CORRECTIVE ACTION REPORT

Property:

1002 Line Leak 2
32.22287, -104.05838
NE¼ NW ¼, S14 T24S R28E
Eddy County, New Mexico
ECIRTS: 25299
2RP-2893

October 2015
Apex Project No. 7250715029.001

Prepared for:

Enterprise Field Services, LLC
PO Box 4324
Houston, TX 77252
Attention: Dina Ferguson

Prepared by:

Karolanne Toby
Project Geologist

Liz Scaggs, P.G.
Division Manager

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1.0 INTRODUCTION

1.1 Site Description & Background

The 1002 Line Leak 2 Release Site is located within the Enterprise Field Services, LLC (Enterprise) pipeline right-of-way (ROW) in the northeast (NE) ¼ of the northwest (NW) ¼ of Section 14 in Township 24 South and Range 28 East in rural Eddy County, New Mexico (32.22287N, 104.05838 W), referred to hereinafter as the "Site" or "subject Site". The Site is located on property consisting of native rangeland periodically interrupted by oil and gas production and gathering facilities, including the Enterprise 1002 natural gas gathering pipeline (1002 line). The pipeline traverses the site from west to east to the center of the Site, where the pipeline connects to an elbow joint and changes direction from south to north. The release occurred in the vicinity of the elbow joint near the center of the affected area.

On March 11, 2015, Enterprise was notified of a leak detected on the 1002 line by an Enterprise technician. Enterprise isolated the leaking portion, and the pipeline section was blown down to carry out repair activities. Enterprise originally noted that there was approximately one (1) barrel (bbl) of pipeline liquid released from the leaking portion of the pipeline. Subsequent to investigation and remediation activities, the pipeline liquid spill volume was determined to be approximately seven (7) bbls. The release was determined to have occurred due to internal corrosion. The initial remediation activities were conducted on March 23, 2015. Excavation activities resumed on April 23 and were completed on August 27, 2015, to remediate surface soil impacts from the release of pipeline liquids.

A topographic map depicting the location of the Site is included as Figure 1, and a Site Vicinity Map is included as Figure 2 in Appendix A.

1.2 Project Objective

The primary objective of the corrective actions was to reduce the concentration of constituents of concern (COCs) in on-Site soils to below the New Mexico Energy, Minerals, and Natural Resources Department (EMNRD), Oil Conservation Division (OCD) *Remediation Action Levels* using the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

2.0 SITE RANKING

In accordance with the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases*, Apex TITAN, Inc. (Apex) utilized the general site characteristics obtained during the completion of corrective action activities and information available from the New Mexico Office of the State Engineer (OSE) to determine the appropriate "ranking" for the Site. The ranking criteria and associated scoring are provided in the following table:

Ranking Criteria			Ranking Score
Depth to Groundwater	<50 feet	20	**10**
	50 to 99 feet	10	
	>100 feet	0	
Wellhead Protection Area <1,000 feet from a water source, or; <200 feet from private domestic water source.	Yes	20	0
	No	0	
Distance to Surface Water Body	<200 feet		0
	200 to 1,000 feet	10	
	>1,000 feet	0	
Total Ranking Score			**10**

Based on Apex's evaluation of the scoring criteria, the Site would have a maximum Total Ranking Score of "10". This ranking is based on the following:

- The approximate depth to the initial groundwater-bearing zone is between 50 and 99 feet at the site.
- No water source wells (municipal/community wells) were identified within 1,000 feet of the Site. No private domestic water sources were identified within 200 feet of the Site.
- The distance to the nearest surface water body is greater than 1,000 feet.

Based on a Total Ranking Score of "10", cleanup goals for soils remaining in place include:

- 10 milligrams per kilogram (mg/Kg) for benzene
- 50 mg/Kg for total benzene, toluene, ethylbenzene and xylene (BTEX)
- 1,000 mg/Kg for total petroleum hydrocarbons (TPH)
- 500 mg/Kg for chloride.

3.0 RESPONSE ACTIONS

3.1 Soil Remediation Activities

On March 11, 2015, Enterprise was informed of a pipeline leak detected by an Enterprise technician on the 1002 line. Enterprise isolated the leaking portion and the pipeline section was blown down to carry out repair activities. It was at this time that Enterprise initially noted the volume of pipeline liquids released as approximately one (1) bbl.

The initial excavation was carried out on March 23, 2015 by Willbros Construction. Impacted soil was removed from below and surrounding the release point on the pipeline. Based on laboratory analytical results for the initial confirmation samples, the affected areas along the excavation walls and floor were over-excavated. On April 23, 2015, additional confirmation samples were collected subsequent to over-excavating the impacted soils.

On June 26, 2015, additional soils were removed from the excavation western wall and floor. Additional confirmation samples were collected subsequent to over-excavation. Based on laboratory analytical results, additional impacted soil was removed from the floor of the excavation. On June 30, 2015, Enterprise submitted an updated C-141 form noting that the volume of pipeline liquids released was estimated at approximately seven (7) bbls. The submitted initial and updated C-141 forms are provided in Appendix E.

On August 27, 2015, excavation activities resumed and impacted soil was removed from the floor of the excavation.

Final excavation dimensions were approximately nineteen (19) feet long by fifteen (15) feet wide with an approximate depth of nineteen (19) feet at the release point. Impacted soil was removed and collected into two (2) stockpiles on Site.

Backfill of the excavation was completed on September 8, 2015. The stockpiled material from the excavation was taken to a state approved disposal facility. The excavation was backfilled with clean fill material and the area was returned to original surface grade. Copies of the waste disposal manifests are provided in Appendix F.

3.2 Soil Sampling Program

On March 20, 2015, Apex collected six (6) confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall and RP) from each wall of the excavation and directly under the point of release. Two (2) background soil samples were collected northeast and southeast of the excavation (BKG1 and BKG 2) to compare excavation confirmation sample chloride concentrations to the native soil concentration of chloride. In addition, a sample was collected from the stockpiled material (SP) for disposal purposes.

Laboratory analytical results for the initial confirmation soil samples indicated additional soil removal was required from the excavation sidewalls and floor. On April 23, 2015, additional confirmation soil samples (N Wall RE, S Wall RE, E Wall RE and RP RE) were collected subsequent to over-excavating impacted soils.

Laboratory analytical results indicated additional soil removal was required. On June 26, 2015, additional confirmation soil samples (N Wall, W Wall and RP) were collected subsequent to over-excavation. In addition, two samples were collected from the stockpiled material (STP 1 and STP 2) for disposal purposes.

Laboratory analytical results indicated additional soil removal was required from below the release point. On August 27, 2015, an additional confirmation soil sample (CS-1) was collected near the point of release subsequent to over excavation. In addition, a sample was collected from the stockpiled material (STP-2-RE) for disposal purposes.

Soil samples were collected in laboratory supplied glass containers, cooled to approximately 4° C, transported under proper chain-of-custody procedures and documentation. Soil samples were submitted for analysis under chain of custody control to Trace Analysis laboratory in Midland, Texas and Xenco Laboratories in Midland, TX. Soil samples were analyzed for total petroleum hydrocarbons, gasoline range organics and diesel range organics, (TPH GRO/DRO) by method EPA Method 8015B, benzene, toluene, ethylbenzene and xylenes (BTEX) using EPA Method 8021B, and chloride utilizing method 4500-Cl B and EPA method 300/300.1.

Executed chain-of-custody form and laboratory data sheets are provided in Appendix D. All samples were analyzed within specified holding times.

Figure 3 is a Site Map that indicates the approximate location of the confirmation soil samples in relation to pertinent land features and general excavation boundaries (Appendix A).

4.0 DATA EVALUATION

The Site is subject to regulatory oversight by the New Mexico EMNRD OCD. To address activities related to condensate releases, the New Mexico EMNRD OCD utilizes the *Guidelines for Remediation of Leaks, Spills and Releases* as guidance, in addition to the OCD rules, specifically NMAC 19.15.29 *Remediation Plan*. These guidance documents establish investigation and abatement action requirements for sites subject to reporting and/or corrective action.

4.1 Excavation Confirmation Samples

Apex compared the benzene, BTEX, TPH and chloride concentrations associated with the confirmation soil samples collected from the Site to the OCD Recommended Remediation Action Levels (RRALs) for sites having a total ranking score of 10.

