

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

State of New Mexico  
Energy Minerals and Natural Resources

Form C-141  
Revised August 8, 2011

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

Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

37

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

|   |  |                      |
|---|--|----------------------|
| Name of Company Southern Union Gas Services | Contact Rose Slade                         |                      |
| Address PO Box 1226 Jal, New Mexico 88252   | Telephone No. 432.940.5147 or 817.302.9716 |                      |
| Facility Name G-Loop Line 8-Inch Lateral    | Facility Type Natural Gas Pipeline         |                      |
| Surface Owner El Paso Natural Gas           | Mineral Owner                              | API No. 30-025-38822 |

**LOCATION OF RELEASE**

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| G           | 7       | 26S      | 37E   |               |                  |               |                | Lea    |

Latitude 32.06025 Longitude 103.19775

**NATURE OF RELEASE**

|  |   |  |
|--|---|--|
| Type of Release Crude Oil and Produced Water   | Volume of Release 6 BBLS sulfide          | Volume Recovered 0 BBLS                          |
| Source of Release 8-Inch Steel Pipeline  | Date and Hour of Occurrence Unknown       | Date and Hour of Discovery July 1, 2010 1140 hrs |
| Was Immediate Notice Given?<br><input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required | If YES, To Whom?                          |  |
| By Whom?   | Date and Hour                             |  |
| Was a Watercourse Reached?<br><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No  | If YES, Volume Impacting the Watercourse. |  |

HOBBS OCD

MAR 01 2013

RECEIVED

Describe Cause of Problem and Remedial Action Taken.\*  
Internal corrosion caused a failure of an 8-Inch steel pipeline, resulting in a surface stain of approximately 1,000 square feet. The pipeline was fitted with a temporary pipeline clamp to mitigate the release. No H2S was detected from the release.

Describe Area Affected and Cleanup Action Taken.\* The area was excavated and soil samples were collected from the excavation and remediated stockpiled soil and submitted to the laboratory for benzene, BTEX, TPH and chloride analysis. Laboratory results indicated benzene, BTEX, TPH, and chloride concentrations were less than the NMOCD Regulatory Guidelines. The excavation was backfilled with the remediated stockpiled soil. Please reference the NOVA Safety and Environmental Soil Remediation Summary and Site Closure Request dated February 2013 for further details.

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

|  |   |                                   |
|--|---|-----------------------------------|
| Signature:  | <b>OIL CONSERVATION DIVISION</b><br> |                                   |
| Printed Name: Rose Slade   | Approved by Environmental Specialist  |                                   |
| Title: EH&S Specialist   | Approval Date: 3/1/13   | Expiration Date: -                |
| E-mail Address: rose.slade@sug.com   | Conditions of Approval: -   | Attached <input type="checkbox"/> |
| Date: 3/1/2013 Phone: 432.940.5147   |   | IRP-2581                          |

\* Attach Additional Sheets If Necessary

MAR 04 2013

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**SOIL REMEDIATION SUMMARY  
AND SITE  
CLOSURE REQUEST**

**Southern Union Gas Services  
G-Loop Line 8-Inch Lateral Historical Release Site  
Lea County, New Mexico  
UNIT LTR "G" (SW ¼ /NE ¼), Section 7, Township 26 South, Range 37 East  
Latitude 32.06025° North, Longitude 103.19775° West  
NMOCD Reference # 1RP-2581**

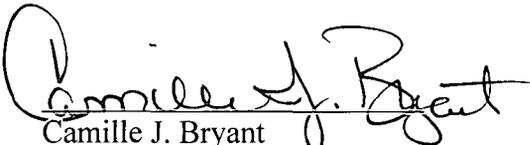
Prepared For:

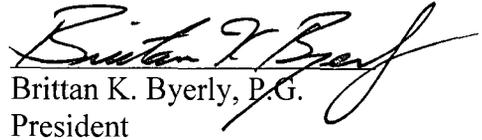
**Southern Union Gas Services  
801 South Loop 464  
Monahans, Texas 79756**

Prepared By:

**NOVA Safety & Environmental  
2057 Commerce  
Midland, Texas 79703**

**February 2013**

  
Camille J. Bryant  
Project Manager

  
Brittan K. Byerly, P.G.  
President

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Appendix A – Analytical Reports

Appendix B – Photographs

Appendix C – Release Notification and Corrective Action (Form-C-141)

## 1.0 INTRODUCTION

Nova Safety & Environmental (NOVA), on behalf of Southern Union Gas Services (SUGS), has prepared this Soil Remediation Summary and Site Closure Request for the G-Loop Line 8-Inch Lateral Historical Release Site. The legal description of the release site is Unit Letter "G" (SW ¼ NE ¼), Section 7, Township 26 South, Range 37 East, in Lea County, New Mexico. The property affected by the release is owned by El Paso Natural Gas Services. The release site GPS coordinates are 32.06025° North and 103.19775° West. Please reference Figure 1 for a Site Location Map and Figure 2 for a Site Details Schematic and Confirmation Soil Sample Locations Map. The Release Notification and Corrective Action (Form C-141) is provided as Appendix C.

On July 1, 2010, SUGS discovered a release of crude oil and produced water had occurred from an 8-inch steel pipeline. The cause of the release was attributed to failure of a segment of the 8-inch steel pipeline. The pipeline was fitted with a temporary pipeline clamp to mitigate the release. SUGS submitted the Release Notification and Corrective Action (Form C-141) to the New Mexico Oil Conservation Division (NMOCD) Hobbs District Office on July 13, 2010. The C-141 indicated approximately six (6) barrels of crude oil/produced water were released from the pipeline, with no recovery. General photographs of the site are provided as Appendix B.

SUGS has researched and identified various historical release sites located in New Mexico. At the request of SUGS, NOVA has reviewed the historical data for these sites and conducted the necessary activities to ensure the sites meet the criteria for closure in accordance with NMOCD regulatory guidelines.

## 2.0 NMOCD SITE CLASSIFICATION

A search of the New Mexico Office of the State Engineer (NMOSE) database did not identify the average depth to groundwater information for Section 7, Township 26 South, Range 37 East. A reference map utilized by the NMOCD indicated depth to groundwater at the release site should be encountered at approximately one hundred (100) feet below ground surface (bgs). The depth to groundwater at the G-Loop Line 8-Inch Lateral Historical Release Site results in a score of ten (10) points being assigned to the site, based on the NMOCD depth to groundwater criteria.

