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REMEDIATION SUMMARY &

SITE CLOSURE REQUEST

SOUTHERN UNION GAS SERVICES MA-DOOM Lea County, New Mexico Unit Letter "P" (SE/SE), Section 5, Township 24 South, Range 37 East Latitude 32° 14.491' North, Longitude 103° 10.858' West NMOCD Reference # 1RP-2899

Prepared For:

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

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

January 2013

Joel W. Lowry Project Manager

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1.0 INTRODUCTION & BACKGROUND INFORMATION

Basin Environmental Service Technologies, LLC (Basin), on behalf of Southern Union Gas Services (Southern Union), has prepared this *Remediation Summary & Site Closure Request* for the release site known as MA-Doom Historical. The legal description of the release site is Unit Letter "P" (SE/SE), Section 5, Township 24 South, Range 37 East, in Lea County, New Mexico. The geographic coordinates of the release site are 32° 14.491' North latitude and 103° 10.858' West longitude. The property affected by the release is owned by Jarold and Dan Doom. Please reference Figure 1 for a "Site Location Map".

On June 4, 2009, Southern Union discovered a release had occurred on the "MA" pipeline. The "Release Notification and Corrective Action Form" (Form C-141) indicated failure of a section of ten-inch (10") low-pressure pipeline resulted in the release of greater than fifty (50) Mcf of natural gas and ten barrels (10 bbls) of crude oil. The release was reported to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office on July 31, 2009. The initial Form C-141 indicated the release affected approximately one thousand, nine hundred and fifty square feet (1,950 ft²) of pasture land. General photographs of the release site are provided as Appendix A. The Form C-141 is provided as Appendix D.

2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Water Rights Reporting System (NMWRRS) database maintained by the New Mexico Office of the State Engineer (NMOSE) indicated the average depth to groundwater for Section 5, Township 24 South, Range 37 East is approximately one hundred and seven feet (107') bgs. Based on the NMOCD ranking system, ten (10) points will be assigned to the site as a result of this criterion.

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

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

NMOCD guidelines indicate the MA-Doom Historical Release Site has an initial ranking score of ten (10) points. The soil remediation levels for a site with a ranking score of ten (10) points are as follows:

- Benzene -10 mg/Kg (ppm)
- Benzene, toluene, ethylbenzene and xylene (BTEX) 50 mg/Kg (ppm)
- Total petroleum hydrocarbons (TPH) 1,000 mg/Kg (ppm)

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

3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES

On December 4, 2012, Basin began delineation activities at the release site. A test trench was advanced within the stained area to approximately three feet (3') bgs. During the advancement of the test trench, two soil samples (SP#1 @ Surface and SP#1 @ 3') were collected and submitted to Xenco Laboratories Inc., of Odessa, Texas, for analysis of TPH and chloride concentrations in accordance with EPA Methods SW 846-8015M and 300.1, respectively. Laboratory analytical results indicated TPH concentrations ranged 1,060 mg/Kg for soil sample SP#1 @ 3' to 16,300 mg/Kg for soil sample SP#1 @ Surface. Analytical results indicated chloride concentrations ranged from 165 mg/Kg for soil sample SP#1 @ 3' to 672 mg/Kg in soil SP#1 @ Surface. Table 1 summarizes the "Concentrations of Benzene, BTEX, TPH & Chloride in Soil". Soil sample locations are depicted in Figure 2, "Site & Sample Location Map". Laboratory analytical reports are provided as Appendix B.

On December 6, 2012, the test trench was advanced to approximately twelve feet (12') bgs. During the advancement of the test trench, two (2) soil samples (SP#1 @ 8' and SP#1 @ 12') were collected and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from 4,420 mg/Kg for soil samples SP#1 @ 8' to 9,420 mg/Kg for soil sample SP #1 @ 12'. Chloride concentrations ranged from 97.1 mg/Kg for soil sample SP#1 @ 12' to 379 mg/Kg for soil sample SP#1 @ 8'.

On December 17, 2012, the test trench was advanced to approximately eighteen feet (18') bgs. During the advancement of the test trench, one (1) soil sample (SP#1 @ 15') was collected and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated the TPH concentration was less than the laboratory MDL.

On December 18, 2012, Basin began excavation activities at the release site. The excavation floor and sidewalls were advanced until chloride field tests and photo-ionization detector (PID) readings suggested concentrations of chloride and TPH were less than NMOCD regulatory remediation action levels established for the site. Impacted material was stockpiled onsite pending final disposition. Two (2) soil samples (South Wall 12' bgs and North Wall 12' bgs) were collected from the excavation sidewalls and submitted to the laboratory for analysis of TPH and chloride concentrations. Laboratory analytical results indicated TPH concentrations ranged from less than the laboratory method detection limit MDL for soil sample South Wall 12' bgs to 20.4 mg/Kg for soil sample North Wall 12' bgs to 71.9 mg/Kg for soil sample South Wall 12'. TPH and chloride concentrations were less than NMOCD regulatory remediation action levels for each of the submitted soil samples.

On December 21, 2012, three (3) soil samples (East Wall 12' bgs, Floor 14' bgs and West Wall 12' bgs) were collected from the floor and sidewalls of the excavation and submitted to the laboratory for analysis of TPH concentrations. Laboratory analytical results indicated TPH concentrations were less than the appropriate laboratory MDL for each of the submitted soil samples. Soil samples East Wall 12' bgs and West Wall 12' bgs were also analyzed for chloride concentrations. Chloride concentrations ranged from 49.9 mg/Kg for soil sample East Wall 12' bgs to 97.1 mg/Kg for soil sample West Wall 12' bgs. Soil sample Floor 14' bgs was also analyzed for BTEX constituent concentrations in accordance with EPA Method SW 846-8021B. Analytical results indicated the BTEX concentration was less than the laboratory MDL. Benzene,

BTEX, TPH and chloride concentrations were less than NMOCD regulatory remediation action levels for each of the submitted soil samples.

On January 8, 2013. on receiving approval from an NMOCD representative, Basin began backfilling the excavation with locally purchased, non-impacted material. Excavation backfill was compacted in twelve-inch lifts and contoured to fit the surrounding topography. The final dimensions of the excavation were approximately forty feet (40') in length, thirty-five feet (35') in width, and approximately five feet (5') in depth. The final dimensions of the flowpath area were approximately three hundred fifty feet (350') in length, ten feet (10') in width, and ranged in depth from twelve inches (12'') to eighteen inches (18'') bgs.

Between December 20 and 27, 2012, approximately five hundred and fifty-two cubic yards (552 yd³) of impacted material was transported to Doom Landfarm (Discharge Permit # 0033) for treatment. Copies of disposal manifests are provided as Appendix C.

4.0 QA/QC PROCEDURES

4.1 Soil Sampling

Soil samples were delivered to Xenco Laboratories, Inc., of Odessa, Texas, for BTEX, TPH, and/or chloride analyses using the methods described below:

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

4.2 Decontamination of Equipment

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

4.3 Laboratory Protocol

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

5.0 SITE CLOSURE REQUEST

Confirmation soil samples collected from the floor and sidewalls of the MA-Doom excavation were analyzed by an NMOCD-approved laboratory, which determined concentrations of benzene, BTEX, TPH and chloride were less than the regulatory remediation action levels established for the site. Based on these laboratory analytical results, Basin recommends Southern Union provide the NMOCD Hobbs District Office a copy of this *Remediation Summary & Site Closure Request* and request the NMOCD grant site closure to the MA-Doom Historical release site.

6.0 LIMITATIONS

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

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

7.0 DISTRIBUTION:

Copy 1: Geoffrey Leking New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (District 1) 1625 French Drive Hobbs, NM 88240 GeoffreyR.Leking@state.nm.us

Copy 2: Rose Slade Southern Union Gas Services 801 S. Loop 464 Monahans, Texas 79756 rose.slade@sug.com

Copy 3: Basin Environmental Service Technologies, LLC P.O. Box 301 Lovington, New Mexico 88260





TABLE 1

CONCENTRATIONS OF BENZENE, BTEX, TPH & CHLORIDE IN SOIL

SOUTHERN UNION GAS SERVICES MA-DOOM HISTORICAL RELEASE SITE LEA COUNTY, NEW MEXICO NMOCD REF# 1RP-2899

SAMPLE LOCATION	SAMPLE DEPTH (BGS)	SAMPLE DATE	SOIL STATUS	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL- BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)	TOTAL BTEX (mg/Kg)	GRO C ₆ -C ₁₂ (mg/Kg)	DRO C ₁₂ -C ₂₈ (mg/Kg)	ORO C ₂₈ -C ₃₅ (mg/Kg)	TOTAL TPH C ₆ -C ₂₈ (mg/Kg)	CHLORIDE (mg/Kg)
SP#1 @ Surface	Surface	12/4/2012	Excavated	-	-	-	-	-	467	15,300	509	16,300	672
SP#1 @ 3'	3'	12/4/2012	Excavated	-	-	-	-	-	<18.0	978	83.1	1060	165
SP#1 @ 8'	8'	12/6/2012	Excavated	-	-	-	-	-	1030	3,290	98.6	9,820	379
SP#1 @ 12'	12'	12/6/2012	Excavated	-	-	-	-	-	2,630	6,610	182	9,420	97.1
SP#1 @ 15'	15'	12/17/2012	In-Situ	-	-	-	-	-	<16.5	<16.5	<16.5	<16.5	-
South Wall 12' bgs	12'	12/18/2012	In-Situ	-	-	-	-	-	<16.1	<16.1	<16.1	<16.1	71.9
North Wall 12' bgs	12'	12/18/2012	In-Situ	-	-	-	-	-	<16.1	20.4	<16.1	20.4	33.3
East Wall 12' bgs	12'	12/21/2012	In-Situ	-	-	-	-	-	<19.9	<19.9	<19.9	<19.9	49.9
Floor 14' bgs	14'	12/21/2012	In-Situ	<0.00104	<0.00209	<0.00104	<0.00209	<0.00209	<15.7	<15.7	<15.7	<15.7	-
West Wall 12' bgs	12'	12/21/2012	In-Situ	-	-	-	-	-	<15.9	<15.9	<15.9	<15.9	97.1
NMOCD Standard				10				50				1,000	500

- = Not analyzed.



Photograph of the initial release at the MA-Doom Historical Release Site.



Photograph of the initial release at the MA-Doom Historical Release Site.



Photograph of delineation activities at the MA-Doom Historical Release Site.



Photograph of delineation activities at the MA-Doom Historical Release Site.



Photograph of the MA-Doom Historical Release Site excavation.



Photograph of the MA-Doom Historical Release Site excavation.



Photograph of backfilling activities at the MA-Doom Historical Release Site.



Photograph of backfilling activities at the MA-Doom Historical Release Site.



Photograph of the MA-Doom Historical Release Site after being backfilled.