Laboratory analyses of the initial confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall and RP) taken on March 23, 2015 indicated benzene concentrations of less than the reporting limits of 0.0200 milligrams per Kilogram (mg/Kg) to 0.158 mg/Kg, which is below the OCD RRAL of 10 mg/Kg for a Site ranking of 10. Laboratory analyses of initial confirmation soil samples (N-Wall, S-Wall, E-Wall, W-Wall and RP) indicated total BTEX concentrations ranging from below the laboratory reporting limits of 0.0200 mg/Kg to 47.93 mg/Kg, which are below the OCD RRAL of 50 mg/Kg for a Site ranking of 10.

Initial confirmation soil samples (N-Wall, E-Wall and W-Wall) indicated TPH concentrations ranging from below the laboratory reporting limits to 4.17 mg/Kg, which are below the OCD RRAL of 1,000 mg/Kg for a Site ranking of 10. Initial confirmation soil samples S-Wall and RP indicated TPH concentrations of 2,157 mg/Kg and 4,450 mg/Kg, respectively, which are above the OCD RRAL of 1,000 mg/Kg for a Site ranking of 10.

Initial confirmation soil sample RP indicated a chloride concentration of 478 mg/Kg, which is below the OCD RRAL of 500 mg/Kg for a Site ranking of "10". Initial confirmation soil samples (N-Wall, S-Wall, E-Wall and W-Wall) indicate chloride concentrations of 766 mg/Kg to 6,030 mg/Kg, which are above the OCD RRAL of 500 mg/Kg for a Site ranking of 10.

Subsequent to over-excavation activities at the Site, laboratory analyses of the additional confirmation soil sample S Wall RE, taken on April 23, 2015, indicate a TPH concentration of less than the reporting limits of 54.0 mg/Kg, which is below the OCD RRAL of 1,000 mg/Kg for a Site ranking of 10. Laboratory analyses of additional confirmation soil sample RP RE indicated a TPH concentration of 11,380, which is above the OCD RRAL of 1,000 mg/Kg for a Site ranking of "10". Additional confirmation soil samples (N Wall RE and E Wall RE) were not analyzed for TPH. All additional confirmation samples taken on April 23, 2015, were not analyzed for BTEX.

Laboratory analyses of additional confirmation soil samples taken on April 23, 2015, subsequent to over-excavation activities (E Wall RE and S Wall RE) indicate chloride concentrations of less than the reporting limits of 20.0 mg/Kg, which are below the OCD RRAL of 500 mg/Kg for a Site ranking of 10. Laboratory analyses of the additional confirmation soil sample N Wall RE indicated a chloride concentration of 1,080 mg/Kg, which is above the OCD RRAL of 500 mg/Kg for a Site ranking of 10. Additional confirmation soil sample RP RE was not analyzed for chloride.

Subsequent to additional over-excavation activities at the Site, laboratory analyses of additional confirmation soil sample RP, taken on June 26, 2015, indicated a TPH concentration of 3,130 mg/Kg, which is above the OCD RRAL of 1,000 mg/Kg for a Site ranking of 10. Additional confirmation soil samples (N Wall and W Wall) taken on June 26, 2015, indicate chloride concentrations ranging from less than the reporting limits of 20.0 mg/Kg to 94.0 mg/Kg, which are below the OCD RRAL of 500 mg/Kg for a Site ranking of 10. Confirmation soil sample RP was not analyzed for BTEX or chloride. Confirmation soil samples (N Wall and W Wall) were not analyzed for BTEX or TPH.

Subsequent to additional over-excavation at the Site in the vicinity of the release point, laboratory analyses of the additional confirmation soil sample CS-1, taken on August 27, 2015, indicated a benzene concentration of 0.0274 mg/Kg, which is below the OCD RRAL of 10 mg/Kg for a Site ranking of 10. Laboratory analyses of confirmation soil sample CS-1 indicated a BTEX concentration of 0.300 mg/Kg, which is below the OCD RRAL for a Site ranking of 10. Laboratory analyses of confirmation soil sample CS-1 indicated a TPH concentration of 15.6 mg/Kg, which is below the OCD RRAL of 1,000 mg/Kg for a Site ranking of 10. Laboratory analyses of confirmation soil sample CS-1 indicated a chloride concentration of 186 mg/Kg, which is below the OCD RRAL of 500 mg/Kg for a Site ranking of 10.

Analytical results for confirmation soil samples collected from the Site are provided in Table 1 in Appendix C.

5.0 FINDINGS AND RECOMMENDATIONS

The 1002 Line Leak 2 Release Site is located within the Enterprise pipeline ROW in rural Eddy County, New Mexico. The Site is located on property consisting of native rangeland periodically interrupted by oil and gas production and gathering facilities, including the Enterprise 1002 line. The release occurred in the vicinity of the elbow joint near the center of the affected area.

On March 11, 2015, Enterprise was notified of a leak detected on the 1002 line by an Enterprise technician. Enterprise isolated the leaking portion, and the pipeline section was blown down to carry out repair activities. Enterprise originally noted that there was approximately one (1) barrel (bbl) of pipeline liquid released from the leaking portion of the pipeline. Subsequent to investigation and remediation activities, the pipeline liquid spill volume was determined to be approximately seven (7) bbls. The release was determined to have occurred due to internal corrosion. The initial remediation activities were conducted on March 23, 2015. Excavation activities resumed on April 23 and were completed on August 27, 2015, to remediate surface soil impacts from the release of pipeline liquids.

- The primary objective of the corrective actions was to reduce the concentration of COCs in the on-Site soils to below the New Mexico EMNRD OCD *RALs* using the New Mexico EMNRD OCD's *Guidelines for Remediation of Leaks, Spills and Releases* as guidance.

- On-Site remediation included excavation of the affected area impacted by the release of natural gas pipeline liquids starting from the release point. The excavated area measures approximately nineteen (19) feet long by fifteen (15) feet wide with an approximate depth of nineteen (19) feet at the release point. Impacted soil was removed and collected into two (2) stockpiles on Site.

- The two (2) stockpiles on Site were transported to a state approved disposal facility, Lea Landfill, in Eunice, NM. The excavation was backfilled with non-impacted clean fill material and returned to approximate original grade.