The water well database, maintained by the NMOSE, indicated there are no water wells less than 1,000 feet from the release, resulting in zero (0) points being assigned to this site as a result of this criteria.

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

The NMOCD guidelines indicate the G-Loop line 8-Inch Lateral Historical Release Site has ranking score of ten (10). Based on this score, the soil remediation levels for a site with a ranking score of ten (10) points are as follows:

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

The NMOCD chloride cleanup level concentrations are site specific and will be determined by the NMOCD Hobbs District Office.

### **3.0 SUMMARY OF SOIL REMEDIATION ACTIVITIES**

On January 7, 2013, NOVA at the request of SUGS, commenced remediation activities at the G-Loop Line 8-Inch Lateral Historical Release Site. Approximately 100 (cy) cubic yards of impacted soil was excavated and stockpiled on-site, pending final disposition. The resulting excavation measured approximately ten (10) feet in length, approximately ten (10) feet in width, and approximately four (4) feet in depth. Please reference Figure 2 for site details.

On January 7, 2013, one (1) soil sample (RP @ 4') was collected from excavation and submitted to the laboratory for determination of concentrations of benzene, toluene, ethyl-benzene, and xylene (BTEX), total petroleum hydrocarbons (TPH), and chlorides using EPA SW-846 8012b, 8015M, and E 300, respectively. The analytical results indicated benzene, BTEX and TPH concentrations were less than the appropriate laboratory method detection limits (MDL). The soil sample exhibited a chloride concentration of 18.1 mg/Kg. A review of analytical results indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD regulatory guidelines. Table 1 summarizes the Concentrations of BTEX, TPH, and Chlorides in Soil. Laboratory analytical reports are provided as Appendix A.

On January 8, 2013, four (4) soil samples (N S/W @ 3', E S/W @ 3', S S/W @ 3', and W S/W @ 3') were collected from the excavation and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene, BTEX, and TPH concentrations were less than the appropriate laboratory MDL for all the submitted soil samples. Chloride concentrations ranged from 1.51 mg/Kg for soil sample S S/W @ 3' to 129 mg/Kg for soil sample E S/W @ 3'. A review of analytical results indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD regulatory guidelines.

The excavated soil was stockpiled west of the excavation in a cleared area and remediated by mixing and blending methods. On January 8, 2013, one (1) composite sample was collected from the remediated soil and submitted to the laboratory for analysis. Laboratory analytical results indicated benzene and BTEX concentrations were less than the appropriate laboratory MDL. The soil sample exhibited a TPH concentration of 290 mg/Kg and a chloride concentration of 40.1 mg/Kg. A review of analytical results indicated benzene, BTEX, TPH, and chloride concentrations were less than NMOCD regulatory guidelines (Table 1).

On January 17, 2013, a NOVA representative met with a NMOCD Hobbs District Office representative to present the analytical results of the soil remediation activities, and request closure approval for the site. The NMOCD Hobbs District Office representative granted verbal approval to close the site

## **4.0 QA/QC PROCEDURES**

### **4.1 Soil Sampling**

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

The soil samples were analyzed as follows:

- BTEX concentrations in accordance with EPA Method 8021B, 5030
- TPH concentrations in accordance with modified EPA Method 8015M GRO/DRO
- Chloride concentration in accordance with Method E 300.

### **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 (COC) form. These procedures were either transmitted with the laboratory reports or are on file at the laboratory.

## **5.0 SITE CLOSURE REQUEST**

Based on the analytical results of confirmation soil samples, NOVA recommends SUGS provide the NMOCD a copy of this Soil Remediation Summary and Site Closure Request and request the NMOCD grant final closure to the G-Loop Line 8-Inch Lateral Historical Release Site.

## **6.0 LIMITATIONS**

NOVA Safety and Environmental has prepared this Soil Remediation Summary and Site Closure Request to the best of its ability. No other warranty, expressed or implied, is made or intended.

NOVA Safety and Environmental has examined and relied upon documents referenced in the report and has relied on oral statements made by certain individuals. NOVA Safety and Environmental has not conducted an independent examination of the facts contained in referenced materials and statements. We have presumed the genuineness of the documents and that the information provided in documents or statements is true and accurate. NOVA Safety and Environmental has prepared this report, in a professional manner, using the degree of skill and care exercised by similar environmental consultants. NOVA Safety and Environmental also 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 NOVA Safety and Environmental and/or Southern Union Gas.

**7.0 DISTRIBUTION:**

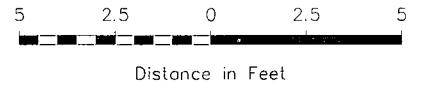
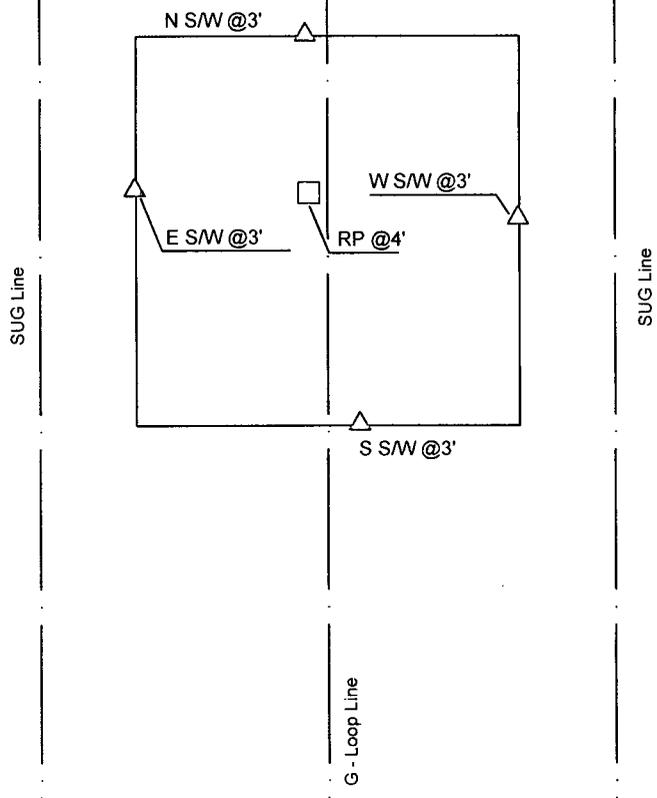
Copy 1: Geoffrey Leking  
New Mexico Energy, Minerals and Natural Resources Department  
Oil Conservation Division (District 1)  
1625 French Drive  
Hobbs, New Mexico 88240