Photograph of the MA-Doom Historical Release Site after being backfilled.

Analytical Report 453595

for Southern Union Gas Services- Monahans

Project Manager: Ben Arguijo MA-DOOM

13-DEC-12

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



13-DEC-12



Project Manager: **Ben Arguijo Southern Union Gas Services- Monahans** 801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): **453595 MA-DOOM** Project Address: Lea County, NM

Ben Arguijo:

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(s) 453595. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 453595 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

Nicholas Straccione Project Manager

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Sample Cross Reference 453595



Southern Union Gas Services- Monahans, Monahans, TX

MA-DOOM

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP#1 @ Surface	S	12-04-12 13:00		453595-001
SP#1 @ 3'	S	12-04-12 13:10		453595-002



CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans Project Name: MA-DOOM



Project ID: Work Order Number(s): 453595 Report Date: 13-DEC-12 Date Received: 12/06/2012

Sample receipt non conformances and comments: None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-902505 Inorganic Anions by EPA 300/300.1 E300

Batch 902505, Chloride recovered below QC limits Samples affected are: 453595-001, -002. The Laboratory Control Sample for Chloride is within laboratory Control Limits



Project Id:

Contact: Ben Arguijo

Project Location: Lea County, NM

Certificate of Analysis Summary 453595

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: MA-DOOM



Date Received in Lab: Thu Dec-06-12 11:30 am Report Date: 13-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	453595-0	001	453595-0	02		
Analysis Paguested	Field Id:	SP#1 @ Su	ırface	SP#1 @ 3	3'		
Analysis Kequested	Depth:						
	Matrix:	SOIL		SOIL			
	Sampled:	Dec-04-12	13:00	Dec-04-12 1	3:10		
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-08-12	17:42	Dec-08-12 1	7:59		
SUB: TX104704215	Analyzed:	Dec-08-12	17:42	Dec-08-12 1	7:59		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		672	1.01	165	1.20		
Percent Moisture	Extracted:						
	Analyzed:	Dec-10-12	09:25	Dec-10-12 0	9:25		
	Units/RL:	%	RL	%	RL		
Percent Moisture		1.52	1.00	17.0	1.00		
TPH By SW8015 Mod	Extracted:	Dec-07-12	08:30	Dec-07-12 0	8:30		
	Analyzed:	Dec-07-12	13:03	Dec-07-12 1	3:37		
	Units/RL:	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		467	152	ND	18.0		
C12-C28 Diesel Range Hydrocarbons		15300	152	978	18.0		
C28-C35 Oil Range Hydrocarbons		509	152	83.1	18.0		
Total TPH		16300	152	1060	18.0		

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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Ctr. Nul

Nicholas Straccione Project Manager



Flagging Criteria

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

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 (432) 563-1713

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 (770) 449-5477

 (602) 437-0330
 (432) 563-1713

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: MA-DOOM

Vork Orders : 453595	, 453595	Project ID:									
Lab Batch #: 902402	Sample: 453595-001 / SMP	Batc	h: ¹ Matrix:	Soil							
Units: mg/kg	Date Analyzed: 12/07/12 13:03	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	99.6	101	70-135						
o-Terphenyl		59.5	49.8	119	70-135						
Lab Batch #: 902402	Sample: 453595-002 / SMP	Batc	h: ¹ Matrix:	Soil							
Units: mg/kg	Date Analyzed: 12/07/12 13:37	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		87.0	99.8	87	70-135						
o-Terphenyl		44.4	49.9	89	70-135						
Lab Batch #: 902402	Sample: 630894-1-BLK / B	LK Bate	h: ¹ Matrix:	Solid							
Units: mg/kg	Date Analyzed: 12/07/12 12:35	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		92.8	100	93	70-135						
o-Terphenyl		44.9	50.0	90	70-135						
Lab Batch #: 902402	Sample: 630894-1-BKS / B	KS Batc	h: 1 Matrix:	Solid	I						
Units: mg/kg	Date Analyzed: 12/07/12 10:51	SU	RROGATE RI	ECOVERY	STUDY						
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags					
	Analytes			נטן							
1-Chlorooctane		91.1	100	91	70-135						
o-1 erpnenyl		52.7	50.1	105	70-135						
Lab Batch #: 902402	Sample: 630894-1-BSD / B	SD Bate	h: 1 Matrix:	Solid							
Units: mg/kg	Date Analyzed: 12/07/12 12:04	SU	RROGATE RE	ECOVERY ;	STUDY	1					
TPH 1	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		88.8	99.8	89	70-135						
o-Terphenyl		54.9	49.9	110	70-135						

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

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



Form 2 - Surrogate Recoveries

Project Name: MA-DOOM

Work Orders : 453595	, 453595	Project ID:									
Lab Batch #: 902402	Sample: 453592-001 S / MS	S Batch: 1 Matrix: Soil									
Units: mg/kg	Date Analyzed: 12/08/12 00:59	SU	RROGATE RI	ECOVERY	COVERY 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		54.1	50.1	108	70-135						
Lab Batch #: 902402	Sample: 453592-001 SD / N	ASD Bate	h: 1 Matrix:	Soil							
Units: mg/kg	Date Analyzed: 12/08/12 01:33	SURROGATE RECOVERY STUDY									
ТРН	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		96.1	100	96	70-135						
o-Terphenyl		54.8	50.1	109	70-135						

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

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





Project Name: MA-DOOM

Work Order #: 453595, 453595					Project ID:											
Analyst: JOL	Da	Date Prepared: 12/08/2012 Date Analyzed: 12/08/2012														
Lab Batch ID: 902505 Sample: 630973-1	-BKS	Batch	n#: 1		Matrix: Solid											
Units: mg/kg	BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY															
Inorganic Anions by EPA 300/300.1	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	<1.00	100	97.7	98	100	97.0	97	1	80-120	20						
Analyst: KEB	Da	ate Prepar	ed: 12/07/201	12			Date A	nalyzed: 1	2/07/2012							
Analyst: KEBLab Batch ID: 902402Sample: 630894-1	Da -BKS	ate Prepar Batcl	ed: 12/07/201 h #: 1	12			Date A	nalyzed: 1 Matrix: S	2/07/2012 Solid							
Analyst: KEB Lab Batch ID: 902402 Sample: 630894-1 Units: ^{mg/kg}	D: -BKS	ate Prepar Batcl BLAN	ed: 12/07/201 n #: 1 K /BLANK S	12 SPIKE / H	BLANK S	PIKE DUPI	Date A	nalyzed: 1 Matrix: S RECOVE	2/07/2012 Solid CRY STUD	Y						
Analyst: KEB Lab Batch ID: 902402 Sample: 630894-1 Units: ^{mg/kg} TPH By SW8015 Mod Analytes	Da -BKS Blank Sample Result [A]	ate Prepar Batcl BLAN Spike Added [B]	ed: 12/07/201 n #: 1 K /BLANK S Blank Spike Result [C]	SPIKE / H Blank Spike %R [D]	BLANK S Spike Added [E]	Blank Blank Spike Duplicate Result [F]	Date An JCATE	nalyzed: 1 Matrix: S RECOVE RPD %	2/07/2012 Solid CRY STUD Control Limits %R	Y Control Limits %RPD	Flag					
Analyst: KEB Lab Batch ID: 902402 Sample: 630894-1 Units: mg/kg TPH By SW8015 Mod Analytes C6-C12 Gasoline Range Hydrocarbons	-BKS Blank Sample Result [A] <15.0	ate Prepar Batcl BLAN Spike Added [B] 1000	ed: 12/07/201 n #: 1 K /BLANK S Blank Spike Result [C] 1030	SPIKE / H Blank Spike %R [D] 103	BLANK S Spike Added [E] 998	Blank Blank Spike Duplicate Result [F] 983	Date And Dat	nalyzed: 1 Matrix: S RECOVE RPD %	2/07/2012 Solid CRY STUD Control Limits %R 70-135	Y Control Limits %RPD 35	Flag					

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: MA-DOOM



NI 1 0 1 // 452505											
Work Order #: 453595				Pr	oiect ID:						
Date Analyzed: 12/08/2012	Date I	Prepared: 12/0	8/2012	Ā	Analyst: J(JL					
QC- Sample ID: 453595-001 S		Batch #: 1 Matrix: Soil									
Reporting Units: mg/kg		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		672	101	596	0	80-120	X				
Lab Batch #: 902505											
Date Analyzed: 12/08/2012	Date I	Prepared: 12/0	8/2012	A	Analyst: J(JL					
QC- Sample ID: 453597-002 S		Batch #: 1]	Matrix: S	oil					
Reporting Units: mg/kg		MATE	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		172	103	242	68	80-120	X				

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 - MS / MSD Recoveries

Project Name: MA-DOOM



Work Order #: 453595 **Project ID:** Lab Batch ID: 902402 QC- Sample ID: 453592-001 S Batch #: Matrix: Soil 1 **Date Prepared:** 12/07/2012 Analyst: KEB **Date Analyzed:** 12/08/2012 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 Spiked Sample RPD Limits Spike Sample Spike Dup. Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] C6-C12 Gasoline Range Hydrocarbons <16.0 1060 1110 105 1060 1100 104 1 70-135 35 1130 107 105 2 C12-C28 Diesel Range Hydrocarbons <16.0 1060 1060 1110 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

Page 11 of 14



Sample Duplicate Recovery



Project Name: MA-DOOM

Work Order #: 453595

Lab Batch #: 902481				Project I	D:	
Date Analyzed: 12/10/2012 09:25	Date Prepar	ed: 12/10/2012	2 Anal	lyst: WRU		
QC- Sample ID: 453595-001 D	Batch	n#: 1	Mat	rix: 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		1.52	1.47	3	20	