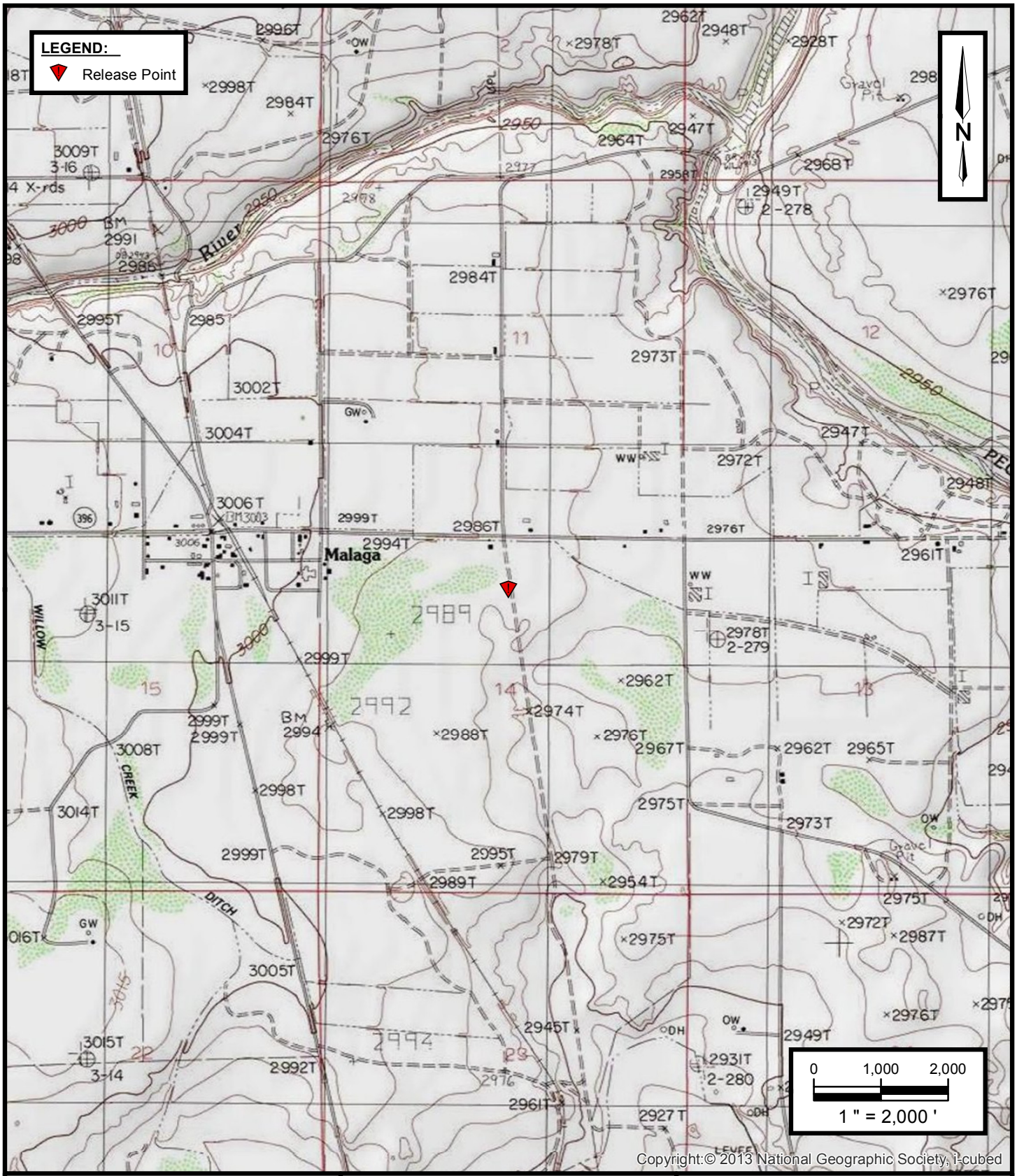
- A total of five (5) initial confirmation soil samples were collected from the initial excavation for laboratory analyses. Based on analytical results, additional excavation was necessary. Four (4) additional confirmation soil samples were collected from the excavation. Subsequent to additional over-excavation based on laboratory analysis, three (3) additional confirmation soil samples were collected. Additional excavation was necessary in the vicinity of the release point based on laboratory analysis, and an additional confirmation soil sample was collected at the point of release.

- The final confirmation soil sample results indicate total benzene, BTEX, TPH GRO/DRO and chloride concentrations are below the applicable OCD RRALs of 10 mg/Kg, 50 mg/Kg, 1,000 mg/Kg and 500 mg/Kg, respectively, for the Site Total Ranking Score of 10.

Based on field observations and laboratory analytical results, no additional investigation or corrective action appears warranted at this time.

APPENDIX A

Figures



Enterprise Field Services, LLC
1002 Line Leak 2
Eddy County, New Mexico
32.222980 N, 104.057943 W

Project No. 7250715029

Apex TITAN, Inc.
505 N Big Spring St., Suite 301A
Midland, Texas 79701
Phone: (432) 695-6016
www.apexcos.com
A Subsidiary of Apex Companies, LLC

FIGURE 1

Topographic Map

Malaga New Mexico Quadrangle
1985

P:\Drafting\Midland\2015\7250715029\Figure 1.mxd 10/12/2015 NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US Projected Coordinate System

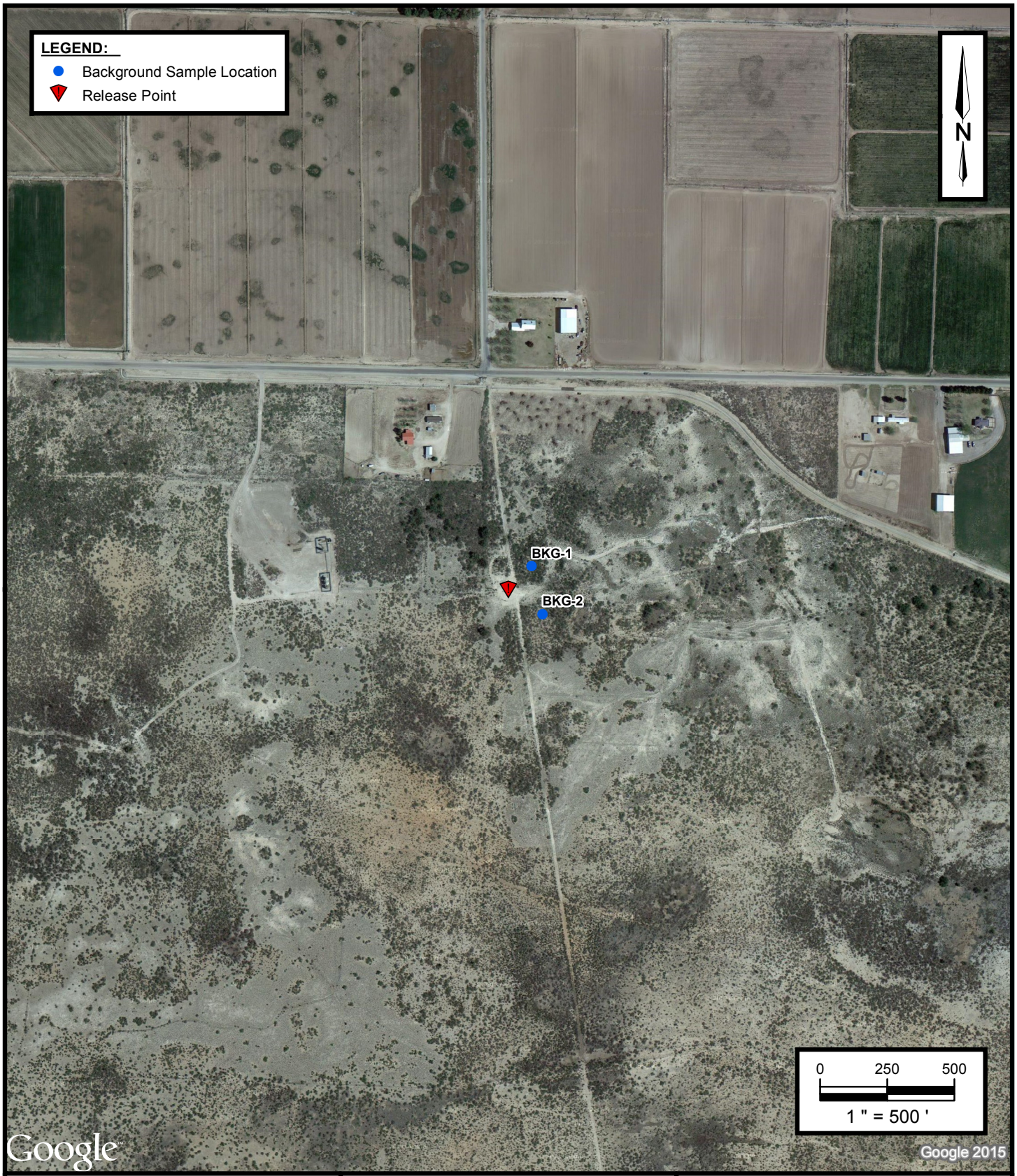


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FIGURE 2

Site Vicinity Map

Aerial Photograph April 2013

P:\Drafting\Midland\2015\7250715029\Figure 2.mxd 10/12/2015 NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US Projected Coordinate System