Copy 2: Rose Slade  
Southern Union Gas Services  
801 South Loop 464  
Monahans, Texas 79756

Copy 3: Nova Safety & Environmental  
2057 Commerce Street  
Midland, Texas 79703

## **FIGURES**





|         |                               |
|---------|-------------------------------|
| Legend: |                               |
|         | Sidewall Soil Sample Location |
|         | Pipeline                      |
|         | Floor Soil Sample Location    |

**Figure 2**  
**Site Details & Confirmation**  
**Soil Sample Locations**  
**Southern Union Gas Services**  
**G Loop 8<sup>th</sup> Latetral**  
**Irion County, Tx**

|  |              |                         |             |
|--|--------------|-------------------------|-------------|
|  |              |                         |             |
| <a href="http://www.novasafetyandenvironmental.com">www.novasafetyandenvironmental.com</a> |              |                         |             |
| February 13, 2013  | Scale: 1"-5' | CAD By: CAS             | Checked By: |
| Lat. N 32° 06' 0.025"  |              | Long. W 103° 19' 0.775" |             |

## **TABLES**



## **APPENDICES**

**APPENDIX A:  
Analytical Reports**

**Analytical Report 455312**  
**for**  
**Southern Union Gas Services- Monahans**

**Project Manager: Camille Bryant**  
**SUGS Historical G-Loop Line 1RP-2581**

**16-JAN-13**

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)



16-JAN-13

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

Reference: XENCO Report No(s): **455312**  
**SUGS Historical G-Loop Line 1RP-2581**  
Project Address: Lea County, New Mexico

**Camille Bryant:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 455312. 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. 455312 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 455312



Southern Union Gas Services- Monahans, Monahans, TX

SUGS Historical G-Loop Line 1RP-2581

| Sample Id  | Matrix | Date Collected | Sample Depth | Lab Sample Id |
|------------|--------|----------------|--------------|---------------|
| RP @ 4'    | S      | 01-07-13 15:30 |              | 455312-001    |
| N S/W @ 3' | S      | 01-08-13 10:30 |              | 455312-002    |
| E S/W @ 3' | S      | 01-08-13 10:40 |              | 455312-003    |
| S S/W @ 3' | S      | 01-08-13 11:00 |              | 455312-004    |
| W S/W @ 3' | S      | 01-08-13 11:30 |              | 455312-005    |
| SP-1       | S      | 01-08-13 16:00 |              | 455312-006    |

## CASE NARRATIVE



*Client Name: Southern Union Gas Services- Monahans*  
*Project Name: SUGS Historical G-Loop Line IRP-2581*



Project ID:  
Work Order Number(s): 455312

Report Date: 16-JAN-13  
Date Received: 01/09/2013

---

**Sample receipt non conformances and comments:**

None

---

**Sample receipt non conformances and comments per sample:**

None



# Certificate of Analysis Summary 455312

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



**Project Id:**

**Contact:** Camille Bryant

**Project Location:** Lea County, New Mexico

**Project Name:** SUGS Historical G-Loop Line 1RP-2581

**Date Received in Lab:** Wed Jan-09-13 11:07 am

**Report Date:** 16-JAN-13

**Project Manager:** Nicholas Straccione

| Analysis Requested                                    | Lab Id:    | 455312-001      | 455312-002      | 455312-003      | 455312-004      | 455312-005      | 455312-006      |
|---|------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|   | Field Id:  | RP @ 4'         | N S/W @ 3'      | E S/W @ 3'      | S S/W @ 3'      | W S/W @ 3'      | SP-1            |
|   | Depth:     |                 |                 |                 |                 |                 |                 |
|   | Matrix:    | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            | SOIL            |
|   | Sampled:   | Jan-07-13 15:30 | Jan-08-13 10:30 | Jan-08-13 10:40 | Jan-08-13 11:00 | Jan-08-13 11:30 | Jan-08-13 16:00 |
| BTEX by EPA 8021B                                     | Extracted: | Jan-09-13 13:00 |
|   | Analyzed:  | Jan-09-13 13:11 | Jan-09-13 13:27 | Jan-09-13 13:44 | Jan-09-13 14:00 | Jan-09-13 14:16 | Jan-09-13 14:33 |
|   | Units/RL:  | mg/kg RL        |
| Benzene   |            | ND 0.00107      | ND 0.00105      | ND 0.00107      | ND 0.00117      | ND 0.00106      | ND 0.00103      |
| Toluene   |            | ND 0.00214      | ND 0.00210      | ND 0.00215      | ND 0.00235      | ND 0.00212      | ND 0.00206      |
| Ethylbenzene  |            | ND 0.00107      | ND 0.00105      | ND 0.00107      | ND 0.00117      | ND 0.00106      | ND 0.00103      |
| m_p-Xylenes   |            | ND 0.00214      | ND 0.00210      | ND 0.00215      | ND 0.00235      | ND 0.00212      | ND 0.00206      |
| o-Xylene  |            | ND 0.00107      | ND 0.00105      | ND 0.00107      | ND 0.00117      | ND 0.00106      | ND 0.00103      |
| Total Xylenes   |            | ND 0.00107      | ND 0.00105      | ND 0.00107      | ND 0.00117      | ND 0.00106      | ND 0.00103      |
| Total BTEX  |            | ND 0.00107      | ND 0.00105      | ND 0.00107      | ND 0.00117      | ND 0.00106      | ND 0.00103      |
| Inorganic Anions by EPA 300/300.1<br>SUB: TX104704215 | Extracted: | Jan-10-13 17:14 | Jan-10-13 18:05 | Jan-10-13 18:22 | Jan-10-13 18:39 | Jan-10-13 18:57 | Jan-10-13 19:14 |
|   | Analyzed:  | Jan-10-13 17:14 | Jan-10-13 18:05 | Jan-10-13 18:22 | Jan-10-13 18:39 | Jan-10-13 18:57 | Jan-10-13 19:14 |
|   | Units/RL:  | mg/kg RL        |
| Chloride  |            | 18.1 1.06       | 3.25 1.05       | 129 1.05        | 1.51 1.18       | 33.4 1.06       | 40.1 1.04       |
| Percent Moisture                                      | Extracted: |                 |                 |                 |                 |                 |                 |
|   | Analyzed:  | Jan-09-13 13:50 |
|   | Units/RL:  | % RL            |
| Percent Moisture                                      |            | 6.47 1.00       | 5.07 1.00       | 6.67 1.00       | 15.2 1.00       | 5.88 1.00       | 3.54 1.00       |
| TPH By SW8015 Mod                                     | Extracted: | Jan-09-13 15:30 |
|   | Analyzed:  | Jan-09-13 21:39 | Jan-09-13 23:03 | Jan-09-13 23:32 | Jan-10-13 00:00 | Jan-10-13 00:28 | Jan-10-13 00:56 |
|   | Units/RL:  | mg/kg RL        |
| C6-C12 Gasoline Range Hydrocarbons                    |            | ND 16.0         | ND 15.8         | ND 16.1         | ND 17.7         | ND 16.0         | ND 15.6         |
| C12-C28 Diesel Range Hydrocarbons                     |            | ND 16.0         | ND 15.8         | ND 16.1         | ND 17.7         | ND 16.0         | 290 15.6        |
| C28-C35 Oil Range Hydrocarbons                        |            | ND 16.0         | ND 15.8         | ND 16.1         | ND 17.7         | ND 16.0         | ND 15.6         |
| Total TPH   |            | ND 16.0         | ND 15.8         | ND 16.1         | ND 17.7         | ND 16.0         | 290 15.6        |

