ <b>V</b>	/010	,0KL D	
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	/ RI ANK CDIK	E DIIDI ICATE	DECOVEDV STUDY
DUALIK (DUALIK SI IKI	A DEWINE OF THE	E DUI LICATE	RECOVERT STODI

Anions by E300	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes	[A]	[B]	[C]	[D]	[E]	Result [F]	[G]	,,		70202	
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 #: 399251

Analyst: BEV

Date Prepared: 12/06/2010

**Project ID:** 

Date Analyzed: 12/06/2010

Lab Batch ID: 834726 Sa

Sample: 590506-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY											
TPH By SW8015 Mod  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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

QC- Sample ID: 399244-001 S

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Project ID:

**Analyst: LATCOR** 

Batch #:

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

BRL - Below Reporting Limit



**MSD Recoveries** Form 3 - M.

Project Name: Southern Union Gas Landfarm



Work Order #: 399251 Lab Batch ID: 834760

QC- Sample ID: 399251-001 S

Batch #:

Matrix: Soil

Project ID:

**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]		Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Fiag				
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 #:

Matrix: Soil 1

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	Spike	Spiked Sample Result	Sample		Duplicate Spiked Sample	Spiked Dup.	RPD	Control Limits	Control Limits	Flag				
Analytes	Result [A]	Added [B]	[C]	%R [D]	Added [E]	Result [F]	%R [G]	%	%R	%RPD					
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	ĺ				

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

ApplicableN = See Narrative, EQL = Estimated Quantitation Limit

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not

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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399251

Lab Batch #: 834907

Project ID:

Date Analyzed: 12/06/2010 10:19

Date Prepared: 12/06/2010

Analyst: LATCOR

QC- Sample ID: 399244-001 D

Batch #: 1

Matrix: Soil

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVER										
	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 #:

Matrix: Soil

Reporting Units: %

SAMPLE / SAMPLE DUPLICATE RECOVERY

Reporting Units. 70	SAMI LE	SAMI DE SAMI DE DOI DICATE RECOVERT												
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag									
Analyte	, ,	[B]												
Percent Moisture	5.58	5.83	4	20										

# Page

# **Environmental Lab of Texas**

Commission of the Commission of the State of the Commission of the State of the Sta

#### 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	·														Pr	ojec	t Na	me:	Sou	ıthe	rn L	Inio	n G	as l	_and	dtari	<u>m</u>		
	Company Name	Basin Environmental S	Services	Techn	ologies, LLC													Pr	ojec	t#:_											
٠	Company Address:	P.O. Box 301															ı	Proje	ect L	oc: <u>l</u>	_ea	Cou	n <b>ty</b> ,	NM							
	City/State/Zip:	Lovington, NM 88260														-			PC	) #: _		•	717	87	<b>z_</b>				· 		
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ORDE	R#: 39985							Γ	Pre	serv	ation	n & #	of Co	ntain	ers	М	atrix	[ <u></u>		_	TOT		Ф	+	X	1			1	48, 72 hrs	
LAB # (lab use only)		LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	#. of Containers			ŦĊ		Na,S,O,		Other ( Specify)	StSludg	CW = Groundwater S=50il/50il NP=Non-Potable Specify Oth	19/	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl. SO4, Alkalinity)	SAR / ESP / CEC	Metals: As Ag ba Cd Cr Pb Hg Se	Semivolatiles	BTEX 80218/5030 or BTEX 8260	RCI	W.	CI- F.300		24	Γ
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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

# Prelogin / Nonconformance Report - Sample Log-In

Client: Betan Environmental				
Date/Time:  2/3/10 1-45				
Lab ID#: 399351				
Initials: XM				
Sample Receipt Che	cklist			
1. Samples on ice?	Blue	Water	No	
2. Shipping container in good condition?	(es)	No	None	
3. Custody seals intact on shipping container (cooler) and bottles?	Yes	No	N/A	
4. Chain of Custody present?	185	No		
5. Sample instructions complete on chain of custody?	TEN	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)?	(AS)	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 property 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	NA	· <del></del>
17. VOC sample have zero head space?	Yes	No	N/A	
18. Cooler 1 No. Cooler 2 No. Cooler 3 No.	Cooler 4 No	o	Cooler 5 No.	
ibs O°C ibs °C ibs	°C lbs	°c	lbs	°c
Nonconformance Docu	mentation			
Contact:Contacted by:		Date/Time:		
January Dy.		Date Hille.	<del></del>	
Regarding:		·		<del></del>
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Corrective Action Taken:			<del></del>	
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Check all that apply:  Cooling process has begun shortly after samp		out of tempe	rature	