Xenco Laboratories

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 J. Arguijo; Joel Lov	vry	· .								<u></u>				_	Pr	ojec	t Na	me:	MA	-DC	ON	1	:						
 	Company Name	Basin Environmental Se	rvice 1	echno	logies, LLC	11.1.1. 					ł.							Pi	ojec	:t #:								· · · ·		· ·	· · · ·
	Company Address:	P.O. Box 301					: `	· ·						1			. [Proje	ect L	.oc:	Lea	Οοι	inty,	NM	1						
•	City/State/Zip:	Lovington, NM 88260			· · · · ·					1						:			PC) #:	Bill	Sou	ther	n Uı	nion	Gas	Serv	ices			
1	Telephone No:	(575)396-2378				Fax No:		(57	'5) 39	96-14	29						Repor	t Fo	rmat		X	Stan	dard		Ξ		RP			PDF	
	Sampler Signature:	gael for	ú	4		e-mail:		pm	n@ba	sine	nv.c	com	cui	t.sta	nley		ug.com	ros	e.sla	de@)sug	.cor	n	: .							
lab use	only) R#: 4535	nh-1	45	53	595				Dre		ation	- R.#	of	onta	iners	<u>.</u>	Matrix			: · ·	тс тот	LP: AL:	Ana		For:					3, 72 hrs	
LAB # (lab use only)	FIEI	LD CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lice	NNO ³	HCI	H ₂ SO ₄	NaOH	Na ₂ S ₂ O ₃	Other (Specify)	DW=Drinking Water SL=Sludg	GW = Groundwater S = Soll/Soll NP = Non-Potable Specify Othe	TPH: 418.1 8015M 8015E	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		Semivolatiles BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	CHLORIDES	Total Dissolved Solids	RUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
	SP#1	@ Surface			12/4/2012	1300		1	X							Τ	Soil	X	·				Ť		1			x		T	x
	SP	#1 @ 3'			12/4/2012	1310		1	x								Soil	X									\square	x			x
											1						÷ :						:								
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pecial	Instructions:	Hold SP#1 @ 3' for BT	EX			· · ·				<u>.</u>		· :						•••		Labo Sam VOC	ple Fr	ory (Cont	Com aine f He	men rs Ir adsi	its: itact? pace'	, ,		Ę	Ì	N.	
Relinquis	shed by: 1 thed by:	Date	т 7: (т	ime うし(ime	Received by:	etr			·					- - - -		late SI Jate	26	Time DQ Time	אר אר י	Labe Cust Cust Sam	ody ody ody ple I oy Sa	n co seal seal lanc ample	ntair s on s on I De er/Cl	ier(s con coo liver ient	itaine iler(s) ed Rep.	r(s) ?				Z	
Relinquis	shed by:	Date	Т	ime		nie	\cap	1	i4	h))	2n	late (e -	121	Time	30	Tem	pera	ture	Upo	in Ri	eceip	0Ś)	8	°C	



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- MonahanAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 12/06/2012 11:30:00 AMAir and Metal samples Acceptable Range: AmbientWork Order #: 453595Temperature Measuring device used :

Sa	mple Receipt Checklist	Comments
#1 *Temperature of cooler(s)?		.5
#2 *Shipping container in good condition?	١	/es
#3 *Samples received on ice?	١	/es
#4 *Custody Seals intact on shipping containe	r/ cooler?	/es
#5 Custody Seals intact on sample bottles?	١	/es
#6 *Custody Seals Signed and dated?	١	(es
#7 *Chain of Custody present?	١	(es
#8 Sample instructions complete on Chain of	Custody?	(es
#9 Any missing/extra samples?		No
#10 Chain of Custody signed when relinquishe	ed/ received?	(es
#11 Chain of Custody agrees with sample labe	el(s)?	(es
#12 Container label(s) legible and intact?	١	(es
#13 Sample matrix/ properties agree with Cha	in of Custody?	(es
#14 Samples in proper container/ bottle?	١	(es
#15 Samples properly preserved?	١	(es
#16 Sample container(s) intact?	١	(es
#17 Sufficient sample amount for indicated tes	st(s)?	(es
#18 All samples received within hold time?	١	(es
#19 Subcontract of sample(s)?	١	(es
#20 VOC samples have zero headspace (less	than 1/4 inch bubble)?	(es
#21 <2 for all samples preserved with HNO3,F	ICL, H2SO4?	(es
#22 >10 for all samples preserved with NaAsC	2+NaOH, ZnAc+NaOH? א	(es

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Date:

Checklist reviewed by:

Date: _____

Analytical Report 453782

for Southern Union Gas Services- Monahans

Project Manager: Ben Arguijo MA-Doom (Historical)

14-DEC-12

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



14-DEC-12



Project Manager: **Ben Arguijo Southern Union Gas Services- Monahans** 801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): **453782 MA-Doom (Historical)** Project Address: Lea County, NM

Ben Arguijo:

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(s) 453782. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 453782 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

Nicholas Straccione Project Manager

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Sample Cross Reference 453782



Southern Union Gas Services- Monahans, Monahans, TX

MA-Doom (Historical)

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP#1 @ 8'	S	12-06-12 13:10		453782-001
SP#1 @ 12'	S	12-06-12 13:40		453782-002

CASE NARRATIVE



Client Name: Southern Union Gas Services- Monahans Project Name: MA-Doom (Historical)



Project ID: Work Order Number(s): 453782 Report Date: 14-DEC-12 Date Received: 12/10/2012

Sample receipt non conformances and comments: None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-902670 TPH By SW8015 Mod SW8015MOD_NM

Batch 902670, C12-C28 Diesel Range Hydrocarbons recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Samples affected are: 453782-001, -002. The Laboratory Control Sample for C12-C28 Diesel Range Hydrocarbons is within laboratory Control Limits



Project Id:

Contact: Ben Arguijo

Project Location: Lea County, NM

Certificate of Analysis Summary 453782

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: MA-Doom (Historical)



Date Received in Lab: Mon Dec-10-12 09:46 am

Report Date: 14-DEC-12

Project Manager: Nicholas Straccione

Analysis Requested	Lab Id:	453782-0	001	453782-0	02		
	Field Id:	SP#1 @	8'	SP#1 @ 1	12'		
	Depth:						
	Matrix:	SOIL		SOIL			
	Sampled:	: Dec-06-12 13:10		Dec-06-12 13:40			
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-11-12 10:00		Dec-11-12 10:00			
SUB: TX104704215	Analyzed:	Dec-11-12	18:49	Dec-11-12 1	18:49		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		379	1.13	97.1	1.09		
Percent Moisture	Extracted:						
	Analyzed:	Dec-10-12 16:37		Dec-10-12 16:37			
	Units/RL:	%	RL	%	RL		
Percent Moisture		11.4	1.00	8.28	1.00		
TPH By SW8015 Mod Extracted: Analyzed:		Dec-11-12 14:30		Dec-11-12 14:30			
		Dec-12-12 04:09		Dec-12-12 11:28			
	Units/RL:	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		1030	16.9	2630	81.5		
C12-C28 Diesel Range Hydrocarbons		3290	16.9	6610	81.5		
C28-C35 Oil Range Hydrocarbons		98.6	16.9	182	81.5		
Total TPH		4420	16.9	9420	81.5		

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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Version: 1.%

Ct. Nul

Nicholas Straccione Project Manager



Flagging Criteria

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

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 (770) 449-5477

 (602) 437-0330
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Final 1.000



Form 2 - Surrogate Recoveries

Project Name: MA-Doom (Historical)

Vork Orders: 453782	-,		Project II):						
Lab Batch #: 902670	Sample: 453782-001 / SMP	Batch: 1 Matrix: Soil SURROGATE RECOVERY STUDY								
Units: mg/kg	Date Analyzed: 12/12/12 04:09									
ТРН Ј	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1.011	Analytes	00.5	100	L= .	70.125					
I-Chlorooctane		98.5	50.1	100	70.125	r				
	172702 000 (G) (D)		50.1	105	/0-155					
Lab Batch #: 902670	Sample: 453782-002 / SMP	Batch: 1 Matrix: Soil								
Units: mg/kg	Date Analyzed: 12/12/12 11:28	501	RROGATE RE	COVERY 2	STUDY					
ТРН І	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		101	99.7	101	70-135					
o-Terphenyl		53.1	49.9	106	70-135					
Lah Batch #: 902670	Sample: 631085-1-BLK / BI	K Batcl	h· 1 Matrix	• Solid	<u> </u>					
Units: mg/kg	Date Analyzed: 12/11/12 18:57	SURROGATE RECOVERY STUDY								
ТРН Ј	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		97.2	99.6	98	70-135					
o-Terphenyl		48.8	49.8	98	70-135					
Lab Batch #: 902670	Sample: 631085-1-BKS / BK	CS Batel	h: 1 Matrix:	Solid	<u>.</u>					
Units: mg/kg	Date Analyzed: 12/11/12 17:56	SU!	RROGATE RF	COVERY	STUDY					
ТРН Ј	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		102	99.7	102	70-135	1				
o-Terphenyl		61.4	49.9	123	70-135					
Lab Batch #: 902670	Sample: 631085-1-BSD / BS	D Batcl	h: 1 Matrix	:Solid	<u> </u>					
Units: mg/kg	Date Analyzed: 12/11/12 18:27	SURROGATE RECOVERY STUDY								
ТРН Ј	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags					
1-Chlorooctane		99.6	100	100	70-135	i				
o-Terphenyl		55.0	50.1	110	70-135					

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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


Project Name: MA-Doom (Historical)

Work Orders: 453782	,		Project II):					
Lab Batch #: 902670	Sample: 453701-006 S / MS	S Bate	h: ¹ Matrix:	Soil					
Units: mg/kg	Date Analyzed: 12/12/12 05:02	SU	RROGATE RI	ECOVERY S	STUDY				
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane	Analytes	96.6	100	97	70-135				
o-Terphenyl		55.8	50.0	112	70-135				
Lab Batch #: 902670	Sample: 453701-006 SD / N	MSD Batc	h: ¹ Matrix:	Soil					
Units: mg/kg	Date Analyzed: 12/12/12 05:28	SURROGATE RECOVERY STUDY							
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags			
1-Chlorooctane		96.6	100	97	70-135				
o-Terphenyl		49.2	50.0	98	70-135				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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



Project Name: MA-Doom (Historical)

Work Order #: 453782					Project ID:										
Analyst: JOL		Da	ate Prepar	ed: 12/11/201	2			Date A	nalyzed:]	2/11/2012					
Lab Batch ID: 902591	Sample: 631032-1-F	3KS	Batch	n#: 1					Matrix: S	Solid					
Units: mg/kg			BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	JCATE 1	RECOVERY STUDY Spk Control Control p. RPD Limits Limits R % %R %RPD						
Inorganic Anions by	EPA 300/300.1	Blank Sample Result [A]	Blank nple ResultSpike AddedBlank SpikeSpike AddedBlank SpikeBlank AddedBlank 							Flag					
Analytes			[B]	[C]	[D]	[E]	Result [F]	[G]							
Chloride		<1.00	100	99.1	99	100	98.7	99	0	80-120	20				
						Date Analyzed: 12/11/2012									
Analyst: KEB		Da	ate Prepar	ed: 12/11/201	2			Date A	nalyzed: 1	2/11/2012					
Analyst: KEB Lab Batch ID: 902670	Sample: 631085-1-F	Da BKS	ate Prepar Batcl	ed: 12/11/201	2			Date A	nalyzed: 1 Matrix: S	2/11/2012 Solid					
Analyst: KEB Lab Batch ID: 902670 Units: ^{mg/kg}	Sample: 631085-1-F	Da 3KS	ate Prepar Batcl BLAN	ed: 12/11/201 n #: 1 K /BLANK S	2 SPIKE / E	BLANK S	PIKE DUPI	Date A	nalyzed: 1 Matrix: S RECOVI	2/11/2012 Solid ERY STUD	Y				
Analyst: KEB Lab Batch ID: 902670 Units: ^{mg/kg} TPH By SW80 Analytes	Sample: 631085-1-F	Da 3KS Blank Sample Result [A]	nte Prepar Batcl BLAN Spike Added [B]	ed: 12/11/201 n #: 1 K /BLANK S Blank Spike Result [C]	2 SPIKE / E Blank Spike %R [D]	BLANK S Spike Added [E]	PIKE DUPI Blank Spike Duplicate Result [F]	Date An JCATE J Blk. Spk Dup. %R [G]	nalyzed: 1 Matrix: 5 RECOVI RPD %	2/11/2012 Solid ERY STUD Control Limits %R	Y Control Limits %RPD	Flag			
Analyst: KEB Lab Batch ID: 902670 Units: mg/kg TPH By SW80 Analytes C6-C12 Gasoline Range Hydroc	Sample: 631085-1-F 015 Mod	Da BKS Blank Sample Result [A]	nte Prepar Batcl BLAN Spike Added [B] 997	ed: 12/11/201 n #: 1 K /BLANK S Blank Spike Result [C] 1020	2 SPIKE / F Blank Spike %R [D] 102	BLANK S Spike Added [E]	PIKE DUPI Blank Spike Duplicate Result [F]	Date An JCATE 1 Blk. Spk Dup. %R [G] 105	nalyzed: 1 Matrix: S RECOVH RPD %	2/11/2012 Solid ERY STUD Control Limits %R	Y Control Limits %RPD	Flag			