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

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

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      **LOQ** Limit of Quantitation

**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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*Certified and approved by numerous States and Agencies.*  
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|   |                |                |
|---|----------------|----------------|
|   | Phone          | Fax            |
| 4143 Greenbriar Dr, Stafford, TX 77477      | (281) 240-4200 | (281) 240-4280 |
| 9701 Harry Hines Blvd, Dallas, TX 75220     | (214) 902 0300 | (214) 351-9139 |
| 5332 Blackberry Drive, San Antonio TX 78238 | (210) 509-3334 | (210) 509-3335 |
| 2505 North Falkenburg Rd, Tampa, FL 33619   | (813) 620-2000 | (813) 620-2033 |
| 12600 West I-20 East, Odessa, TX 79765      | (432) 563-1800 | (432) 563-1713 |
| 6017 Financial Drive, Norcross, GA 30071    | (770) 449-8800 | (770) 449-5477 |
| 3725 E. Atlanta Ave, Phoenix, AZ 85040      | (602) 437-0330 |                |



# Form 2 - Surrogate Recoveries

Project Name: SUGS Historical G-Loop Line 1RP-2581

Work Orders : 455312, 455312

Project ID:

Lab Batch #: 904355

Sample: 455312-001 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 13:11 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>BTEX by EPA 8021B</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene      |                               | 0.0255           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene     |                               | 0.0286           | 0.0300          | 95              | 80-120            |       |

Lab Batch #: 904355

Sample: 455312-002 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 13:27 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>BTEX by EPA 8021B</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene      |                               | 0.0253           | 0.0300          | 84              | 80-120            |       |
| 4-Bromofluorobenzene     |                               | 0.0329           | 0.0300          | 110             | 80-120            |       |

Lab Batch #: 904355

Sample: 455312-003 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 13:44 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>BTEX by EPA 8021B</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene      |                               | 0.0315           | 0.0300          | 105             | 80-120            |       |
| 4-Bromofluorobenzene     |                               | 0.0285           | 0.0300          | 95              | 80-120            |       |

Lab Batch #: 904355

Sample: 455312-004 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 14:00 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>BTEX by EPA 8021B</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene      |                               | 0.0256           | 0.0300          | 85              | 80-120            |       |
| 4-Bromofluorobenzene     |                               | 0.0269           | 0.0300          | 90              | 80-120            |       |

Lab Batch #: 904355

Sample: 455312-005 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 14:16 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>BTEX by EPA 8021B</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene      |                               | 0.0251           | 0.0300          | 84              | 80-120            |       |
| 4-Bromofluorobenzene     |                               | 0.0259           | 0.0300          | 86              | 80-120            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

Project Name: SUGS Historical G-Loop Line 1RP-2581

Work Orders : 455312, 455312

Project ID:

Lab Batch #: 904355

Sample: 455312-006 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 14:33 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>BTEX by EPA 8021B</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1,4-Difluorobenzene      |                               | 0.0261           | 0.0300          | 87              | 80-120            |       |
| 4-Bromofluorobenzene     |                               | 0.0283           | 0.0300          | 94              | 80-120            |       |

Lab Batch #: 904399

Sample: 455312-001 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 21:39 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>TPH By SW8015 Mod</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1-Chlorooctane           |                               | 94.0             | 99.8            | 94              | 70-135            |       |
| o-Terphenyl              |                               | 45.2             | 49.9            | 91              | 70-135            |       |

Lab Batch #: 904399

Sample: 455312-002 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 23:03 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>TPH By SW8015 Mod</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1-Chlorooctane           |                               | 101              | 99.9            | 101             | 70-135            |       |
| o-Terphenyl              |                               | 48.6             | 50.0            | 97              | 70-135            |       |

Lab Batch #: 904399

Sample: 455312-003 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/09/13 23:32 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>TPH By SW8015 Mod</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1-Chlorooctane           |                               | 92.2             | 100             | 92              | 70-135            |       |
| o-Terphenyl              |                               | 44.6             | 50.0            | 89              | 70-135            |       |

Lab Batch #: 904399

Sample: 455312-004 / SMP

Batch: 1 Matrix: Soil

| SURROGATE RECOVERY STUDY |                               |                  |                 |                 |                   |       |
|--------------------------|-------------------------------|------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg             | Date Analyzed: 01/10/13 00:00 | Amount Found [A] | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| <b>TPH By SW8015 Mod</b> |                               |                  |                 |                 |                   |       |
| <b>Analytes</b>          |                               |                  |                 |                 |                   |       |
| 1-Chlorooctane           |                               | 95.7             | 100             | 96              | 70-135            |       |
| o-Terphenyl              |                               | 46.2             | 50.0            | 92              | 70-135            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution.