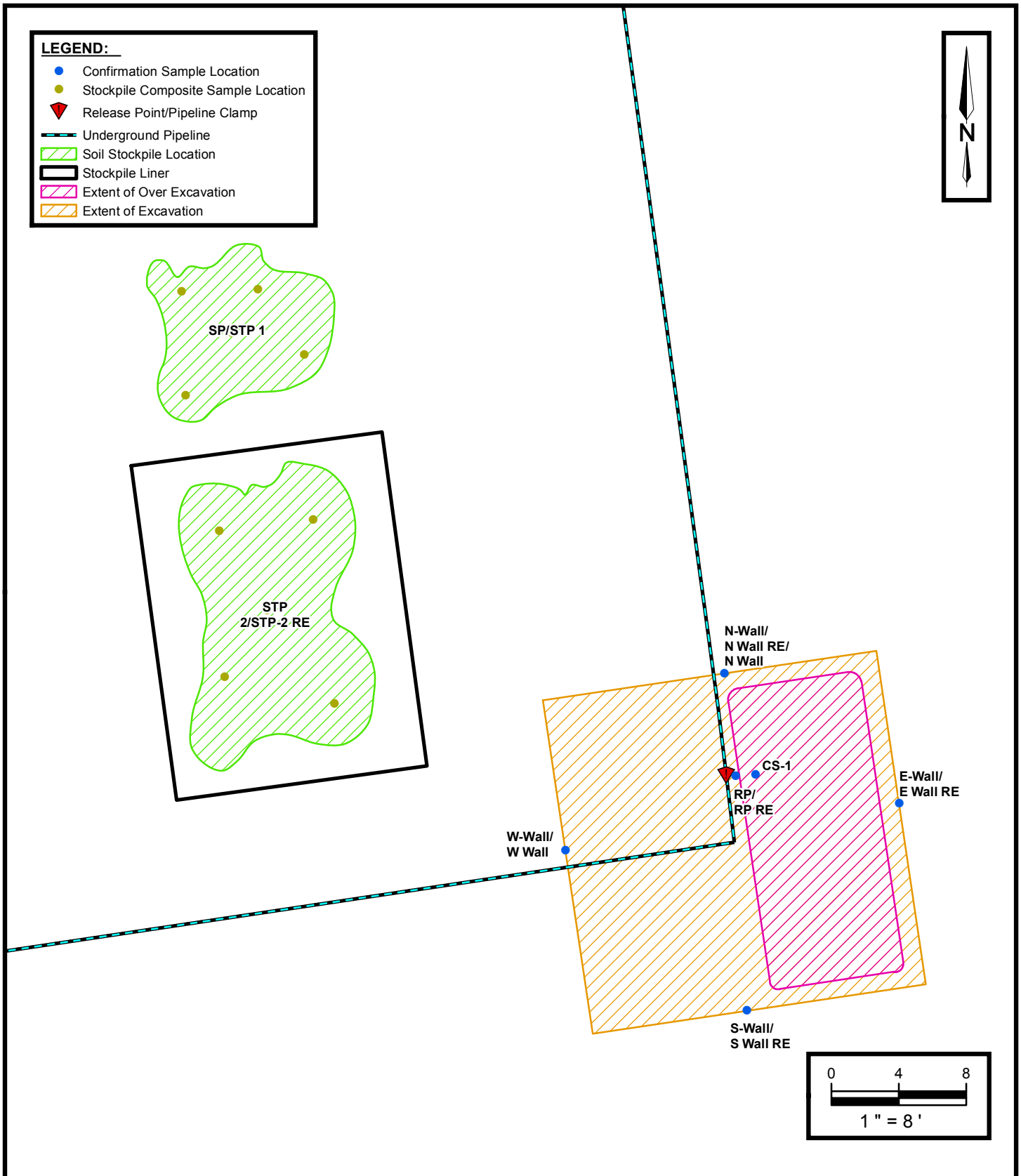

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FIGURE 3

Site Map

P:\Drafting\Midland\2015\7250715029\Figure 3.mxd 10/13/2015 NAD 1983 2011 StatePlane New Mexico East FIPS 3001 Ft US Projected Coordinate System

APPENDIX B

Photographic Documentation

View of initial excavation, facing south.

View of excavation subsequent to additional excavation, facing northeast.

View of stockpiled material next to the excavation prior to disposal.

APPENDIX C

Analytical Tables

TABLE 1
SOIL SAMPLE ANALYTICAL RESULTS
1002 Line Release - 2

Sample I.D.	Sample Date	Sample Depth (feet bgs)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylenes (mg/Kg)	Total BTEX	TPH GRO (mg/Kg)	TPH DRO (mg/Kg)	TPH GRO/DRO (mg/Kg)	Chloride (mg/Kg)
New Mexico Oil Conservation Division (NMOCD) Recomended Remediation Action Levels (RRALs) (Total Ranking Score: 10)											
New Mexico Energy, Mineral & Natural Resources Department, Oil Conservation Division, Remediation Action Level			**10**	**NE**	**NE**	**NE**	**50**	**NE**	**NE**	**1,000**	**500**
BACKGROUND SAMPLE ANALYTICAL RESULTS											
BKG 1	3/23/2015	2	NS	NS	NS	NS	NS	NS	NS	NS	**376**
BKG 2	3/23/2015	3	NS	NS	NS	NS	NS	NS	NS	NS	**563**
EXCAVATION SAMPLE ANALYTICAL RESULTS											
N-Wall	3/23/2015	2.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<50.0	**2,200**
N Wall RE	4/23/2015	3	NS	NS	NS	NS	NS	NS	NS	NS	**1,080**
N Wall	6/26/2015	3.2	NS	NS	NS	NS	NS	NS	NS	NS	<20.0
E-Wall	3/23/2015	2.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<50.0	**3,250**
E Wall RE	4/23/2015	3	NS	NS	NS	NS	NS	NS	NS	NS	<20.0
S-Wall	3/23/2015	2.5	**0.158**	**3.67**	**4.98**	**21.9**	**30.71**	**1,400**	**757**	**2,157**	**6,030**
S Wall RE	4/23/2015	3	NS	NS	NS	NS	NS	<4.00	<50.0	<50.0	<20.0
W-Wall	3/23/2015	2.5	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	**4.17**	<50.0	**4.17**	**766**
W Wall	6/26/2015	3.2	NS	NS	NS	NS	NS	NS	NS	NS	**94.0**
RP	3/23/2015	3	**0.179**	**4.35**	**11.6**	**31.8**	**47.93**	**1,720**	**2,730**	**4,450**	**478**
RP RE	4/23/2015	6	NS	NS	NS	NS	NS	**8,440**	**2,940**	**11,380**	NS
RP	6/26/2015	13.5	NS	NS	NS	NS	NS	**1,480**	**1,650**	**3,130**	NS
CS-1	8/27/2015	19	**0.0274**	**0.0762**	**0.0125**	**0.184**	**0.300**	15.6	<15.0	15.6	**186**
STOCKPILE SAMPLE ANALYTICAL RESULTS											
SP	3/23/2015	NA	**0.155**	**1.86**	**0.300**	**9.20**	**11.52**	**960**	**1,800**	**2,760**	**288**
STP 1	6/26/2015	NA	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<4.00	<50.0	<50.0	<20.0
STP 2	6/26/2015	NA	**1.57**	**10.8**	**2.34**	**25.2**	**39.91**	**482**	**767**	**1,249**	**377**
STP-2-RE	8/27/2015	NA	**0.0153**	**0.141**	**0.0401**	**0.586**	**0.782**	**276**	**1,050**	**1,330**	**267**

*Note: concentrations in **bold** and yellow exceed the applicable OCD remediation action levels*

-indicates overexcavated area

mg/Kg- milligrams per Kilogram

NE - Not Established

NS - Not Sampled

NA - Not Applicable

APPENDIX D

Laboratory Analytical Reports & Chain-of-Custody Documentation

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Karolanne Toby
APEX/Titan
2351 W. Northwest Hwy.
Suite 3321
Dallas, Tx, 75220

Report Date: April 8, 2015

Work Order: 15032410

Project Name: 1002 Line Release-2
Project Number: 7250715029.001

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
389403	BKG 1	soil	2015-03-23	14:40	2015-03-24
389404	BKG 2	soil	2015-03-23	14:55	2015-03-24

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project 1002 Line Release-2 were received by TraceAnalysis, Inc. on 2015-03-24 and assigned to work order 15032410. Samples for work order 15032410 were received intact at a temperature of 3.0 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	102010	2015-04-06 at 13:46	120549	2015-04-06 at 13:47

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15032410 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 389403 - BKG 1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120549	Date Analyzed:	2015-04-06	Analyzed By:	EM
Prep Batch:	102010	Sample Preparation:	2015-04-06	Prepared By:	EM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**376**		mg/Kg	5	4.00

Sample: 389404 - BKG 2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120549	Date Analyzed:	2015-04-06	Analyzed By:	EM
Prep Batch:	102010	Sample Preparation:	2015-04-06	Prepared By:	EM

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
Chloride			**563**		mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 120549