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: MA-Doom (Historical)

Work Order #: 453782											
Lab Batch #: 902591	Project ID:										
Date Analyzed: 12/11/2012 Date	Prepared: 12/11/2012 Analyst: JOL										
QC- Sample ID: 453785-001 S	Batch #: 1 Matrix: Soil										
Reporting Units: mg/kg	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	6.29	104	107	97	80-120						

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: MA-Doom (Historical)



Work Order #: 453782						Project I	D:				
Lab Batch ID: 902670	QC- Sample ID:	453701	-006 S	Ba	tch #:	1 Matri	x: Soil				
Date Analyzed: 12/12/2012	Date Prepared:	12/11/2	012	An	alyst:	KEB					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod	Parent Sample	Spike	Spiked Sample Result	Spiked 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	<17.5	1170	1180	101	1170	1180	101	0	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<17.5	1170	3540	303	1170	2930	250	19	70-135	35	Х

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ 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





Project Name: MA-Doom (Historical)

Work Order #: 453782

Lab Batch #: 902526		Project ID:								
Date Analyzed: 12/10/2012 16:00	Date Prepar	ed: 12/10/2012	2 Anal	yst:WRU						
QC- Sample ID: 453796-021 D	Batch	n#: 1	Mat	rix: 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		13.2	13.0	2	20					

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

Xenco Laboratories

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 J. Arguijo; Joel Low	ry			· · · .	_				1	· · ·			<u> </u>		Pr	ojeci	Na	ne:	MA	-Do	om	<u>(His</u>	tor	ical)					
	Company Name	Basin Environmental Ser	vice T	echnol	ogies, LLC													Pr	oiec	f #:-	:										
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	Company Address:	P.O. Box 301	<u> </u>			· · · · · · · · · · · · · · · · · · ·									<u> </u>		ł	Proje	ct L	oc: _	Lea	Cou	nty,	NM		•		· · · · ·	<u></u>		
	City/State/Zip:	Lovington, NM 88260								1, 1									PC) #:	Bill	Sout	herr	ı Uni	ion (Gas S	Servi	ces	•		
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Comments

Prelogin/Nonconformance Report- Sample Log-In

Work Order #: 453782	Temperature Measuring device used :
Date/ Time Received: 12/10/2012 09:46:00 AM	Air and Metal samples Acceptable Range: Ambient
Client: Southern Union Gas Services- Monahan	Acceptable Temperature Range: 0 - 6 degC

Sample Receip	t Checklist
#1 *Temperature of cooler(s)?	10.6
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	Yes
#5 Custody Seals intact on sample bottles?	Yes
#6 *Custody Seals Signed and dated?	Yes
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch b	oubble)? Yes
#21 <2 for all samples preserved with HNO3,HCL, H2SO4?	Yes
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnA	c+NaOH? Yes

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Date: _____

Checklist reviewed by:

Date: _____

Analytical Report 454441

for Southern Union Gas Services- Monahans

Project Manager: Ben Arguijo MA-DOOM

20-DEC-12

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



20-DEC-12



Project Manager: **Ben Arguijo Southern Union Gas Services- Monahans** 801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): **454441 MA-DOOM** Project Address: Lea County, NM

Ben Arguijo:

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(s) 454441. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 454441 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

Nicholas Straccione Project Manager

> Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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Sample Cross Reference 454441



Southern Union Gas Services- Monahans, Monahans, TX

MA-DOOM

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP#1 @ 15'	S	12-17-12 13:00		454441-001
SP#1 @ 18'	S	12-17-12 14:00		454441-002



CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans Project Name: MA-DOOM



Project ID: Work Order Number(s): 454441 Report Date: 20-DEC-12 Date Received: 12/19/2012

Sample receipt non conformances and comments:

hold for btex

Sample receipt non conformances and comments per sample:

None



Project Id:

Contact: Ben Arguijo

Project Location: Lea County, NM

Certificate of Analysis Summary 454441

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: MA-DOOM



Date Received in Lab: Wed Dec-19-12 02:00 pm Report Date: 20-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454441-0	01	454441-0	02		
Analysis Requested	Field Id:	SP#1@	15'	SP#1 @ 1	8'		
Anutysis Requested	Depth:						
	Matrix:	SOIL		SOIL			
	Sampled:	Dec-17-12	13:00	Dec-17-12 1	4:00		
Percent Moisture	Extracted:						
	Analyzed:	Dec-19-12	15:30	Dec-19-12 1	5:30		
	Units/RL:	%	RL	%	RL		
Percent Moisture		9.13	1.00	7.27	1.00		
TPH By SW8015 Mod	Extracted:	Dec-19-12	14:20				
	Analyzed:	Dec-20-12	05:51				
	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				
Total TPH		ND	16.5				

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

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Ct Nul

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

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LOQ Limit of Quantitation

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(281) 240-4200	(281) 240-4280
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(210) 509-3334	(210) 509-3335
(813) 620-2000	(813) 620-2033
(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Final 1.000



Project Name: MA-DOOM

Vork Orders: 454441	,		Project II):		
Lab Batch #: 903328	Sample: 454441-001 / SMP	Batch	n: 1 Matrix:	Soil		
Units: mg/kg	Date Analyzed: 12/20/12 05:51	SUI	RROGATE RE	COVERY S	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		93.1	100	93	70-135	
o-Terphenyl		45.9	50.1	92	70-135	
Lab Batch #: 903328	Sample: 631504-1-BLK / B	LK Batch	n: ¹ Matrix:	Solid		
Units: mg/kg	Date Analyzed: 12/19/12 22:14	SUI	RROGATE RE	COVERY S	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		90.9	100	91	70-135	
o-Terphenyl		43.5	50.0	87	70-135	
Lab Batch #: 903328	Sample: 631504-1-BKS / BI	KS Batch	n: 1 Matrix:	Solid	·	
Units: mg/kg	Date Analyzed: 12/19/12 21:10	SUI	RROGATE RE	COVERY S	STUDY	
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane		93.7	100	94	70-135	
o-Terphenyl		51.3	50.0	103	70-135	
Lab Batch #: 903328	Sample: 631504-1-BSD / BS	SD Batch	n: 1 Matrix:	Solid		
Units: mg/kg	Date Analyzed: 12/19/12 21:42	SUI	RROGATE RE	COVERY S	STUDY	
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
	Analytes			נען		
1-Chlorooctane		94.9	99.7	95	70-135	
	~ - 454401.000.0 () (0	55.1	49.9	100	/0-155	
Lab Batch #: 903328	Sample: 454401-002 5 / 1415		I: I Matrix:	Soll	STUDY	
Units: mg/kg	Date Analyzed: 12/20/12 08:05		KUGALL NI			
TPH]	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		50.0	50.1	100	70-135	·

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: MA-DOOM

Work Orders : 454441,		Project ID:							
Lab Batch #: 903328	Sample: 454401-002 SD / M	Sample: 454401-002 SD / MSDBatch:1Matrix: Soil							
Units: mg/kg	Date Analyzed: 12/20/12 09:00	SURROGATE RECOVERY STUDY							
TPH By SW8015 Mod		Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags			
	Analytes			[D]					
1-Chlorooctane		97.4	99.6	98	70-135				
o-Terphenyl		49.2	49.8	99	70-135				

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution





Project Name: MA-DOOM

Work Order #: 454441 Analyst: KEB Lab Batch ID: 903328	Sample: 631504-1-B	Da KS	Project ID: Date Prepared: 12/19/2012 Batch #: 1 Date Analyzed: 12/19/2012 Matrix: Solid									
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY										
TPH By SW801	15 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 Hydroca	urbons	<15.0	1000	1020	102	997	1070	107	5	70-135	35	
C12-C28 Diesel Range Hydrocar	bons	<15.0	1000	979	98	997	1030	103	5	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 / MSD Recoveries

Project Name: MA-DOOM



Work Order #: 454441 **Project ID:** Lab Batch ID: 903328 QC- Sample ID: 454401-002 S Matrix: Soil Batch #: 1 **Date Prepared:** 12/19/2012 Analyst: KEB **Date Analyzed:** 12/20/2012 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 Spiked Sample RPD Limits Spike Sample Spike Dup. Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] C6-C12 Gasoline Range Hydrocarbons <15.9 1060 1110 105 1060 1070 101 4 70-135 35 1070 101 1030 97 C12-C28 Diesel Range Hydrocarbons <15.9 1060 1060 4 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

Page 10 of 13



Sample Duplicate Recovery



Project Name: MA-DOOM

Work Order #: 454441

Lab Batch #: 903331				Project I	D:	
Date Analyzed: 12/19/2012 15:07	Date Prepar	red: 12/19/2012	2 Anal	lyst:WRU		
QC- Sample ID: 454401-009 D	Batcl	n#: 1	Mat	rix: 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		5.62	5.51	2	20	