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

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



# Form 2 - Surrogate Recoveries

Project Name: SUGS Historical G-Loop Line 1RP-2581

Work Orders : 455312, 455312

Project ID:

Lab Batch #: 904399

Sample: 455312-005 / SMP

Batch: 1 Matrix: Soil

| Units: mg/kg      |  | Date Analyzed: 01/10/13 00:28 |                 | SURROGATE RECOVERY STUDY |                   |       |
|-------------------|--|-------------------------------|-----------------|--------------------------|-------------------|-------|
| TPH By SW8015 Mod |  | Amount Found [A]              | True Amount [B] | Recovery %R [D]          | Control Limits %R | Flags |
| Analytes          |  |                               |                 |                          |                   |       |
| 1-Chlorooctane    |  | 95.3                          | 100             | 95                       | 70-135            |       |
| o-Terphenyl       |  | 45.8                          | 50.1            | 91                       | 70-135            |       |

Lab Batch #: 904399

Sample: 455312-006 / SMP

Batch: 1 Matrix: Soil

| Units: mg/kg      |  | Date Analyzed: 01/10/13 00:56 |                 | SURROGATE RECOVERY STUDY |                   |       |
|-------------------|--|-------------------------------|-----------------|--------------------------|-------------------|-------|
| TPH By SW8015 Mod |  | Amount Found [A]              | True Amount [B] | Recovery %R [D]          | Control Limits %R | Flags |
| Analytes          |  |                               |                 |                          |                   |       |
| 1-Chlorooctane    |  | 94.8                          | 100             | 95                       | 70-135            |       |
| o-Terphenyl       |  | 46.2                          | 50.0            | 92                       | 70-135            |       |

Lab Batch #: 904355

Sample: 632171-1-BLK / BLK

Batch: 1 Matrix: Solid

| Units: mg/kg         |  | Date Analyzed: 01/09/13 09:24 |                 | SURROGATE RECOVERY STUDY |                   |       |
|----------------------|--|-------------------------------|-----------------|--------------------------|-------------------|-------|
| BTEX by EPA 8021B    |  | Amount Found [A]              | True Amount [B] | Recovery %R [D]          | Control Limits %R | Flags |
| Analytes             |  |                               |                 |                          |                   |       |
| 1,4-Difluorobenzene  |  | 0.0305                        | 0.0300          | 102                      | 80-120            |       |
| 4-Bromofluorobenzene |  | 0.0338                        | 0.0300          | 113                      | 80-120            |       |

Lab Batch #: 904399

Sample: 632196-1-BLK / BLK

Batch: 1 Matrix: Solid

| Units: mg/kg      |  | Date Analyzed: 01/09/13 21:11 |                 | SURROGATE RECOVERY STUDY |                   |       |
|-------------------|--|-------------------------------|-----------------|--------------------------|-------------------|-------|
| TPH By SW8015 Mod |  | Amount Found [A]              | True Amount [B] | Recovery %R [D]          | Control Limits %R | Flags |
| Analytes          |  |                               |                 |                          |                   |       |
| 1-Chlorooctane    |  | 93.1                          | 99.9            | 93                       | 70-135            |       |
| o-Terphenyl       |  | 45.4                          | 50.0            | 91                       | 70-135            |       |

Lab Batch #: 904355

Sample: 632171-1-BKS / BKS

Batch: 1 Matrix: Solid

| Units: mg/kg         |  | Date Analyzed: 01/09/13 08:51 |                 | SURROGATE RECOVERY STUDY |                   |       |
|----------------------|--|-------------------------------|-----------------|--------------------------|-------------------|-------|
| BTEX by EPA 8021B    |  | Amount Found [A]              | True Amount [B] | Recovery %R [D]          | Control Limits %R | Flags |
| Analytes             |  |                               |                 |                          |                   |       |
| 1,4-Difluorobenzene  |  | 0.0300                        | 0.0300          | 100                      | 80-120            |       |
| 4-Bromofluorobenzene |  | 0.0322                        | 0.0300          | 107                      | 80-120            |       |

\* Surrogate outside of Laboratory QC limits

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

\*\*\* Poor recoveries due to dilution

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

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



# Form 2 - Surrogate Recoveries

**Project Name: SUGS Historical G-Loop Line 1RP-2581**

**Work Orders :** 455312, 455312

**Project ID:**

**Lab Batch #:** 904399

**Sample:** 632196-1-BKS / BKS

**Batch:** 1 **Matrix:** Solid

|   | SURROGATE RECOVERY STUDY |                 |                 |                   |       |
|---|--------------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg      Date Analyzed: 01/09/13 20:15 |                          |                 |                 |                   |       |
| TPH By SW8015 Mod<br><br>Analytes               | Amount Found [A]         | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooctane                                  | 97.2                     | 100             | 97              | 70-135            |       |
| o-Terphenyl                                     | 54.9                     | 50.2            | 109             | 70-135            |       |

**Lab Batch #:** 904355

**Sample:** 632171-1-BSD / BSD

**Batch:** 1 **Matrix:** Solid

|   | SURROGATE RECOVERY STUDY |                 |                 |                   |       |
|---|--------------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg      Date Analyzed: 01/09/13 09:08 |                          |                 |                 |                   |       |
| BTEX by EPA 8021B<br><br>Analytes               | Amount Found [A]         | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluorobenzene                             | 0.0312                   | 0.0300          | 104             | 80-120            |       |
| 4-Bromofluorobenzene                            | 0.0332                   | 0.0300          | 111             | 80-120            |       |

**Lab Batch #:** 904399

**Sample:** 632196-1-BSD / BSD

**Batch:** 1 **Matrix:** Solid

|   | SURROGATE RECOVERY STUDY |                 |                 |                   |       |
|---|--------------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg      Date Analyzed: 01/09/13 20:43 |                          |                 |                 |                   |       |
| TPH By SW8015 Mod<br><br>Analytes               | Amount Found [A]         | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooctane                                  | 95.1                     | 100             | 95              | 70-135            |       |
| o-Terphenyl                                     | 54.1                     | 50.1            | 108             | 70-135            |       |