□ 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)

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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

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## **Sample Cross Reference 399252**



## Southern Union Gas Services- Monahans, Monahans, TX

Southern Union Gas Landfarm

Sample 1d VZ Cell 15 G-1 Matrix S Date Collected

Sample Depth

Lab Sample Id

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

Sample receipt non conformances and Comments:

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



#### Jummary 399252 Certificate of Analys

## 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

Toject Education. Dea County, 14192				Project Manager:	Brent Barron, II	
	Lab Id:	399252-001				
Analysis Requested	Field Id:	VZ Cell 15 G-1				
Analysis Requesieu	Depth:					
	Matrix:	SOIL				
	Sampled:	Dec-01-10 13:05				
Anions by E300	Extracted:					
	Analyzed:	Dec-06-10 10:19				
	Units/RL:	mg/kg RL,				
Chloride		10.6 9.25				
BTEX by EPA 8021B	Extracted:	Dec-06-10 08:30				
	Analyzed:	Dec-06-10 20:11				
	Units/RL:	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				
Percent Moisture	Extracted:					
	Analyzed:	Dec-06-10 12:55				
	Units/RL:	%. RL				
Percent Moisture		9.21 1.00				
TPH By SW8015 Mod	Extracted:	Dec-06-10 10:00				
	Analyzed:	Dec-06-10 14:43				
	Units/RL:	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				<u>.                                    </u>
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 Laboratorics 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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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



Project Name: Southern Union Gas Landfarm

7ork Orders: 399252,

Lab Batch #: 834653

Sample: 590469-1-BKS / BKS

**Project ID:** 

Matrix: Solid

Units: mg/kg	Date Analyzed: 12/06/10 10:06	SU	RROGATE RI	ECOVERY	STUDY	
ВТЕХ	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R.	Control Limits %R	Flags
	Analytes			[D]		
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:

Matrix: Solid

Units: mg/kg	<b>Date Analyzed:</b> 12/06/10 10:28	SURROGATE RECOVERY STUDY						
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags		
Analytes				[D]		• .		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 11:32	SURROGATE RECOVERY STUDY						
BTEX by EPA 8021B  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
1,4-Difluorobenzene	0.0214	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	Control Limits %R	Flags	
Analytes			[D]	ĺ		
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  Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags	
1,4-Difluorobenzene	0.0274	0.0300	91	80-120		
4-Bromofluorobenzene	0.0307	0.0300	102	80-120		

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>\*</sup>II results are based on MDL and validated for QC purposes.



Project Name: Southern Union Gas Landfarm

Work Orders: 399252,

**Project ID:** 

Lab Batch #: 834653

Sample: 399252-001 / SMP

Batch:

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	Control Limits %R	Flags	
Analytes			[D]			
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	Control Limits %R	Flags	
Analytes			[D]	ļ		
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:

Matrix: Solid

Units: mg/kg Date Analyzed: 12/06/10 13:19	SU	SURROGATE RECOVERY STUDY					
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags		
Analytes		<u> </u>	(2)				
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:

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	Control Limits %R	Flags	
Analytes			{D}			
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:

Matrix: Soil

Units: mg/kg Date Analyzed: 12/06/10 14:43	SU	RROGATE R	ECOVERY :	STUDY	
TPH By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Analytes			<b>[D</b> ]		
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl .	49.3	50.1	98	70-135	

<sup>\*</sup> Surrogate outside of Laboratory QC limits

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

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution



Project Name: Southern Union Gas Landfarm

'ork Orders: 399252,

Lab Batch #: 834726

Sample: 399258-005 S / MS

Project ID:

Batch:

Matrix: Soil

Units: mg/kg Da	te Analyzed: 12/07/10 00:42	SU	RROGATE RE	ECOVERY S	STUDY	
TPH By SW	/8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
Anal	ytes	(**)	[12]	[D]	/ <b>U</b> R	
I-Chlorooctane		· 101	100	101	70-135	
o-Terphenyl		44.7	50.0	89	70-135	