QC Batch:	120549	Date Analyzed:	2015-04-06	Analyzed By:	EM
Prep Batch:	102010	QC Preparation:	2015-04-06	Prepared By:	EM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 120549 | Date Analyzed: 2015-04-06 | Analyzed By: EM
Prep Batch: 102010 | QC Preparation: 2015-04-06 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2630	mg/Kg	5	2500	<19.2	105	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2720	mg/Kg	5	2500	<19.2	109	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 390357

QC Batch:	120549	Date Analyzed:	2015-04-06	Analyzed By:	EM
Prep Batch:	102010	QC Preparation:	2015-04-06	Prepared By:	EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			13300	mg/Kg	5	2500	10600	108	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			13600	mg/Kg	5	2500	10600	120	78.9 - 121	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Calibration Standards

Standard (ICV-1)

QC Batch: 120549 | Date Analyzed: 2015-04-06 | Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-04-06

Standard (CCV-1)

QC Batch: 120549 | Date Analyzed: 2015-04-06 | Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-04-06

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

15032410

CHAIN OF CUSTODY RECORD

APEX

Office Location: Midland, TX

Project Manager: Karolanne Toby

Sampler's Name: Claudia Corrales

Sampler's Signature:

Laboratory: Trace Analysis

Address:

Contact:

Phone:

PO/SO #:

ANALYSIS REQUESTED

Lab use only

Due Date:

Temp. of coolers when received (C°): 3.0

1	2	3	4	5

Page 1 of 1

Proj. No.: 725071502 9.01

Project Name: 1002 Line Release-2

No/Type of Containers: 2

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Chlorides	Lab Sample ID (Lab Use Only)
S	3/23/15	14:40		X	BKG 1		2'				X		X	389403
S	3/23/15	14:55		X	BKG 2		3'				X		X	1 404

CC 3/23/15

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/24/15	9:17		3.24.15	9:17
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES: Place on hold until contacted

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other _____

15032410

CHAIN OF CUSTODY RECORD

APEX

Office Location: Midland, TX

Project Manager: Karolanne Toby

Laboratory: Trace Analysis

Address:

Contact:

Phone:

PO/SO #:

Sampler's Name: Claudia Corrales

Sampler's Signature:

Proj. No.: 725071502911

Project Name: 1002 Line Release-2

No/Type of Containers: 2

ANALYSIS REQUESTED

Run per: Sheryl S. 4/3/15 @

Chlorides

Lab use only
Due Date:

Temp. of coolers when received (C°): 3.0

1 | 2 | 3 | 4 | 5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	3/23/15	14:40		X	BKG 1		2'				X		389403
S	3/23/15	14:55		X	BKG 2		3'				X		404

CC 3/23/15

Turn around time: ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/24/15	9:17		3.24.15	9:17
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Place on hold until contacted

bmc

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Karolanne Toby
APEX/Titan
2351 W. Northwest Hwy.
Suite 3321
Dallas, Tx, 75220

Report Date: March 30, 2015

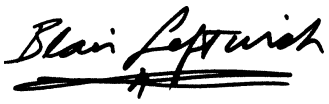
Work Order: 15032408

Project Name: 1002 Line Release-2
Project Number: 7250715029.001

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
389397	N-Wall	soil	2015-03-23	14:02	2015-03-24
389398	E-Wall	soil	2015-03-23	14:04	2015-03-24
389399	S-Wall	soil	2015-03-23	14:06	2015-03-24
389400	W-Wall	soil	2015-03-23	14:08	2015-03-24
389401	RP	soil	2015-03-23	14:10	2015-03-24
389402	SP	soil	2015-03-23	14:12	2015-03-24

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project 1002 Line Release-2 were received by TraceAnalysis, Inc. on 2015-03-24 and assigned to work order 15032408. Samples for work order 15032408 were received intact at a temperature of 3.0 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	101767	2015-03-26 at 08:36	120317	2015-03-27 at 07:20
BTEX	S 8021B	101813	2015-03-27 at 11:51	120368	2015-03-30 at 08:20
Chloride (Titration)	SM 4500-Cl B	101731	2015-03-24 at 15:39	120238	2015-03-24 at 15:40
Chloride (Titration)	SM 4500-Cl B	101782	2015-03-26 at 11:31	120302	2015-03-26 at 11:32
TPH DRO - NEW	S 8015 D	101727	2015-03-24 at 14:49	120250	2015-03-25 at 08:09
TPH GRO	S 8015 D	101767	2015-03-26 at 08:36	120318	2015-03-27 at 07:28

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15032408 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 389397 - N-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.86	mg/Kg	1	2.00	93	70 - 130
4-Bromofluorobenzene (4-BFB)			2.08	mg/Kg	1	2.00	104	70 - 130

Sample: 389397 - N-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120238	Date Analyzed:	2015-03-24	Analyzed By:	EM
Prep Batch:	101731	Sample Preparation:	2015-03-24	Prepared By:	EM

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			**2200**	mg/Kg	5	4.00

Sample: 389397 - N-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120250	Date Analyzed:	2015-03-25	Analyzed By:	SC
Prep Batch:	101727	Sample Preparation:	2015-03-24	Prepared By:	SC

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		131	mg/Kg	1	100	131	70 - 130

Sample: 389397 - N-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			2.01	mg/Kg	1	2.00	100	70 - 130

Sample: 389398 - E-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			2.10	mg/Kg	1	2.00	105	70 - 130

Sample: 389398 - E-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120238	Date Analyzed:	2015-03-24	Analyzed By:	EM
Prep Batch:	101731	Sample Preparation:	2015-03-24	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**3250**	mg/Kg	5	4.00

Sample: 389398 - E-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120250	Date Analyzed:	2015-03-25	Analyzed By:	SC
Prep Batch:	101727	Sample Preparation:	2015-03-24	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	131	mg/Kg	1	100	131	70 - 130

Sample: 389398 - E-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	1	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.98	mg/Kg	1	2.00	99	70 - 130

Sample: 389399 - S-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1	**0.158**	mg/Kg	2	0.0200
Toluene		1	**3.67**	mg/Kg	2	0.0200
Ethylbenzene		1	**4.98**	mg/Kg	2	0.0200
Xylene		1	**21.9**	mg/Kg	2	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			3.14	mg/Kg	2	4.00	78	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	16.2	mg/Kg	2	4.00	405	70 - 130

Sample: 389399 - S-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120238	Date Analyzed:	2015-03-24	Analyzed By:	EM
Prep Batch:	101731	Sample Preparation:	2015-03-24	Prepared By:	EM

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**6030**	mg/Kg	5	4.00

Sample: 389399 - S-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120250	Date Analyzed:	2015-03-25	Analyzed By:	SC
Prep Batch:	101727	Sample Preparation:	2015-03-24	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**757**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	147	mg/Kg	1	100	147	70 - 130

Sample: 389399 - S-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**1400**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			36.4	mg/Kg	20	40.0	91	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	72.0	mg/Kg	20	40.0	180	70 - 130

Sample: 389400 - W-Wall

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.75	mg/Kg	1	2.00	88	70 - 130
4-Bromofluorobenzene (4-BFB)			2.03	mg/Kg	1	2.00	102	70 - 130

Sample: 389400 - W-Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120238	Date Analyzed:	2015-03-24	Analyzed By:	EM
Prep Batch:	101731	Sample Preparation:	2015-03-24	Prepared By:	EM

continued ...

sample 389400 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**766**	mg/Kg	5	4.00

Sample: 389400 - W-Wall

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120250	Date Analyzed:	2015-03-25	Analyzed By:	SC
Prep Batch:	101727	Sample Preparation:	2015-03-24	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	U	1	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			121	mg/Kg	1	100	121	70 - 130

Sample: 389400 - W-Wall

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**4.17**	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.83	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 389401 - RP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120317	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.179**	mg/Kg	5	0.0200
Toluene		1	**4.35**	mg/Kg	5	0.0200
Ethylbenzene		1	**11.6**	mg/Kg	5	0.0200
Xylene		1	**31.8**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			9.06	mg/Kg	5	10.0	91	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	24.6	mg/Kg	5	10.0	246	70 - 130

Sample: 389401 - RP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120238	Date Analyzed:	2015-03-24	Analyzed By:	EM
Prep Batch:	101731	Sample Preparation:	2015-03-24	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**478**	mg/Kg	5	4.00

Sample: 389401 - RP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120250	Date Analyzed:	2015-03-25	Analyzed By:	SC
Prep Batch:	101727	Sample Preparation:	2015-03-24	Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO		1	**2730**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr	201	mg/Kg	1	100	201	70 - 130

Sample: 389401 - RP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO		1	**1720**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			37.5	mg/Kg	20	40.0	94	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	80.5	mg/Kg	20	40.0	201	70 - 130

Sample: 389402 - SP

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	120368	Date Analyzed:	2015-03-30	Analyzed By:	AK
Prep Batch:	101813	Sample Preparation:	2015-03-27	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		1	**0.155**	mg/Kg	5	0.0200
Toluene		1	**1.86**	mg/Kg	5	0.0200
Ethylbenzene		1	**0.300**	mg/Kg	5	0.0200
Xylene		1	**9.20**	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			8.52	mg/Kg	5	10.0	85	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr	14.0	mg/Kg	5	10.0	140	70 - 130

Sample: 389402 - SP

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	120302	Date Analyzed:	2015-03-26	Analyzed By:	EM
Prep Batch:	101782	Sample Preparation:	2015-03-26	Prepared By:	EM

continued ...

sample 389402 continued . . .