**Lab Batch #:** 904355

**Sample:** 455231-001 S / MS

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

|   | SURROGATE RECOVERY STUDY |                 |                 |                   |       |
|---|--------------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg      Date Analyzed: 01/09/13 15:54 |                          |                 |                 |                   |       |
| BTEX by EPA 8021B<br><br>Analytes               | Amount Found [A]         | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1,4-Difluorobenzene                             | 0.0283                   | 0.0300          | 94              | 80-120            |       |
| 4-Bromofluorobenzene                            | 0.0319                   | 0.0300          | 106             | 80-120            |       |

**Lab Batch #:** 904399

**Sample:** 455312-001 S / MS

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

|   | SURROGATE RECOVERY STUDY |                 |                 |                   |       |
|---|--------------------------|-----------------|-----------------|-------------------|-------|
| Units: mg/kg      Date Analyzed: 01/09/13 22:07 |                          |                 |                 |                   |       |
| TPH By SW8015 Mod<br><br>Analytes               | Amount Found [A]         | True Amount [B] | Recovery %R [D] | Control Limits %R | Flags |
| 1-Chlorooctane                                  | 99.1                     | 99.9            | 99              | 70-135            |       |
| o-Terphenyl                                     | 54.4                     | 50.0            | 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 / B  
 All results are based on MDL and validated for QC purposes.



# Form 2 - Surrogate Recoveries

**Project Name: SUGS Historical G-Loop Line 1RP-2581**

**Work Orders :** 455312, 455312

**Project ID:**

**Lab Batch #:** 904355

**Sample:** 455231-001 SD / MSD

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

**Units:** mg/kg

**Date Analyzed:** 01/09/13 15:38

**SURROGATE RECOVERY STUDY**

| <b>BTEX by EPA 8021B</b> | <b>Amount Found [A]</b> | <b>True Amount [B]</b> | <b>Recovery %R [D]</b> | <b>Control Limits %R</b> | <b>Flags</b> |
|--------------------------|-------------------------|------------------------|------------------------|--------------------------|--------------|
| <b>Analytes</b>          |                         |                        |                        |                          |              |
| 1,4-Difluorobenzene      | 0.0324                  | 0.0300                 | 108                    | 80-120                   |              |
| 4-Bromofluorobenzene     | 0.0301                  | 0.0300                 | 100                    | 80-120                   |              |

**Lab Batch #:** 904399

**Sample:** 455312-001 SD / MSD

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

**Units:** mg/kg

**Date Analyzed:** 01/09/13 22:35

**SURROGATE RECOVERY STUDY**

| <b>TPH By SW8015 Mod</b> | <b>Amount Found [A]</b> | <b>True Amount [B]</b> | <b>Recovery %R [D]</b> | <b>Control Limits %R</b> | <b>Flags</b> |
|--------------------------|-------------------------|------------------------|------------------------|--------------------------|--------------|
| <b>Analytes</b>          |                         |                        |                        |                          |              |
| 1-Chlorooctane           | 102                     | 99.9                   | 102                    | 70-135                   |              |
| o-Terphenyl              | 55.5                    | 50.0                   | 111                    | 70-135                   |              |

\* Surrogate outside of Laboratory QC limits  
 \*\* Surrogates outside limits; data and surrogates confirmed by reanalysis  
 \*\*\* Poor recoveries due to dilution  
 Surrogate Recovery [D] = 100 \* A / B  
 All results are based on MDL and validated for QC purposes.



# Blank Spike Recovery



Project Name: SUGS Historical G-Loop Line 1RP-2581

Work Order #: 455312

Project ID:

Lab Batch #: 904464

Sample: 632242-1-BKS

Matrix: Solid

Date Analyzed: 01/10/2013

Date Prepared: 01/10/2013

Analyst: RKO

Reporting Units: mg/kg

Batch #: 1

### BLANK /BLANK SPIKE RECOVERY STUDY

| Inorganic Anions by EPA 300/300.1<br>Analytes | Blank Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Control Limits %R | Flags |
|---|------------------|-----------------|------------------------|--------------------|-------------------|-------|
| Chloride                                      | <1.00            | 100             | 95.5                   | 96                 | 80-120            |       |

Blank Spike Recovery [D] = 100\*[C]/[B]

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

BRL - Below Reporting Limit



# BS / BSD Recoveries



Project Name: SUGS Historical G-Loop Line 1RP-2581

Work Order #: 455312, 455312

Analyst: KEB

Date Prepared: 01/09/2013

Project ID:

Date Analyzed: 01/09/2013

Lab Batch ID: 904355

Sample: 632171-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| BTEX by EPA 8021B | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| <b>Analytes</b>   |                         |                 |                        |                    |                 |                                  |                      |       |                   |                     |      |
| Benzene           | <0.00100                | 0.100           | 0.0790                 | 79                 | 0.0996          | 0.0753                           | 76                   | 5     | 70-130            | 35                  |      |
| Toluene           | <0.00200                | 0.100           | 0.0790                 | 79                 | 0.0996          | 0.0749                           | 75                   | 5     | 70-130            | 35                  |      |
| Ethylbenzene      | <0.00100                | 0.100           | 0.0807                 | 81                 | 0.0996          | 0.0757                           | 76                   | 6     | 71-129            | 35                  |      |
| m_p-Xylenes       | <0.00200                | 0.200           | 0.154                  | 77                 | 0.199           | 0.143                            | 72                   | 7     | 70-135            | 35                  |      |
| o-Xylene          | <0.00100                | 0.100           | 0.0818                 | 82                 | 0.0996          | 0.0714                           | 72                   | 14    | 71-133            | 35                  |      |