Lab Batch #: 834726

1-Chlorooctane

o-Terphenyl

Sample: 399258-005 SD / MSD

Batch:

Matrix: Soil

99

70-135

Units: mg/kg

Date Analyzed: 12/07/10 01:12

49.6

SURROGATE RECOVERY STUDY Control Amount True TPH By SW8015 Mod Found Amount Recovery Limits [B] %R %R [A] [D] **Analytes** 110 100 110 70-135

50.0

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

<sup>\*</sup> Surrogate outside of Laboratory QC limits

<sup>\*\*</sup> Surrogates outside limits; data and surrogates confirmed by reanalysis

<sup>\*\*\*</sup> Poor recoveries due to dilution

<sup>&#</sup>x27;Il 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 SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B  Analytes	Biank Sample Resuit [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
											ļ
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

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY Units: mg/kg Blank Blank Blank Blk. Spk Control Control Anions by E300 Blank Spike Spike Spike Spike Spike Dup. RPD Limits Limits Flag Sample Result Added Added %R %RPD %R Duplicate % %R [A] Result Result [F] [B] [C] [D] $[\mathbf{E}]$ [G]**Analytes** Chloride 10.2 102 75-125 20 ND 10.0 10.3 103 10

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 #: 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 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag	
C6-C12 Gasoline Range Hydrocarbons	ND	1000	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

QC- Sample ID: 399244-001 S

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Project ID:

Analyst: LATCOR

Batch #:

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							
			ļ		<b></b>								
Chloride	ND	212	212	100	75-125								

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

BRL - Below Reporting Limit



### **MSD Recoveries Form 3 - M**





Work Order #: 399252 Lab Batch ID: 834653

QC- Sample ID: 399338-002 S

Batch #:

Date Analyzed: 12/06/2010

Date Prepared: 12/06/2010

Analyst: SEE

Matrix: Soil

Project ID:

Reporting Units: mg/kg

ceporting Units: hig/kg		MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY													
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Sample	Spike	Duplicate Spiked Sample	-	RPD	Control Limits	Control Limits	Flag				
Analytes	Result [A]	Added [B]	{C]	%R [D]	Added [E]	Result [F]	%R [G]	% .	%R	%RPD					
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	NĐ	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

**Date Analyzed:** 12/07/2010

QC-Sample ID: 399258-005 S

Batch #:

Matrix: Soil

Analyst: BEV

Reporting Units: mg/kg MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

**Date Prepared:** 12/06/2010

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



# **Sample Duplicate Recovery**



Project Name: Southern Union Gas Landfarm

Work Order #: 399252

Lab Batch #: 834907

Project ID:

Date Prepared: 12/06/2010 Analyst: LATCOR

**Date Analyzed:** 12/06/2010 10:19 **QC- Sample ID:** 399244-001 D

Batch #: 1

Matrix: Soil

QC- Sample 13. 3772 14-001 1

#: 1 Matrix: So

Reporting Units: mg/kg	SAMPLE	SAMPLE / SAMPLE DUPLICATE RECOVERY											
Anions by E300	Parent Sample Result [A]	Duplicate Result	RPD	Control Limits %RPD	Flag								
Analyte		[B]											
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: %

_					
I	SAMPLE	/SAMPL	E. DHPI	JCATE R	<b>ECOVERY</b>

Reporting Units: 70	Di kivik ibib i		DOI LIC		0 , 2211
Percent Moisture	Parent Sample Result [A]	Sample Duplicate Result	RPD	Control Limits %RPD	Flag
Analyte		[B]			
Percent Moisture	5.58	5.83	4	20	