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

BRL - Below Reporting Limit

Xenco Laboratories

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 J. Arguijo; Joel Low	J. Arguijo; Joel Lowry									Project Name: MA-DOOM																	
	Company Name	Basin Environmental Ser	vice T	echnol	ogies, LLC			<u></u>					·	······		F	roje	ct #:	·····	a ba		·							
	Company Address:	P.O. Box 301				· · · ·									Project Loc: Lea County, NM														
	City/State/Zip:	Lovington, NM 88260													PO #: Bill Southern Union Gas														
	Telephone No:	(575)396-2378				Fax No:		(57	5) 39	6-1 4	29		: *		Rep	ort Fe	orma	t:	X.	Stand	dard			TR	RP		П. N	PDES	3 - 1
	Sampler Signature:	Jody Watts	5			e-mail:		pm	n@ba	asir	env.	com	<u> </u>			-	,			· · ·	Ana	VZe	For:					- -	7
(lab use) ORDEF	^{only)} 454L	4							Pre	serv	ation	& # O	f Conta	iners	Matri	x ((T	TC TOT	.P: AL:			X				T	1 48, 72 hrs	
LAB# (lab use only) /	FIEL	D CODE	Beginning Depth	Ending Depth	Date Sampled	Time Sampled	Field Filtered	Total #. of Containers	lce	HNO ₃	HCI H.SO,	NaOH	Na ₂ S ₂ O ₃ None	Other (Specify)	DW = Drinking Water SL = Sludg. GW = Groundwater S= Soil/Soi	NP = Non-Potable Specify Othe TPH: 418.1 8015M 8015	TPH: TX 1005 TX 1006	Cations (Ca, Mg, Na, K)	Anions (Cl, SO4, Alkalinity)	SAK / ESP / CEC Metals: As As Ba Cd As Bh Ha St	Metals: As Ag Ba Cd Cr Pb Hg Se Volatilos	volaures Semivolatiles	BTEX 8021B/5030 or BTEX 8260	RCI	N.O.R.M.	CHLORIDES	Total Dissolved Solids	RUSH TAT (Pre-Schedule) 24, 4	Standard TAT 4 DAY
	SP#	¹ 1 @ 15'			12/17/2012	1300		1	x						Soil	>	2											X	\square
	SP#	1 @ 18'			12/17/2012	1400		1	X	_		1			Soil	<u> </u>	<u> </u>				_						\perp		
												-				_							ľ			-		\square	\square
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Special I	nstructions: Ran Verba	SPHI@15' 15 M. Hold For	1. 1 BTE	fold X.	3PH T@	18: Ema	i	1	Re	<i>5a</i>	15	0.	r Ca		w/Ti	PI		Lat Sar VO	orate nple (Cs Fr	ory C Sonta ee of	Com aine f He	ment rs Int adsp	ts: act? ace?			Ę	3	N	
Relinguisi Relinguisi	ned by: m Walters Ted by:	Date 17-17-12 Date	⊤ €الف 1	me 3 D me	Received by:	the	-			• :						Tir 84 Tir	ne Ar	Lab Cus Cus Sar	els o stody stody nple l by Sa	n cor seal: Seal land imple	ntain s on s on d Del er/Cl	ier(s) cont cool livere ient F	ainei er(s) id tep. 7	r(s) ,	کی ا ان ان بر	Hold N) P Q		
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Final 1.000



XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- MonahanAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 12/19/2012 02:00:00 PMAir and Metal samples Acceptable Range: AmbientWork Order #: 454441Temperature Measuring device used :

Sample Re	ceipt Checklist	Comments
#1 *Temperature of cooler(s)?	1	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ cooler?	Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6 *Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Sample instructions complete on Chain of Custody?	Yes	
#9 Any missing/extra samples?	No	
#10 Chain of Custody signed when relinquished/ receive	ed? Yes	
#11 Chain of Custody agrees with sample label(s)?	Yes	
#12 Container label(s) legible and intact?	Yes	
#13 Sample matrix/ properties agree with Chain of Custo	ody? Yes	
#14 Samples in proper container/ bottle?	Yes	
#15 Samples properly preserved?	Yes	
#16 Sample container(s) intact?	Yes	
#17 Sufficient sample amount for indicated test(s)?	Yes	
#18 All samples received within hold time?	Yes	
#19 Subcontract of sample(s)?	Yes	
#20 VOC samples have zero headspace (less than 1/4 i	nch bubble)? Yes	
#21 <2 for all samples preserved with HNO3,HCL, H2SC	04? Yes	
#22 >10 for all samples preserved with NaAsO2+NaOH,	ZnAc+NaOH? Yes	

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Date:

Checklist reviewed by:

Date: _____

Analytical Report 454444

for Southern Union Gas Services- Monahans

Project Manager: Ben Arguijo MA-DOOM

21-DEC-12

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



21-DEC-12



Project Manager: **Ben Arguijo Southern Union Gas Services- Monahans** 801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): **454444 MA-DOOM** Project Address: Lea County, NM

Ben Arguijo:

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(s) 454444. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 454444 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

Nicholas Straccione Project Manager

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Sample Cross Reference 454444



Southern Union Gas Services- Monahans, Monahans, TX

MA-DOOM

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
South Wall 12' BGS	S	12-18-12 13:00		454444-001
North Wall 12' BGS	S	12-18-12 13:10		454444-002





Client Name: Southern Union Gas Services- Monahans Project Name: MA-DOOM



Project ID: Work Order Number(s): 454444 Report Date: 21-DEC-12 Date Received: 12/19/2012

Sample receipt non conformances and comments: None

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments: Batch: LBA-903383 Inorganic Anions by EPA 300/300.1 E300

Batch 903383, Chloride recovered above QC limits in the Matrix Spike. Samples affected are: 454444-001, -002. The Laboratory Control Sample for Chloride is within laboratory Control Limits

Batch: LBA-903463 BTEX by EPA 8021B SW8021BM

Batch 903463, Benzene, Ethylbenzene, Toluene, m_p-Xylenes, o-Xylene recovered below QC limits in the Matrix Spike Duplicate. Samples affected are: 454444-001, -002. The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene, m_p-Xylenes, o-Xylene is within laboratory Control Limits



Project Id:

Contact: Ben Arguijo

Project Location: Lea County, NM

Certificate of Analysis Summary 454444

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: MA-DOOM



Date Received in Lab: Wed Dec-19-12 02:00 pm Report Date: 21-DEC-12

Project Manager: Nicholas Straccione

	Lab Id:	454444-(001	454444-0	02		
Analysis Pogyostad	Field Id:	South Wall 1	2' BGS	North Wall 12	2' BGS		
Analysis Kequestea	Depth:						
	Matrix:	SOIL	,	SOIL			
	Sampled:	Dec-18-12	13:00	Dec-18-12	13:10		
BTEX by EPA 8021B	Extracted:	Dec-20-12	16:30	Dec-20-12	16:30		
	Analyzed:	Dec-21-12	13:17	Dec-21-12	13:34		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Benzene		ND	0.00107	ND	0.00107		
Toluene		ND	0.00214	ND	0.00214		
Ethylbenzene		ND	0.00107	ND	0.00107		
m_p-Xylenes		ND	0.00214	ND	0.00214		
o-Xylene		ND	0.00107	ND	0.00107		
Total Xylenes		ND	0.00107	ND	0.00107		
Total BTEX		ND	0.00107	ND	0.00107		
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-20-12	13:25	Dec-20-12	13:25		
SUB: TX104704215	Analyzed:	Dec-20-12	15:46	Dec-20-12	16:03		
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		71.9	1.08	33.3	1.07		
Percent Moisture	Extracted:						
	Analyzed:	Dec-19-12	15:30	Dec-19-12	15:30		
	Units/RL:	%	RL	%	RL		
Percent Moisture		7.03	1.00	6.91	1.00		
TPH By SW8015 Mod	Extracted:	Dec-19-12	14:20	Dec-19-12	14:20		
	Analyzed:	Dec-20-12	06:18	Dec-20-12	06:45		
	Units/RL:	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	16.1	ND	16.1		
C12-C28 Diesel Range Hydrocarbons		ND	16.1	20.4	16.1		
C28-C35 Oil Range Hydrocarbons		ND	16.1	ND	16.1		
Total TPH		ND	16.1	20.4	16.1		

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

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Nicholas Straccione Project Manager

Page 5 of 16



Flagging Criteria

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

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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	

Final 1.000



Project Name: MA-DOOM

Work Orders : 454444	·,		Project II):						
Lab Batch #: 903328	Sample: 454444-001 / SMP	Batcl	h: <u>1</u> Matrix:	Soil						
Units: mg/kg	Date Analyzed: 12/20/12 06:18	SU	RROGATE RE	COVERY	STUDY					
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		93.6	99.9	94	70-135					
o-Terphenyl		45.3	50.0	91	70-135					
Lab Batch #: 903328	Sample: 454444-002 / SMP	Batcl	h: ¹ Matrix:	Soil						
Units: mg/kg	Date Analyzed: 12/20/12 06:45	SURROGATE RECOVERY STUDY								
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		92.7	100	93	70-135					
o-Terphenyl		44.6	50.0	89	70-135					
Lab Batch #: 903463	Sample: 454444-001 / SMP	Batel	h: ¹ Matrix:	Soil	<u>.</u>					
Units: mg/kg	Date Analyzed: 12/21/12 13:17	SU	RROGATE RE	ECOVERY S	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		0.0265	0.0300	88	80-120					
Lab Batch #: 903463	Sample: 454444-002 / SMP	Batel	h: 1 Matrix:	Soil						
Units: mg/kg	Date Analyzed: 12/21/12 13:34	SU	RROGATE RE	ECOVERY S	STUDY					
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1.4-Difluorobenzene	Analy tes	0.0308	0.0300	103	80-120					
4-Bromofluorobenzene	 	0.0301	0.0300	100	80-120					
Lab Batch #: 903328	Sample: 631504-1-BLK / BL	_K Bate	h: ¹ Matrix:	Solid	<u> </u>					
Units: mg/kg	Date Analyzed: 12/19/12 22:14	SU	RROGATE RE	ECOVERY S	STUDY					
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		90.9	100	91	70-135					
o-Terphenyl		43.5	50.0	87	70-135					

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: MA-DOOM

Work Orders: 454444	ŀ,		Project II):						
Lab Batch #: 903463	Sample: 631588-1-BLK / B	LK Bate	h: ¹ Matrix:	Solid						
Units: mg/kg	Date Analyzed: 12/20/12 21:40	SU	RROGATE RI	ECOVERY	STUDY					
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene		0.0273	0.0300	91	80-120					
4-Bromofluorobenzene		0.0271	0.0300	90	80-120					
Lab Batch #: 903328	Sample: 631504-1-BKS / B	KS Batc	h: ¹ Matrix:	Solid						
Units: mg/kg	Date Analyzed: 12/19/12 21:10	SURROGATE RECOVERY STUDY								
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1-Chlorooctane		93.7	100	94	70-135					
o-Terphenyl		51.3	50.0	103	70-135					
Lab Batch #: 903463	Sample: 631588-1-BKS / B	KS Bate	h: ¹ Matrix:	Solid	•	•				
Units: mg/kg	Date Analyzed: 12/20/12 21:08	SURROGATE RECOVERY STUDY								
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene	-	0.0257	0.0300	86	80-120					
4-Bromofluorobenzene		0.0262	0.0300	87	80-120					
Lab Batch #: 903328	Sample: 631504-1-BSD / B	SD Batc	h: 1 Matrix:	Solid						
Units: mg/kg	Date Analyzed: 12/19/12 21:42	SU	RROGATE RI	ECOVERY	STUDY					
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
	Analytes			נטן						
1-Chlorooctane		94.9	99.7	95	70-135					
o-Terphenyl		53.1	49.9	106	70-135					
Lab Batch #: 903463	Sample: 631588-1-BSD / B	SD Bate	h: 1 Matrix:	Solid						
Units: mg/kg	Date Analyzed: 12/20/12 21:24	SU	RROGATE RI	ECOVERY	STUDY					
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene		0.0287	0.0300	96	80-120					
4-Bromofluorobenzene		0.0319	0.0300	106	80-120					