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**288**	mg/Kg	5	4.00

Sample: 389402 - SP

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	120250	Date Analyzed:	2015-03-25	Analyzed By:	SC
Prep Batch:	101727	Sample Preparation:	2015-03-24	Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO		1	**1800**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		185	mg/Kg	1	100	185	70 - 130

Sample: 389402 - SP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	120318	Date Analyzed:	2015-03-27	Analyzed By:	AK
Prep Batch:	101767	Sample Preparation:	2015-03-26	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1	**960**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			36.2	mg/Kg	20	40.0	90	70 - 130
4-Bromofluorobenzene (4-BFB)			59.1	mg/Kg	20	40.0	148	70 - 130

Method Blanks

Method Blank (1) QC Batch: 120238

QC Batch:	120238	Date Analyzed:	2015-03-24	Analyzed By:	EM
Prep Batch:	101731	QC Preparation:	2015-03-24	Prepared By:	EM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 120250

QC Batch:	120250	Date Analyzed:	2015-03-25	Analyzed By:	SC
Prep Batch:	101727	QC Preparation:	2015-03-24	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane Qsr	Qsr		132	mg/Kg	1	100	132	70 - 130

Method Blank (1) QC Batch: 120302

QC Batch:	120302	Date Analyzed:	2015-03-26	Analyzed By:	EM
Prep Batch:	101782	QC Preparation:	2015-03-26	Prepared By:	EM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 120317

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00533	mg/Kg	0.02
Toluene		1	<0.00645	mg/Kg	0.02
Ethylbenzene		1	<0.0116	mg/Kg	0.02
Xylene		1	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.01	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-BFB)			1.95	mg/Kg	1	2.00	98	70 - 130

Method Blank (1) QC Batch: 120318

QC Batch: 120318 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.96	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.84	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 120368

QC Batch: 120368 | Date Analyzed: 2015-03-30 | Analyzed By: AK
Prep Batch: 101813 | QC Preparation: 2015-03-27 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00533	mg/Kg	0.02
Toluene		1	<0.00645	mg/Kg	0.02
Ethylbenzene		1	<0.0116	mg/Kg	0.02

continued ...

method blank continued ...

Parameter	Flag	Cert	MDL Result	Units	RL
Xylene		1	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.73	mg/Kg	1	2.00	86	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 120238 | Date Analyzed: 2015-03-24 | Analyzed By: EM
Prep Batch: 101731 | QC Preparation: 2015-03-24 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2490	mg/Kg	5	2500	<19.2	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2680	mg/Kg	5	2500	<19.2	107	85 - 115	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 120250 | Date Analyzed: 2015-03-25 | Analyzed By: SC
Prep Batch: 101727 | QC Preparation: 2015-03-24 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	272	mg/Kg	1	250	<7.41	109	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	289	mg/Kg	1	250	<7.41	116	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	123	122	mg/Kg	1	100	123	122	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120302 | Date Analyzed: 2015-03-26 | Analyzed By: EM
Prep Batch: 101782 | QC Preparation: 2015-03-26 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2500	mg/Kg	5	2500	<19.2	100	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2400	mg/Kg	5	2500	<19.2	96	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	2.03	mg/Kg	1	2.00	<0.00533	102	70 - 130
Toluene		1	1.97	mg/Kg	1	2.00	<0.00645	98	70 - 130
Ethylbenzene		1	1.97	mg/Kg	1	2.00	<0.0116	98	70 - 130
Xylene		1	6.05	mg/Kg	1	6.00	<0.00874	101	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.97	mg/Kg	1	2.00	<0.00533	98	70 - 130	3	20
Toluene		1	1.91	mg/Kg	1	2.00	<0.00645	96	70 - 130	3	20
Ethylbenzene		1	1.91	mg/Kg	1	2.00	<0.0116	96	70 - 130	3	20
Xylene		1	5.74	mg/Kg	1	6.00	<0.00874	96	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.80	1.86	mg/Kg	1	2.00	90	93	70 - 130
4-Bromofluorobenzene (4-BFB)	1.96	1.94	mg/Kg	1	2.00	98	97	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120318 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	23.8	mg/Kg	1	20.0	<2.32	119	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	21.0	mg/Kg	1	20.0	<2.32	105	70 - 130	12	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.93	1.92	mg/Kg	1	2.00	96	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.90	1.82	mg/Kg	1	2.00	95	91	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 120368 | Date Analyzed: 2015-03-30 | Analyzed By: AK
Prep Batch: 101813 | QC Preparation: 2015-03-27 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.79	mg/Kg	1	2.00	<0.00533	90	70 - 130
Toluene		1	1.76	mg/Kg	1	2.00	<0.00645	88	70 - 130
Ethylbenzene		1	1.73	mg/Kg	1	2.00	<0.0116	86	70 - 130
Xylene		1	5.28	mg/Kg	1	6.00	<0.00874	88	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.82	mg/Kg	1	2.00	<0.00533	91	70 - 130	2	20
Toluene		1	1.79	mg/Kg	1	2.00	<0.00645	90	70 - 130	2	20
Ethylbenzene		1	1.78	mg/Kg	1	2.00	<0.0116	89	70 - 130	3	20
Xylene		1	5.41	mg/Kg	1	6.00	<0.00874	90	70 - 130	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

control spikes continued ...

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.66	1.70	mg/Kg	1	2.00	83	85	70 - 130
4-Bromofluorobenzene (4-BFB)	1.91	1.92	mg/Kg	1	2.00	96	96	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 389388

QC Batch: 120238 | Date Analyzed: 2015-03-24 | Analyzed By: EM
Prep Batch: 101731 | QC Preparation: 2015-03-24 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2680	mg/Kg	5	2500	<19.2	107	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2780	mg/Kg	5	2500	<19.2	111	78.9 - 121	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (xMS-1) Spiked Sample: 389384

QC Batch: 120250 | Date Analyzed: 2015-03-25 | Analyzed By: SC
Prep Batch: 101727 | QC Preparation: 2015-03-24 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	253	mg/Kg	1	250	<7.41	101	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	238	mg/Kg	1	250	<7.41	95	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	114	105	mg/Kg	1	100	114	105	70 - 130

Matrix Spike (MS-1) Spiked Sample: 389402

QC Batch: 120302 | Date Analyzed: 2015-03-26 | Analyzed By: EM
Prep Batch: 101782 | QC Preparation: 2015-03-26 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2600	mg/Kg	5	2500	<19.2	104	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	5	2500	<19.2	104	78.9 - 121	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 389397

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.54	mg/Kg	1	2.00	<0.00533	77	70 - 130
Toluene		1	1.55	mg/Kg	1	2.00	<0.00645	78	70 - 130
Ethylbenzene		1	1.66	mg/Kg	1	2.00	<0.0116	83	70 - 130
Xylene		1	5.02	mg/Kg	1	6.00	<0.00874	84	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.63	mg/Kg	1	2.00	<0.00533	82	70 - 130	6	20
Toluene		1	1.66	mg/Kg	1	2.00	<0.00645	83	70 - 130	7	20
Ethylbenzene		1	1.78	mg/Kg	1	2.00	<0.0116	89	70 - 130	7	20
Xylene		1	5.30	mg/Kg	1	6.00	<0.00874	88	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.71	1.68	mg/Kg	1	2	86	84	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	1.97	mg/Kg	1	2	99	98	70 - 130