# **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

(																•		ojec		-											
	Company Name	Basin Environment	tal Service	s Tech	nologies, LLC											•		Pr	ojec	t #: _											
(	Company Address:	P.O. Box 301											•				ı	Proje	ect L	oc: <u>l</u>	_ea C	oun	ity, N	M							
(	City/State/Zip:	Lovington, NM 882	60																PC	) #: _		•	917	81	7_						
-	Telephone No:	(575) 396-2378				Fax No:		(57	5) 3 <u>9</u>	6-1	429					F	Repor	t Fo	rmat	. [	x s	tand	ard		, 	TRE	₹P		   NF	PDE!	 S
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•	#: 399252	)						ł	Pre	serv	ation	8 /	of Co	ntain	ers	М	atrix	9			TOTA		1		X	İ				48, 72 hrs	
AB # (lab use only)		D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	ield Filtered	Total #. of Containers		£4		100 m	6			Sr-Sludg.	GW = Groundwater S=Soil/Soil	TPH: 418.1 8015M 8015B	TPH: TX 1005 TX 1006	Cations (Ca. Mg. Na. K)	Anions (Cl. SO4, Alkalinity)	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 80218/5030 or BTEX 8260	RCI	× 1	CI- 6300		RUSH TAT (Pre-Schedule) 24, 4	tandard TAT 4 DAY
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#### XENCO Laboratories

Phoenix, San Antonio, Tampa

Atlanta, Boca Raton, Corpus Christi, Dallas Houston, Miami, Odessa, Philadelphia 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: BOSINENVINOAK	1ental							
Date/Time: 12/3/10	:45		·				•	
Lab ID#: 399252								
Initials: XIV			· .					
,		Sa	ample Receipt C	hecki	ist			
1. Samples on ice?					Blue	Water	No	
2. Shipping container in goo	d condition?				(es)	No	None	
3. Custody seals intact on si		ner (co	oler) and bottles?		Yes	No	N/A	
4. Chain of Custody present				•	TES	No		
5. Sample instructions comp	olete on chain	of cust	ody?		TO	No		
6. Any missing / extra sample	les?				Yes	No		
7. Chain of custody signed v	when relinquis	hed / ro	eceived?		Yes	No		
8. Chain of custody agrees v	with sample lai	oel(s)?			TES	No		
9. Container labels legible a	nd intact?				Yes	No		
10. Sample matrix / propertie	es agree with o	hain o	f custody?		Year	No ·		
11. Samples in proper conta	iner / bottle?		<del></del>		(Yes)	No		
12. Samples property preser	rved?		_ <del></del>		Yes	No	N/A	<del></del>
13. Sample container intact	? .				Yes	No		
14. Sufficient sample amoun	nt for indicated	test(s	)?		Yes	No		
15. All samples received wit	hin sufficient l	nold tir	ne?		Yes	No		
16. Subcontract of sample(s	;)?				Yes	No	N/A	
17. VOC sample have zero i	read space?		<del>,</del>		Yes	No	N/A )	
	oler 2 No.		Cooler 3 No.		Cooler 4 No	<u>).                                    </u>	Cooler 5 No.	
lbs ⊘ °c	lbs	హ	lbs	<u>°c</u>	lbs	°c	lbs	°C
		Nonc	onformance Do	cume	ntation			
Contact:	Conta	cted by	/:			Date/Time:		
					_	•		
Regarding:			- <del> </del>		<del></del>			
<del></del>				<del></del>				
Corrective Action Taken:	·····							
·								
Check all that apply:   Co	ooling process	has be	egun shortly after sa	malina	event and o	out of tempe	rature	
	condition a	ccept	ble by NELAC 5.5.8.	3.1.a.1	•	•		•
	mai and Backu lient understan	ds and	perature confirm out	or terred with	iperature co i analysis	nditions		

**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

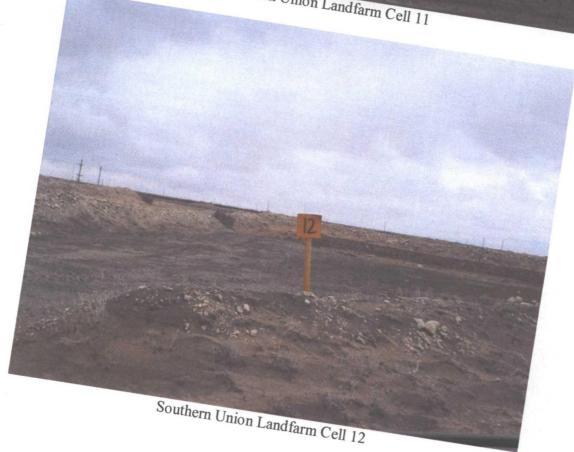


Southern Union Landfarm Cell 9



Southern Union Landfarm Cell 10







Southern Union Landfarm Cell 13



Southern Union Landfarm Cell 14



Southern Union Landfarm Cell 15