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution



Project Name: MA-DOOM

Work Orders : 454444	-,		Project II	D:						
Lab Batch #: 903328	Sample: 454401-002 S / M	S Bate	h: 1 Matrix	Soil						
Units: mg/kg	Date Analyzed: 12/20/12 08:05	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	•	88.9	100	89	70-135					
o-Terphenyl		50.0	50.1	100	70-135					
Lab Batch #: 903328	Sample: 454401-002 SD / N	/ MSD Batch: 1 Matrix: Soil								
Units: mg/kg	Date Analyzed: 12/20/12 09:00	SURROGATE RECOVERY STUDY								
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags				
1 Chloroostana	Analytes	07.4	00.6	[2]	70.125					
		97.4	99.6	98	70-135					
0-Terphenyi		49.2	49.8	99	/0-135					
Lab Batch #: 903463	Sample: 454340-002 SD / I	MSD Bate	h: ¹ Matrix:	Soil		-				
Units: mg/kg	Date Analyzed: 12/21/12 01:59	SU	RROGATE RI	ECOVERY	STUDY					
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags				
1,4-Difluorobenzene		0.0302	0.0300	101	80-120					
4-Bromofluorobenzene		0.0330	0.0300	110	80-120					

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution





Project Name: MA-DOOM

Work Order #: 454444							Proj	ject ID:			
Analyst: KEB	Da	ate Prepar	ed: 12/20/201	2			Date A	nalyzed: 1	2/20/2012		
Lab Batch ID: 903463 Sample: 631588-1-E	KS	Batc	h #: 1		Matrix: Solid						
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	JCATE 1	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	<0.000994	0.0994	0.0866	87	0.100	0.112	112	26	70-130	35	
Toluene	<0.00199	0.0994	0.0898	90	0.100	0.113	113	23	70-130	35	
Ethylbenzene	<0.000994	0.0994	0.0800	80	0.100	0.0977	98	20	71-129	35	
m_p-Xylenes	<0.00199	0.199	0.185	93	0.200	0.231	116	22	70-135	35	
o-Xylene	<0.000994	0.0994	0.0895	90	0.100	0.111	111	21	71-133	35	
Analyst: JOL	Da	ate Prepar	ed: 12/20/201	2			Date A	nalyzed: 1	2/20/2012		
Lab Batch ID: 903383 Sample: 631537-1-B	KS	Batc	h #: 1					Matrix: S	olid		
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	SPIKE DUPI	JCATE 1	RECOVE	ERY STUD	Y	
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	2.93	100	101	101	100	103	103	2	80-120	20	

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes





Project Name: MA-DOOM

Work Order #: 454444					Pro	ject ID:											
Analyst: KEB	Date Prepared: 12/19/2012						Date Analyzed: 12/19/2012										
Lab Batch ID: 903328	Sample: 631504-1-B	KS	Bate	h #: 1				Matrix: Solid									
Units: mg/kg		BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY															
TPH By SW80	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 Hydroca	arbons	<15.0	1000	1020	102	997	1070	107	5	70-135	35						
C12-C28 Diesel Range Hydrocar	bons	<15.0	1000	979	98	997	1030	103	5	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



Chloride

Analytes

Form 3 - MS Recoveries

Laboratories							ALL THE B			
	Project Name: N	IA-DOOM	[1980RATOR			
Work Order #: 454444										
Lab Batch #: 903383				Pr	oject ID:					
Date Analyzed: 12/20/2012	Date P	repared: 12/20	0/2012	Analyst: JOL						
QC- Sample ID: 454444-001 S		Batch #: 1]	Matrix: So	oil				
Reporting Units: mg/kg		MATE	RIX / MA	TRIX SPIKE	RECOV	VERY STU	DY			
Inorganic Anions	by EPA 300	Parent Sample Basult	Spike	Spiked Sample Result	%R	Control Limits	Flag			
Analyte	26	[A]	Added [B]	[C]	נטן	₩K				

71.9

108

263

177

80-120

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 - MS / MSD Recoveries

Project Name: MA-DOOM



Work Order #: 454444 **Project ID:** Lab Batch ID: 903328 QC- Sample ID: 454401-002 S Batch #: Matrix: Soil 1 **Date Prepared:** 12/19/2012 Analyst: KEB **Date Analyzed:** 12/20/2012 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 Spiked Sample RPD Limits Spike Sample Spike Dup. Limits Flag Result Added [C] %R Added Result [F] %R %R %RPD % Analytes [A] [B] [D] [E] [G] C6-C12 Gasoline Range Hydrocarbons <15.9 1060 1110 105 1060 1070 101 4 70-135 35 1070 101 1030 97 C12-C28 Diesel Range Hydrocarbons <15.9 1060 1060 4 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

Page 13 of 16



Sample Duplicate Recovery



Project Name: MA-DOOM

Work Order #: 454444

Lab Batch #: 903331				Project I	D:						
Date Analyzed: 12/19/2012 15:07	Date Prepar	ed: 12/19/2012	2 Ana	lyst:WRU							
QC- Sample ID: 454401-009 D	Batcl	n#: 1	Mat	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		5.62	5.51	2	20						

Xenco Laboratories

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:	Project Manager: Ben J. Arguijo; Joel Lowry									Project Name: MA-DOOM																	
	Company Name	Basin Environmental Se	rvice T	echno	logies, LLC	1999 - 1999 -				-1			د. د د	- · · · · · ·			Proj	ject #	•••••									
	Company Address:	P.O. Box 301										~	. :			Pr	oiec	t Loc	: le	a Co	untv	NM						
	City/State/Zip:	Lovington, NM 88260																PO #	: <u>Bi</u>	II So	uther	n Uni	on C	Gas				
	Telephone No:	(575)396-2378				Fax No:		(57	5) 39(6-142	29				Re	port F	orn	nat:	X	Sta	ndarc	i .		TRF	RP		NPDE	S
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XENCO Laboratories



Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- MonahanAcceptable Temperature Range: 0 - 6 degCDate/ Time Received: 12/19/2012 02:00:00 PMAir and Metal samples Acceptable Range: AmbientWork Order #: 454444Temperature Measuring device used :

Sampl	le Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	1	
#2 *Shipping container in good condition?	Yes	
#3 *Samples received on ice?	Yes	
#4 *Custody Seals intact on shipping container/ co	oler? Yes	
#5 Custody Seals intact on sample bottles?	Yes	
#6 *Custody Seals Signed and dated?	Yes	
#7 *Chain of Custody present?	Yes	
#8 Sample instructions complete on Chain of Cust	ody? Yes	
#9 Any missing/extra samples?	No	
#10 Chain of Custody signed when relinquished/ re	eceived? Yes	
#11 Chain of Custody agrees with sample label(s)	? Yes	
#12 Container label(s) legible and intact?	Yes	
#13 Sample matrix/ properties agree with Chain of	Custody? Yes	
#14 Samples in proper container/ bottle?	Yes	
#15 Samples properly preserved?	Yes	
#16 Sample container(s) intact?	Yes	
#17 Sufficient sample amount for indicated test(s)?	? Yes	
#18 All samples received within hold time?	Yes	
#19 Subcontract of sample(s)?	Yes	
#20 VOC samples have zero headspace (less than	n 1/4 inch bubble)? Yes	
#21 <2 for all samples preserved with HNO3,HCL,	H2SO4? Yes	
#22 >10 for all samples preserved with NaAsO2+N	IaOH, ZnAc+NaOH? Yes	

* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Date:

Checklist reviewed by:

Date: _____
Analytical Report 454701

for Southern Union Gas Services- Monahans

Project Manager: Joel Lowry MA DOOM

27-DEC-12

Collected By: Client





12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122): Texas (T104704215-10-6-TX), Arizona (AZ0765), Arkansas (08-039-0), Connecticut (PH-0102), Florida (E871002) Illinois (002082), Indiana (C-TX-02), Iowa (392), Kansas (E-10380), Kentucky (45), Louisiana (03054) New Hampshire (297408), New Jersey (TX007), New York (11763), Oklahoma (9218), Pennsylvania (68-03610) Rhode Island (LAO00312), USDA (S-44102), DoD (L11-54)

Xenco-Atlanta (EPA Lab Code: GA00046): Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135) Louisiana (04176), USDA (P330-07-00105)

> Xenco-Tampa Mobile (EPA Lab code: FL01212): Florida (E84900) Xenco-Lakeland: Florida (E84098) Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX) Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX) Xenco Phoenix (EPA Lab Code: AZ00901): Arizona (AZ0757) Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757) Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



27-DEC-12



Project Manager: Joel Lowry Southern Union Gas Services- Monahans 801 South Loop 464 Monahans, TX 79756

Reference: XENCO Report No(s): **454701 MA DOOM** Project Address: Lea County, NM

Joel Lowry:

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(s) 454701. 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. The uncertainty of measurement associated with the results of analysis reported is available upon request. 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. 454701 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.