Matrix Spike (MS-1) Spiked Sample: 389397

QC Batch: 120318 | Date Analyzed: 2015-03-27 | Analyzed By: AK
Prep Batch: 101767 | QC Preparation: 2015-03-26 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	16.8	mg/Kg	1	20.0	<2.32	84	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.3	mg/Kg	1	20.0	<2.32	86	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.82	1.84	mg/Kg	1	2	91	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.99	2.04	mg/Kg	1	2	100	102	70 - 130

Matrix Spike (MS-1) Spiked Sample: 389422

QC Batch: 120368 | Date Analyzed: 2015-03-30 | Analyzed By: AK
Prep Batch: 101813 | QC Preparation: 2015-03-27 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1	1.67	mg/Kg	1	2.00	<0.00533	84	70 - 130
Toluene		1	1.69	mg/Kg	1	2.00	<0.00645	84	70 - 130
Ethylbenzene		1	1.77	mg/Kg	1	2.00	<0.0116	88	70 - 130
Xylene		1	5.37	mg/Kg	1	6.00	<0.00874	90	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	1.57	mg/Kg	1	2.00	<0.00533	78	70 - 130	6	20
Toluene		1	1.59	mg/Kg	1	2.00	<0.00645	80	70 - 130	6	20
Ethylbenzene		1	1.67	mg/Kg	1	2.00	<0.0116	84	70 - 130	6	20
Xylene		1	5.06	mg/Kg	1	6.00	<0.00874	84	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.69	1.64	mg/Kg	1	2	84	82	70 - 130
4-Bromofluorobenzene (4-BFB)	1.95	1.92	mg/Kg	1	2	98	96	70 - 130

Calibration Standards

Standard (ICV-1)

QC Batch: 120238 | Date Analyzed: 2015-03-24 | Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2015-03-24

Standard (CCV-1)

QC Batch: 120238 | Date Analyzed: 2015-03-24 | Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2015-03-24

Standard (CCV-2)

QC Batch: 120250 | Date Analyzed: 2015-03-25 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	287	115	80 - 120	2015-03-25

Standard (CCV-3)

QC Batch: 120250 | Date Analyzed: 2015-03-25 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	285	114	80 - 120	2015-03-25

Standard (ICV-1)

QC Batch: 120302 | Date Analyzed: 2015-03-26 | Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-26

Standard (CCV-1)

QC Batch: 120302 | Date Analyzed: 2015-03-26 | Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-03-26

Standard (CCV-1)

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.104	104	80 - 120	2015-03-27
Toluene		1	mg/kg	0.100	0.101	101	80 - 120	2015-03-27
Ethylbenzene		1	mg/kg	0.100	0.102	102	80 - 120	2015-03-27
Xylene		1	mg/kg	0.300	0.308	103	80 - 120	2015-03-27

Standard (CCV-2)

QC Batch: 120317 | Date Analyzed: 2015-03-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.100	100	80 - 120	2015-03-27
Toluene		1	mg/kg	0.100	0.0969	97	80 - 120	2015-03-27
Ethylbenzene		1	mg/kg	0.100	0.0941	94	80 - 120	2015-03-27
Xylene		1	mg/kg	0.300	0.284	95	80 - 120	2015-03-27

Standard (CCV-1)

QC Batch: 120318 | Date Analyzed: 2015-03-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.20	120	80 - 120	2015-03-27

Standard (CCV-2)

QC Batch: 120318 | Date Analyzed: 2015-03-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	1.04	104	80 - 120	2015-03-27

Standard (CCV-2)

QC Batch: 120368 | Date Analyzed: 2015-03-30 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0976	98	80 - 120	2015-03-30
Toluene		1	mg/kg	0.100	0.0936	94	80 - 120	2015-03-30
Ethylbenzene		1	mg/kg	0.100	0.0897	90	80 - 120	2015-03-30
Xylene		1	mg/kg	0.300	0.272	91	80 - 120	2015-03-30

Standard (CCV-3)

QC Batch: 120368 | Date Analyzed: 2015-03-30 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	0.100	0.0985	98	80 - 120	2015-03-30
Toluene		1	mg/kg	0.100	0.0941	94	80 - 120	2015-03-30
Ethylbenzene		1	mg/kg	0.100	0.0949	95	80 - 120	2015-03-30
Xylene		1	mg/kg	0.300	0.278	93	80 - 120	2015-03-30

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-14-8	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

15032408

CHAIN OF CUSTODY RECORD

APEX

Office Location 505 N Big Spring St Midland, Tx

Project Manager Karalanne Toby

Sampler's Name Claudia Corrales

Sampler's Signature

Laboratory: Trace Analysis

Address: 5002 Basin

Contact:

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 3.0

1 | 2 | 3 | 4 | 5

Page 1 of 1

Proj. No. 725071502 9.001

Project Name 1002 Line Release -2

No/Type of Containers 6

ANALYSIS REQUESTED: BTEX 8021 B; TPH [illegible] DRO/GRO; Chlorides

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Lab Sample ID (Lab Use Only)
S	3/23/15	14:02		X	N-wall		2½'				X		389397
		14:04			E-wall		2½'						398
		14:06			S-wall		2½'						399
		14:08			W-wall		2½'						400
		14:10			RP		3'						401
		14:12	X		SP								402

CC 3/23/15

Turn around time ☑ Normal ☐ 25% Rush ☐ 50% Rush ☐ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	3/24/15	9:17		3.24.15	9:17
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other _____

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

Karolanne Toby
APEX/Titan
2351 W. Northwest Hwy.
Suite 3321
Dallas, Tx, 75220

Report Date: April 28, 2015

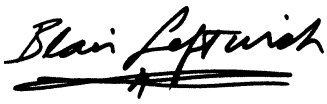
Work Order: 15042401

Project Name: 1002 Line Release-2
Project Number: 7250715029.001

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
391653	N Wall RE	soil	2015-04-23	12:00	2015-04-24
391654	E Wall RE	soil	2015-04-23	12:15	2015-04-24
391655	S Wall RE	soil	2015-04-23	12:30	2015-04-24
391656	RP RE	soil	2015-04-23	15:00	2015-04-24

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project 1002 Line Release-2 were received by TraceAnalysis, Inc. on 2015-04-24 and assigned to work order 15042401. Samples for work order 15042401 were received intact at a temperature of 5.5 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	102472	2015-04-28 at 10:25	121104	2015-04-28 at 11:16
TPH DRO - NEW	S 8015 D	102427	2015-04-24 at 18:28	121105	2015-04-28 at 11:19
TPH GRO	S 8015 D	102424	2015-04-24 at 13:00	121048	2015-04-27 at 07:51

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15042401 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 391653 - N Wall RE

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	121104	Date Analyzed:	2015-04-28	Analyzed By:	EM
Prep Batch:	102472	Sample Preparation:	2015-04-28	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1080**	mg/Kg	5	4.00

Sample: 391654 - E Wall RE

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	121104	Date Analyzed:	2015-04-28	Analyzed By:	EM
Prep Batch:	102472	Sample Preparation:	2015-04-28	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 391655 - S Wall RE

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	121104	Date Analyzed:	2015-04-28	Analyzed By:	EM
Prep Batch:	102472	Sample Preparation:	2015-04-28	Prepared By:	EM

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 391655 - S Wall RE

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	121105	Date Analyzed:	2015-04-28	Analyzed By:	SC
Prep Batch:	102427	Sample Preparation:	2015-04-24	Prepared By:	SC

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Qs,U	1	<50.0		mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			89.0	mg/Kg	1	100	89	70 - 130

Sample: 391655 - S Wall RE

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	121048	Date Analyzed:	2015-04-27	Analyzed By:	AK
Prep Batch:	102424	Sample Preparation:	2015-04-24	Prepared By:	AK

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
GRO	U	1	<4.00		mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.78	mg/Kg	1	2.00	89	70 - 130
4-Bromofluorobenzene (4-BFB)			1.85	mg/Kg	1	2.00	92	70 - 130