Analyst: KEB

Date Prepared: 01/09/2013

Date Analyzed: 01/09/2013

Lab Batch ID: 904399

Sample: 632196-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

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

| TPH By SW8015 Mod                  | Blank Sample Result [A] | Spike Added [B] | Blank Spike Result [C] | Blank Spike %R [D] | Spike Added [E] | Blank Spike Duplicate Result [F] | Blk. Spk Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|------------------------------------|-------------------------|-----------------|------------------------|--------------------|-----------------|----------------------------------|----------------------|-------|-------------------|---------------------|------|
| <b>Analytes</b>                    |                         |                 |                        |                    |                 |                                  |                      |       |                   |                     |      |
| C6-C12 Gasoline Range Hydrocarbons | <15.0                   | 1000            | 1000                   | 100                | 1000            | 985                              | 99                   | 2     | 70-135            | 35                  |      |
| C12-C28 Diesel Range Hydrocarbons  | <15.0                   | 1000            | 966                    | 97                 | 1000            | 946                              | 95                   | 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 / MSD Recoveries



Project Name: SUGS Historical G-Loop Line 1RP-2581

Work Order #: 455312

Project ID:

Lab Batch ID: 904355

QC- Sample ID: 455231-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/09/2013

Date Prepared: 01/09/2013

Analyst: KEB

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| BTEX by EPA 8021B<br><br>Analytes | Parent Sample Result [A] | Spike Added [B] | Spiked Sample Result [C] | Spiked Sample %R [D] | Spike Added [E] | Duplicate Spiked Sample Result [F] | Spiked Dup. %R [G] | RPD % | Control Limits %R | Control Limits %RPD | Flag |
|-----------------------------------|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
|                                   | Benzene                  | <0.00120        | 0.120                    | 0.113                | 94              | 0.120                              | 0.0951             | 79    | 17                | 70-130              | 35   |
| Toluene                           | <0.00239                 | 0.120           | 0.104                    | 87                   | 0.120           | 0.0916                             | 76                 | 13    | 70-130            | 35                  |      |
| Ethylbenzene                      | <0.00120                 | 0.120           | 0.108                    | 90                   | 0.120           | 0.0945                             | 79                 | 13    | 71-129            | 35                  |      |
| m_p-Xylenes                       | <0.00239                 | 0.239           | 0.208                    | 87                   | 0.239           | 0.180                              | 75                 | 14    | 70-135            | 35                  |      |
| o-Xylene                          | <0.00120                 | 0.120           | 0.103                    | 86                   | 0.120           | 0.0909                             | 76                 | 12    | 71-133            | 35                  |      |

Lab Batch ID: 904464

QC- Sample ID: 455312-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/10/2013

Date Prepared: 01/10/2013

Analyst: RKO

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| Inorganic Anions by EPA 300/300.1<br><br>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 |
|---|--------------------------|-----------------|--------------------------|----------------------|-----------------|------------------------------------|--------------------|-------|-------------------|---------------------|------|
|   | Chloride                 | 18.1            | 106                      | 114                  | 90              | 106                                | 112                | 89    | 2                 | 80-120              | 20   |

Lab Batch ID: 904399

QC- Sample ID: 455312-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 01/09/2013

Date Prepared: 01/09/2013

Analyst: KEB

Reporting Units: mg/kg

### MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

| TPH By SW8015 Mod<br><br>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 | <16.0           | 1070                     | 1060                 | 99              | 1070                               | 1100               | 103   | 4                 | 70-135              | 35   |
| C12-C28 Diesel Range Hydrocarbons | <16.0                              | 1070            | 1030                     | 96                   | 1070            | 1080                               | 101                | 5     | 70-135            | 35                  |      |

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

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

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



# Sample Duplicate Recovery



Project Name: SUGS Historical G-Loop Line 1RP-2581

Work Order #: 455312

Lab Batch #: 904396

Project ID:

Date Analyzed: 01/09/2013 11:30

Date Prepared: 01/09/2013

Analyst: WRU

QC- Sample ID: 455269-001 D

Batch #: 1

Matrix: Soil

Reporting Units: %

### SAMPLE / SAMPLE DUPLICATE RECOVERY

| Percent Moisture | Parent Sample Result [A] | Sample Duplicate Result [B] | RPD | Control Limits %RPD | Flag |
|------------------|--------------------------|-----------------------------|-----|---------------------|------|
| Analyte          |                          |                             |     |                     |      |
| Percent Moisture | 11.7                     | 10.3                        | 13  | 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



## Prelogin/Nonconformance Report- Sample Log-In

Client: Southern Union Gas Services- Monahan

Acceptable Temperature Range: 0 - 6 degC

Date/ Time Received: 01/09/2013 11:07:00 AM

Air and Metal samples Acceptable Range: Ambient

Work Order #: 455312

Temperature Measuring device used :

| Sample Receipt Checklist   | Comments |
|--|----------|
| #1 *Temperature of cooler(s)?                                    | 10       |
| #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 bubble)? | Yes      |
| #21 <2 for all samples preserved with HNO3,HCL, H2SO4?           | 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: \_\_\_\_\_

**APPENDIX B:  
Photographs**

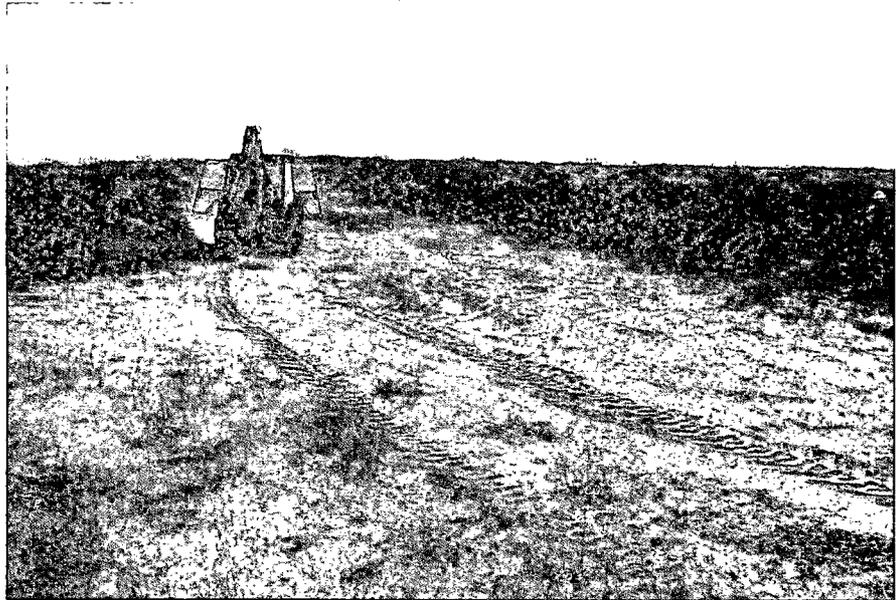
**Client:** Southern Union Gas Services  
**Project Name:** G-Loop 8 Inch Lateral