Alejandro Montoya New Mexico Laboratory Director

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Sample Cross Reference 454701



Southern Union Gas Services- Monahans, Monahans, TX

MA DOOM

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
East wall 12' BGS	S	12-21-12 10:00		454701-001
Floor 14' BGS	S	12-21-12 10:10		454701-002
West Wall 12'BGS	S	12-21-12 10:20		454701-003



CASE NARRATIVE

Client Name: Southern Union Gas Services- Monahans Project Name: MA DOOM



Project ID: Work Order Number(s): 454701 Report Date: 27-DEC-12 Date Received: 12/24/2012

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None



Project Id:

Contact: Joel Lowry

Project Location: Lea County, NM

Certificate of Analysis Summary 454701

Southern Union Gas Services- Monahans, Monahans, TX

Project Name: MA DOOM



Date Received in Lab: Mon Dec-24-12 03:20 pm

Report Date: 27-DEC-12

Project Manager: Nicholas Straccione

	454701-0	01	454701-00	02	454701-0	003			
Are alwain Down out of	Field Id:	East wall 12	BGS	Floor 14' B	GS	West Wall 12	2'BGS		
Analysis Kequesiea	Depth:								
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Dec-21-12	10:00	Dec-21-12 1	0:10	Dec-21-12	10:20		
BTEX by EPA 8021B	Extracted:			Dec-26-12 1	1:00				
	Analyzed:			Dec-26-12 1	5:56				
	Units/RL:			mg/kg	RL				
Benzene				ND	0.00104				
Toluene				ND	0.00209				
Ethylbenzene				ND	0.00104				
m,p-Xylenes				ND	0.00209				
o-Xylene				ND	0.00104				
Total Xylenes				ND	0.00104				
Total BTEX				ND	0.00104				
Inorganic Anions by EPA 300/300.1	Extracted:	Dec-27-12	10:59			Dec-27-12	10:59		
SUB: E871002	Analyzed:	Dec-27-12	12:07			Dec-27-12	12:59		
	Units/RL:	mg/kg	RL			mg/kg	RL		
Chloride		49.9	1.35			97.1	1.08		
Percent Moisture	Extracted:								
	Analyzed:	Dec-26-12	12:00	Dec-26-12 1	2:00	Dec-26-12	12:00		
	Units/RL:	%	RL	%	RL	%	RL		
Percent Moisture		26.0	1.00	4.38	1.00	7.24	1.00		
TPH By SW8015 Mod	Extracted:	Dec-26-12	11:00	Dec-26-12 1	1:00	Dec-26-12	11:00		
	Analyzed:	Dec-26-12	15:35	Dec-26-12 1	6:58	Dec-26-12	17:25		
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
C6-C12 Gasoline Range Hydrocarbons		ND	19.9	ND	15.7	ND	15.9		
C12-C28 Diesel Range Hydrocarbons		ND	19.9	ND	15.7	ND	15.9		
C28-C35 Oil Range Hydrocarbons	ND	19.9	ND	15.7	ND	15.9			
Total TPH	ND	19.9	ND	15.7	ND	15.9			

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

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

huandro

Alejandro Montoya New Mexico Laboratory Director



Flagging Criteria

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

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 (432) 563-1713

 (770) 449-8800
 (770) 449-5477

 (602) 437-0330
 (210) 509-3335

Final 1.000



Form 2 - Surrogate Recoveries

Project Name: MA DOOM

Nork Orders : 454701	,	Project ID:											
Lab Batch #: 903671	Sample: 454701-001 / SMP	Batch: 1 Matrix: Soil											
Units: mg/kg	Date Analyzed: 12/26/12 15:35	SU	RROGATE RF	ECOVERY	STUDY								
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		89.8	98.0	92	70-135								
o-Terphenyl		42.3	49.0	86	70-135								
Lab Batch #: 903663	Sample: 454701-002 / SMP	Batch: 1 Matrix: Soil											
Units: mg/kg	Date Analyzed: 12/26/12 15:56	SURROGATE RECOVERY STUDY											
BTEX	K by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene		0.0329	0.0300	110	80-120								
4-Bromofluorobenzene		0.0283	0.0300	94	80-120								
Lab Batch #: 903671	Sample: 454701-002 / SMP	P Batch: ¹ Matrix: Soil											
Units: mg/kg	Date Analyzed: 12/26/12 16:58	SU	RROGATE RF	ECOVERY	STUDY								
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		95.1	99.8	95	70-135								
o-Terphenyl		45.0	49.9	90	70-135								
Lab Batch #: 903671	Sample: 454701-003 / SMP	Batel	h: 1 Matrix:	:Soil	<u>,</u>								
Units: mg/kg	Date Analyzed: 12/26/12 17:25	SU	RROGATE RF	ECOVERY	STUDY								
ТРН І	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane	Allalytes	00.1	08.2	92	70.135								
o-Terphenyl		42.7	49.1	87	70-135								
Lah Batch #: 903671		K Batc	h: 1 Matrix:	• Solid	<u> </u>								
Units: mg/kg	Date Analyzed: 12/26/12 15:06	SU	RROGATE RF	ECOVERY S	STUDY								
ТРН І	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		92.8	99.9	93	70-135								
o-Terphenyl		44.0	70-135										

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

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



Form 2 - Surrogate Recoveries

Project Name: MA DOOM

Work Orders: 454701	,	Project ID:											
Lab Batch #: 903663	Sample: 631732-1-BLK / B	LK Bate	h: ¹ Matrix:	Solid									
Units: mg/kg	Date Analyzed: 12/26/12 15:07	SU	RROGATE RE	ECOVERY	STUDY								
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene		0.0304	0.0300	101	80-120								
4-Bromofluorobenzene		0.0246	0.0300	82	80-120								
Lab Batch #: 903671	Sample: 631733-1-BKS / B	BKS Batch: 1 Matrix:Solid											
Units: mg/kg	Date Analyzed: 12/26/12 14:10	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		49.1	49.8	99	70-135								
Lab Batch #: 903663	Sample: 631732-1-BKS / B	KS Batch: 1 Matrix:Solid											
Units: mg/kg	Date Analyzed: 12/26/12 15:23	SU	RROGATE RE	ECOVERY	STUDY								
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene		0.0277	0.0300	92	80-120								
4-Bromofluorobenzene		0.0318	0.0300	106	80-120								
Lab Batch #: 903671	Sample: 631733-1-BSD / B	SD Batc	h: 1 Matrix:	Solid	1								
Units: mg/kg	Date Analyzed: 12/26/12 14:38	SU	RROGATE RE	ECOVERY	STUDY								
TPH	By SW8015 Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			լոյ									
1-Chlorooctane		98.0	99.8	98	70-135								
o-Terphenyl		50.2	49.9	101	70-135								
Lab Batch #: 903663	Sample: 631732-1-BSD / B	SD Bate	h: 1 Matrix:	Solid									
Units: mg/kg	Date Analyzed: 12/26/12 15:39	SU	RROGATE RE	ECOVERY :	STUDY								
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene		0.0342	0.0300	114	80-120								
4-Bromofluorobenzene		0.0319	0.0300	106	80-120								

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

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



Form 2 - Surrogate Recoveries

Project Name: MA DOOM

Vork Orders : 454701	,	Project ID:											
Lab Batch #: 903671	Sample: 454701-001 S / MS	AS Batch: 1 Matrix: Soil											
Units: mg/kg	Date Analyzed: 12/26/12 16:03	SU	RROGATE RI	ECOVERYS	STUDY								
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		98.2	99.0	99	70-135								
o-Terphenyl		50.2	49.5	101	70-135								
Lab Batch #: 903663	Sample: 454701-002 S / MS	AS Batch: ¹ Matrix: Soil											
Units: mg/kg	Date Analyzed: 12/26/12 16:12	SURROGATE RECOVERY STUDY											
BTE	X by EPA 8021B	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags							
	Analytes			נען									
1,4-Difluorobenzene		0.0359	0.0300	120	80-120								
4-Bromofluorobenzene		0.0310	0.0300	103	80-120								
Lab Batch #: 903663	Sample: 454701-002 SD / N	MSD Bate	h: ¹ Matrix:	Soil									
Units: mg/kg	Date Analyzed: 12/26/12 16:29	SURROGATE RECOVERY STUDY											
BTE	X by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1,4-Difluorobenzene		0.0335	0.0300	112	80-120								
4-Bromofluorobenzene		0.0318	0.0300	106	80-120								
Lab Batch #: 903671	Sample: 454701-001 SD / M	MSD Bate	h: 1 Matrix:	Soil									
Units: mg/kg	Date Analyzed: 12/26/12 16:31	SU	RROGATE RI	ECOVERYS	STUDY								
TPH	By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags							
1-Chlorooctane		95.6	99.1	96	70-135								
o-Terphenyl		49.7	49.6	100	70-135								

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

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





Project Name: MA DOOM

Work Order #: 454701	Project ID:													
Analyst: AMB	Da	ate Prepar	ed: 12/26/201	2			Date A	nalyzed: 1	2/26/2012					
Lab Batch ID: 903663 Sample: 631732-1-E	SKS	Batch	n#: 1					Matrix: S	olid					
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	LICATE	RECOVE	ERY STUD	Y				
BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added	Blank Spike Result	Blank Spike %R	Spike Added	Blank Spike Duplicate Begult [F]	Blk. Spk Dup. %R	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Analytes		լոյ	[C]		լեյ	Kesun [F]	[0]							
Benzene	< 0.000996	0.0996	0.0752	76	0.100	0.0741	74	1	70-130	35				
Toluene	< 0.00199	0.0996	0.0869	87	0.100	0.0822	82	6	70-130	35				
Ethylbenzene	<0.000996	0.0996	0.0779	78	0.100	0.0766	77	2	71-129	35				
m,p-Xylenes	<0.00199	0.199	0.159	80	0.200	0.156	78	2	70-135	35				
o-Xylene	<0.000996	0.0996	0.0819	82	0.100	0.0799	80	2	71-133	35				
Analyst: RKO	Da	ate Prepar	ed: 12/27/201	2			Date A	nalyzed: 1	2/27/2012					
Lab Batch ID: 903747 Sample: 631776-1-E	SKS	Batch	n#: 1					Matrix: S	olid					
Units: mg/kg		BLAN	K /BLANK S	SPIKE / E	BLANK S	PIKE DUPI	LICATE	RECOVE	ERY STUD	Y				
Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag			
Chloride	<1.00	100	104	104	100	104	104	0	80-120	20				

Relative Percent Difference RPD = $200^{*}|(C-F)/(C+F)|$ Blank Spike Recovery [D] = $100^{*}(C)/[B]$ Blank Spike Duplicate Recovery [G] = $100^{*}(F)/[E]$ All results are based on MDL and Validated for QC Purposes





Project Name: MA DOOM

Work Order #: 454701					Project ID:											
Analyst: AMB		Da	ate Prepar	red: 12/26/201	2		Date Analyzed: 12/26/2012									
Lab Batch ID: 903671	Sample: 631733-1-B	KS	Bate	h #: 1					Matrix: S	olid						
Units: mg/kg			BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY													
TPH By SW801	15 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 Hydroca	<14.9	995	889	89	998	894	90	1	70-135	35						
C12-C28 Diesel Range Hydrocar	<14.9	995	835	84	998	848	85	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: MA DOOM



Work Order #: 454701										
Lab Batch #: 903747			Pr	oject ID:						
Date Analyzed: 12/27/2012 Da	Date Prepared: 12/27/2012Analyst: RKO									
QC- Sample ID: 454701-001 S	Batch #: 1 Matrix: Soil									
Reporting Units: mg/kg	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	49.9	135	178	95	80-120					

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

BRL - Below Reporting Limit



Form 3 - MS / MSD Recoveries

Project Name: MA DOOM



Work Order #: 454701						Project II	D:				
Lab Batch ID: 903663 Date Analyzed: 12/26/2012 Perpenting Units: mg/kg	QC- Sample ID: Date Prepared:	454701 12/26/2	-002 S 012	Ba An	tch #: alyst:	1 Matrix	x: Soil				
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY S	STUDY		
BTEX by EPA 8021B	Parent Sample	Spike	Spiked Sample Result	Spiked 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	< 0.00104	0.104	0.0807	78	0.104	0.0754	73	7	70-130	35	
Toluene	<0.00208	0.104	0.0891	86	0.104	0.0830	80	7	70-130	35	
Ethylbenzene	< 0.00104	0.104	0.0837	80	0.104	0.0807	78	4	71-129	35	
m,p-Xylenes	<0.00208	0.208	0.174	84	0.209	0.166	79	5	70-135	35	
o-Xylene	<0.00104	0.104	0.0809	78	0.104	0.0865	83	7	71-133	35	
Lab Batch ID: 903671	QC- Sample ID:	454701	-001 S	Ba	tch #:	1 Matrix	x: Soil				
Date Analyzed: 12/26/2012	Date Prepared:	12/26/2	012	An	alyst:	AMB					
Reporting Units: mg/kg		Μ	IATRIX SPIK	E / MAT	RIX SPI	KE DUPLICA	TE REC	OVERY	STUDY		
TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<20.1	1340	1230	92	1340	1200	90	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<20.1	1340	1140	85	1340	1130	84	1	70-135	35	

Matrix Spike Percent Recovery $[D] = 100^{\circ}(C-A)/B$ Relative Percent Difference RPD = $200^{\circ}|(C-F)/(C+F)|$ Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

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



Sample Duplicate Recovery



Project Name: MA DOOM

Work Order #: 454701

Lab Batch #: 903662		Project ID:									
Date Analyzed: 12/26/2012 12:00	Date Prepar	ed: 12/26/2012	2 Ana	lyst:AMB							
QC- Sample ID: 454701-001 D	Batch										
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		26.0	25.3	3	20						

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Page 15 of 15

Final 1.000

Signature: Envigero

Nm BCD Permit D1-0033 SCCH 2157071 See 5 TAS9 LATE (975) 395-357 Graf 395-2877 Doom Land Farm Waste Manifest	Generators/Originating Site S. UNFOR LINE) per Second	Section <u>S</u> Township 245 Range <u>R375</u> Trucking Company <u>Brain</u> - TKIME M RUVE Drivers Signature: <u>X Equinary 1</u> Type of Material <u>H</u> TS	Quantity $\frac{\Delta B}{\Delta}$ Loads By $\frac{1}{2}$ yd Dump Truck $\frac{1}{2}$ Total yds Cell Number material was placed in land farm $\frac{2}{2}$	Attendant on duty signature: Attendant on duty signature: Date 12-21-17 Date 12-21-17 As a condition of acceptance for disposal, I hereby certify that this waste is exempt waste as a result of oil and gas operations and is exempt from RCRA sub title c regulations and not mixed with non-exempt waste.	Signature
Doom Land Farm Waste Manifest	Generators/Originating Site S UN/ON LINE DUT	Section <u>S</u> Township 24 Range 72 Range	Quantity 6 Loads By 2^{-} yd Dump Truck 9^{-} Total yds Cell Number material was placed in land farm $\frac{4^{-}8}{2}$	Attendant on duty signature: Date $12 - 24 - 72$ Date $12 - 24 - 72$ As a condition of acceptance for disposal, I hereby cartify that this waste is exempt waste as defined by the EPA. The waste listed above was generated as a result of oil and gas operations and is exempt from RCRA sub title c regulations and not mixed with non-exempt waste.	Sinnature:

Signature: JUGRAIRINO 106R65

Doom Land Farm Waste Manifest	Generators/Originating Site Location: S. UNIA LINE Device	Trucking Company Bracin - TRME M BUK Drivers Signature: - Kowigher Quelling Type of Material - HTS	Cell Number material was placed in land farm <i>AS</i> Comments:	Attendant on duty signature:	As a condition of acceptance for disposal, I hereby certify that this waste is exempt waste as defined by the EPA. The waste listed above was generated as a result of oil and gas operations and is exempt from RCRA sub title c regulations and not mixed with non-exempt waste.	Signature:
Doom Land Farm Waste Manifest	Generators/Originating Site 5. Unline Line Doore Standing Site 5. Unline Line Doore Service Service Service 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	Trucking Company Reserve Environ Range 5 mm Trucking Company Reserve Environ TRAV M white Drivers Signature Www Proven Environ TRAV M white Type of Material Author Center Instructed Soul	Cell Number material was placed in land farm	Attendant on duty signature: //w/ll/Jon-Date_12-20-12	As a condition of acceptance for disposal, I hereby certify that this waste is exempt waste as defined by the EPA. The waste listed above was generated as a result of oil and gas operations and is exempt from RCRA sub title c regulations and not mixed with non-exempt waste.	Signature:

Doom Land Farm Waste Manifest	Generators/Originating Site S, UNION LINE	Section <u>Section</u> <u>245</u> Range <u>375</u> Trucking Company <i>BAS IN ENMLO</i> Drivers Signature: <u>XMMACAREN</u> <u>244</u> <u>245</u>	Quantity $\overline{\mathcal{X}}$ Loads By $\overline{\mathcal{X}}$ yd Dump Truck $\overline{\mathcal{X}}$ Total yds Cell Number material was placed in land farm $\overline{\mathcal{A}}$ \mathcal{R} Comments:	Attendant on duty signature:	As a condition of acceptance for disposal, I hereby certify that this wast exempt waste as defined by the EPA. The waste listed above was generate a result of oil and gas operations and is exempt from RCRA sub tit regulations and not mixed with non-exempt waste.	Signature:
Doom Land Farm Waste Manifest	Generators/Originating Site Location: DA - Doom	Section 5 Township 245, 37 E Range Trucking Company <u>Ragiol Eaulistern parts</u> Drivers Signature: <u>Marthin</u> Type of Material <u>0</u>	Quantity <u>S</u> Loads By <u>J2</u> yd Dump Truck <u>20</u> Total yds Cell Number material was placed in land farm <u>#</u> S Comments:	Attendant on duty signature:	As a condition of acceptance for disposal, I hereby certify that this waste is exempt waste as defined by the EPA. The waste listed above was generated as a result of oil and gas operations and is exempt from RCRA sub title c regulations and not mixed with non-exempt waste.	Signature:

State of New Mexico Energy Minerals and Natural Resources

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

Form C-141 Revised October 10, 2003

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

Release Notification and Corrective Action

			OPERATOR	\boxtimes	Initial Report	Final Report	
Name of Company	Southern Union Ga	as Services, Ltd.	Contact			Tony Savoie	
Address	P.O. Box 1226	Jal, N.M. 88252	Telephone No.			505-395-2116	
Facility Name	Lea Co	ounty Field Dept.	Facility Type		Natu	ral Gas Gathering	
Surface Owner: Jarold and Dan Doom Mineral Owner		: State	Le	ease No.			

Surface Owner: Jarold and Dan Doom

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
Р	5	24S	37E					Lea

Latitude N32 14.491 Longitude W103 10.858

NATURE OF RELEASE

Source of Release : 10" Natural Gas Pipeline Source of Release : 10" Natural Gas Pipeline Date and Hour of Occurrence not known Date and Hour of Discovery 6/4/09 10:23 a.m. Was Immediate Notice Given? Yes No No Required If YES, To Whom? By Whon? Date and Hour: If YES, Volume Impacting the Watercourse. If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? Yes No If YES, Volume Impacting the Watercourse. If YES, Volume Impacting the Watercourse. Describe Cause of Problem and Remedial Action Taken.* If YES, Volume Impacting at approximately 30 psi, the affected area was clamped, all of the crude oil that was released had soaked into the ground. Permanent repairs were made the following day. Describe Area Affected and Cleanup Action Taken. Approximately 1950 sq.ft. of pasture land was affected by the leak and temporary repair. Final remediation will follow the NMOCD recommended guidelines for leaks and spills. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD reals and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of Isobility should their operations have failed to adequately investigate and remediate contamination that pose as threat to ground water, surface water, human health or the environment. In addice acceptance of a C	Type of Release : Crude Oil, and Natural Gas	Volume of Release: Greater than	Volume Re	ecovered NONE					
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Date: 7/31/09 Phone: 505-395-2116	E-mail Address:	Conditions of Approval:		Attached					
	Date: 7/31/09 Phone: 505-395-2116								

* Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

Form C-141 Revised October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

			OPERATOR	Initial Report	🛛 Final Report
Name of Company	Southern Union Gas Serv	ices, Ltd.	Contact	(Crystal Callaway
Address	801 S. Loop 464, Monaha	uns, TX, 79756	Telephone No.	(81	17) 302-9407
Facility Name:	MA-Doom (1RP-2899)		Facility Type	Natu	ral Gas Gathering
Surface Owner Jaro	old and Dan Doom	Mineral Owner	: State	Lease No.	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
Р	5	24S	37E					Lea

Latitude N32 14.491

Longitude W103 10.858

NATURE OF RELEASE

Type of Release:	Crude Oil, and Natural Gas	Volume of Release Greater than	Volume Recovered NONE
		50 mcf gas and 10 bbls crude oil	
Source of Release:	10" Natural Gas Pipeline	Date and Hour of Occurrence	Date and Hour of Discovery 6/4/09
		Not known	10:23 a.m.
Was Immediate Noti	ce Given?	If YES, To Whom?	
	Yes No Not Required		
By Whom?		Date and Hour:	
Was a Watercourse I	Reached?	If YES, Volume Impacting the Wat	ercourse.
	🗌 Yes 🖾 No		
If a Watercourse was	Imported Describe Fully *	l	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken:

The 10" Natural gas pipeline developed a leak while operating at approximately 30 psi, the affected area was clamped, all of the crude oil that was release had soaked into the ground. Permanent repairs were made the following day.

Describe Area Affected and Cleanup Action Taken. Approximately 1950 sq. ft. of pasture land was affected by the leak and temporary repair. Final remediation will follow the NMOCD recommended guidelines for leaks and spills.

Approximately 350 yd³ of impacted material was excavated from the remediation site. Confirmation soil samples collected from the floor and sidewalls of the MA-Doom excavation were analyzed by an NMOCD-approved laboratory, which determined concentrations of benzene, BTEX, TPH and chloride concentrations were less than NMOCD regulatory remediation action levels.

Please reference the attached Basin Environmental Services Technologies Remediation Summary and Site Closure Request for details of remedial activities and the site investigation.

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

Signature: upth allen	OIL CONSER	VATION DIVISION
Printed Name: Crystal Callaway	Approved by District Supervisor:	
Title: Senior Environmental Remediation Specialist	Approval Date:	Expiration Date:
E-mail Address: Crystal.Callaway@Regencygas.com	Conditions of Approval:	
Date: 10/27/14 Phone: (817) 302-9407		