**Prepared by:** NOVA  
**Location:** Lea County, New Mexico

**Photograph No. 1**

**Direction:**  
Facing South

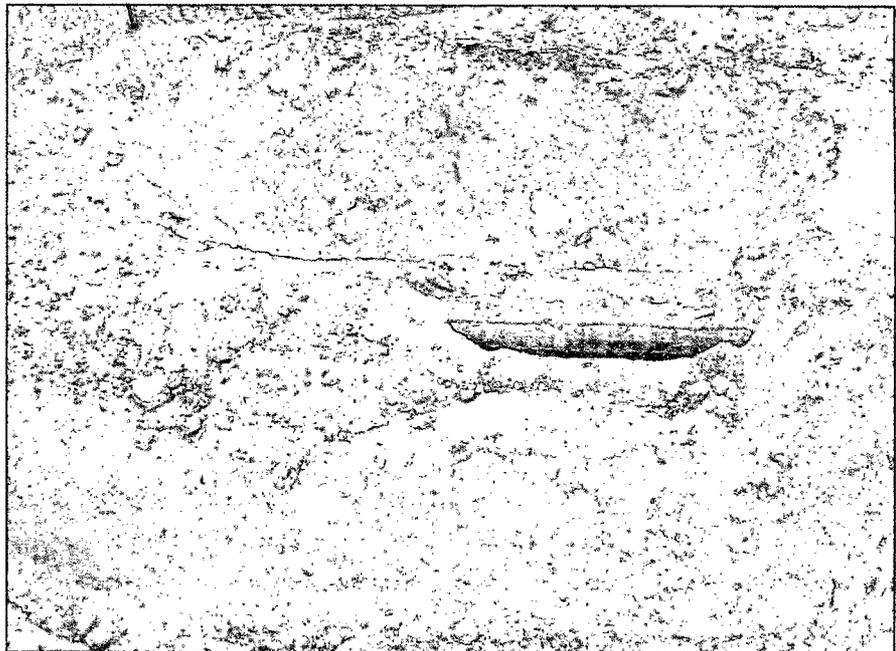
**Description:**  
View of the initial release area.



**Photograph No. 2**

**Direction:**  
Facing East

**Description:**  
View of excavation with  
SUGS pipeline.



**Client:** Southern Union Gas Services  
**Project Name:** G-Loop 8 Inch Lateral

**Prepared by:** NOVA  
**Location:** Lea County, New Mexico

**Photograph No. 3**

**Direction:**  
Facing North

**Description:**  
View of the backfilling activities.



**Photograph No. 4**

**Direction:**  
Facing South

**Description:**  
View of the restored site.



**APPENDIX C:  
Release Notification and Corrective Action  
(Form C-141)**

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

State of New Mexico  
Energy Minerals and Natural Resources  
Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

RECEIVED

JUL 14 2010

HOBBSOCD

Form C-141  
Revised October 10, 2002

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

Release Notification and Corrective Action

OPERATOR

Initial Report

Final Report

|                 |                                     |               |                      |
|-----------------|-------------------------------------|---------------|----------------------|
| Name of Company | Southern Union Gas Services         | Contact       | Rose Slade           |
| Address         | P.O. Box 1226 Jal, New Mexico 88252 | Telephone No. | 432-940-5147         |
| Facility Name   | G-Loop Line 8-Inch Lateral          | Facility Type | Natural Gas Pipeline |
| Surface Owner   | El Paso Natural Gas                 | Mineral Owner |                      |
|                 |                                     | Lease No.     | 30-075-38822         |

LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|-------------|---------|----------|-------|---------------|------------------|---------------|----------------|--------|
| G           | 7       | 26S      | 37E   |               |                  |               |                | Lea    |

Latitude 32.06025 Longitude 103.119775

NATURE OF RELEASE

|                             |   |   |         |                            |                         |
|-----------------------------|---|---|---------|----------------------------|-------------------------|
| Type of Release             | Crude Oil and Produced Water  | Volume of Release                         | 6 BBLs  | Volume Recovered           | 0 BBLs                  |
| Source of Release           | 8-Inch Steel Pipeline   | Date and Hour of Occurrence               | Unknown | Date and Hour of Discovery | July 1, 2010, 11:40 hrs |
| Was Immediate Notice Given? | <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required | If YES, To Whom?                          |         |                            |                         |
| By Whom?                    |   | Date and Hour                             |         |                            |                         |
| Was a Watercourse Reached?  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No                                       | If YES, Volume Impacting the Watercourse. |         |                            |                         |

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*

Internal Corrosion caused a failure of an 8-inch steel pipeline, resulting in a surface stain of approximately 1,000 square feet. The pipeline was fitted with a temporary pipeline clamp to mitigate the release. No H2S was detected from the release.

Describe Area Affected and Cleanup Action Taken.\*

An area measuring approximately 1,500 square feet was affected by the release. Clean sorb was applied to the surface stain to further stabilize the release and absorbent booms were installed in low areas along the fence line to minimize the potential for travel outside the station during a rain event. The release will be remediated according to NMOCD regulatory guidelines.

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

|  |   |                                 |
|--|---|---------------------------------|
| Signature: <i>Rose L. Slade</i>                  | OIL CONSERVATION DIVISION   |                                 |
| Printed Name: <i>Rose L. Slade</i>               | Approved by District Supervisor <i>[Signature]</i>  | ENVIRONMENTAL ENGINEER          |
| Title: <i>EHS Compliance Specialist</i>          | Approval Date: <i>7.13.10</i>   | Expiration Date: <i>9.13.10</i> |
| E-mail Address: <i>rose.slade@sug.com</i>        | Conditions of Approval.   |                                 |
| Date: <i>7/9/2010</i> Phone: <i>432-940-5147</i> | <i>SUBMIT FINAL C-141 w/DOCS BY</i> Attached <input type="checkbox"/> <i>IRP# 10-7-2581</i> |                                 |

\* Attach Additional Sheets If Necessary

INCD NLWJ 1019432769  
ADM PLWJ 1019433095