Sample: 391656 - RP RE

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	121105	Date Analyzed:	2015-04-28	Analyzed By:	SC
Prep Batch:	102427	Sample Preparation:	2015-04-24	Prepared By:	SC

Parameter	Flag	Cert	Result	RL	Units	Dilution	RL
DRO	Je,Qs	1	**2940**		mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		164	mg/Kg	1	100	164	70 - 130

Sample: 391656 - RP RE

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	121048	Date Analyzed:	2015-04-27	Analyzed By:	AK
Prep Batch:	102424	Sample Preparation:	2015-04-24	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	Je	1	**8440**	mg/Kg	50	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				84.3	mg/Kg	50	100	84	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		180	mg/Kg	50	100	180	70 - 130

Method Blanks

Method Blank (1) QC Batch: 121048

QC Batch: 121048 | Date Analyzed: 2015-04-27 | Analyzed By: AK
Prep Batch: 102424 | QC Preparation: 2015-04-24 | Prepared By: AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.83	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 121104

QC Batch: 121104 | Date Analyzed: 2015-04-28 | Analyzed By: EM
Prep Batch: 102472 | QC Preparation: 2015-04-28 | Prepared By: EM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 121105

QC Batch: 121105 | Date Analyzed: 2015-04-28 | Analyzed By: SC
Prep Batch: 102427 | QC Preparation: 2015-04-24 | Prepared By: SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			102	mg/Kg	1	100	102	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 121048 | Date Analyzed: 2015-04-27 | Analyzed By: AK
Prep Batch: 102424 | QC Preparation: 2015-04-24 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.1	mg/Kg	1	20.0	<2.32	76	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.0	mg/Kg	1	20.0	<2.32	75	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.85	1.83	mg/Kg	1	2.00	92	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.99	1.94	mg/Kg	1	2.00	100	97	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 121104 | Date Analyzed: 2015-04-28 | Analyzed By: EM
Prep Batch: 102472 | QC Preparation: 2015-04-28 | Prepared By: EM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2260	mg/Kg	5	2500	<19.2	90	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2060	mg/Kg	5	2500	<19.2	82	85 - 115	9	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 121105 | Date Analyzed: 2015-04-28 | Analyzed By: SC
Prep Batch: 102427 | QC Preparation: 2015-04-24 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	209	mg/Kg	1	250	<7.41	84	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	206	mg/Kg	1	250	<7.41	82	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	101	100	mg/Kg	1	100	101	100	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 391655

QC Batch: 121048 | Date Analyzed: 2015-04-27 | Analyzed By: AK
Prep Batch: 102424 | QC Preparation: 2015-04-24 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	13.5	mg/Kg	1	20.0	<2.32	68	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	14.2	mg/Kg	1	20.0	<2.32	71	70 - 130	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.83	1.79	mg/Kg	1	2	92	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.98	1.98	mg/Kg	1	2	99	99	70 - 130

Matrix Spike (MS-1) Spiked Sample: 391859

QC Batch: 121104 | Date Analyzed: 2015-04-28 | Analyzed By: EM
Prep Batch: 102472 | QC Preparation: 2015-04-28 | Prepared By: EM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2350	mg/Kg	5	2500	<19.2	94	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2350	mg/Kg	5	2500	<19.2	94	78.9 - 121	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (xMS-1) Spiked Sample: 391676

QC Batch: 121105 | Date Analyzed: 2015-04-28 | Analyzed By: SC
Prep Batch: 102427 | QC Preparation: 2015-04-24 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	198	mg/Kg	1	250	8.64	76	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qs	Qs 1	169	mg/Kg	1	250	8.64	64	70 - 130	16	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	69.7	73.7	mg/Kg	1	100	70	74	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 121048 | Date Analyzed: 2015-04-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.945	94	80 - 120	2015-04-27

Standard (CCV-2)

QC Batch: 121048 | Date Analyzed: 2015-04-27 | Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	1.00	0.875	88	80 - 120	2015-04-27

Standard (ICV-1)

QC Batch: 121104 | Date Analyzed: 2015-04-28 | Analyzed By: EM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2015-04-28

Standard (CCV-1)

QC Batch: 121104 | Date Analyzed: 2015-04-28 | Analyzed By: EM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2015-04-28

Standard (CCV-1)

QC Batch: 121105 | Date Analyzed: 2015-04-28 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	220	88	80 - 120	2015-04-28

Standard (CCV-2)

QC Batch: 121105 | Date Analyzed: 2015-04-28 | Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	211	84	80 - 120	2015-04-28

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-14-8	Midland

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

15042401

CHAIN OF CUSTODY RECORD

APEX

Office Location Midland TX

Project Manager Kewalanna Tolby

Laboratory: Trace

Address: Midland TX

Contact:

Phone:

PO/SO #:

Lab use only
Due Date:

Temp. of coolers when received (C°): 5.6

1	2	3	4	5

Page 1 of 1

Sampler's Name: Thomas Franklin

Sampler's Signature:

Proj. No.: 725071502 9 001

Project Name: Eddy Co NM Enterprise - 1002 Line Release - 2

No/Type of Containers: 4 - Glass

ANALYSIS REQUESTED: Chloride; TPH 8015 Mod

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	Chloride	TPH 8015 Mod	Lab Sample ID (Lab Use Only)
S	4/23/2015	1200		X	N Wall RE	2'	3'				X	X	X		391653
↓	↓	1215		↓	E Wall RE	2'	3'				↓	↓	X		654
		1230			S Wall RE	2'	3'						X	X	655
		1500			RP RE		6'							X	656

NFE TKF 4-24-15

Turn around time ❑ Normal ❑ 25% Rush ❑ 50% Rush ❑ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
	4-24-15	822		4/24/15	8:22
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972•242•7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

(Corrected Report)

Karolanne Toby
APEX/Titan
2351 W. Northwest Hwy.
Suite 3321
Dallas, Tx, 75220

Report Date: July 24, 2015

Work Order: 15062636

Project Name: 1002 #2 (Enterprise)
Project Number: 7250715029

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

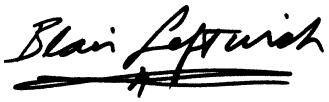
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
396939	N Wall	soil	2015-06-26	13:00	2015-06-26
396940	W Wall	soil	2015-06-26	13:00	2015-06-26
396941	RP	soil	2015-06-26	13:00	2015-06-26
396942	STP 1	soil	2015-06-26	13:30	2015-06-26
396943	STP 2	soil	2015-06-26	13:30	2015-06-26

Report Corrections (Work Order 15062636)

- 7/24/15: Added TPH DRO and TPH GRO to all samples per client.

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.



Dr. Blair Leftwich, Director
James Taylor, Assistant Director
Brian Pellam, Operations Manager

Report Contents

Case Narrative

Samples for project 1002 #2 (Enterprise) were received by TraceAnalysis, Inc. on 2015-06-26 and assigned to work order 15062636. Samples for work order 15062636 were received intact at a temperature of 13.4 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	103816	2015-06-29 at 14:50	122774	2015-07-01 at 08:01
Chloride (Titration)	SM 4500-Cl B	103853	2015-07-01 at 08:10	122781	2015-07-01 at 09:10
TPH DRO	S 8015 D	104334	2015-06-29 at 18:15	123383	2015-07-02 at 12:00
TPH - Extended Ranges	TX1005	103862	2015-06-29 at 18:15	122821	2015-07-02 at 12:01
TPH GRO	S 8015 D	104236	2015-07-20 at 07:41	123264	2015-07-21 at 07:47

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15062636 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Analytical Report

Sample: 396939 - N Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122781	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103853	Sample Preparation:	2015-07-01	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 396940 - W Wall

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122781	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103853	Sample Preparation:	2015-07-01	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**94.0**	mg/Kg	5	4.00

Sample: 396941 - RP

Laboratory:	Midland				
Analysis:	TPH - Extended Ranges	Analytical Method:	TX1005	Prep Method:	N/A
QC Batch:	122821	Date Analyzed:	2015-07-02	Analyzed By:	SC
Prep Batch:	103862	Sample Preparation:		Prepared By:	SC

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
C6-C12	Qs		**1530**	mg/Kg	1	50.0
>C12-C28	Qr,Qs		**1580**	mg/Kg	1	50.0
>C28-C35			**148**	mg/Kg	1	50.0
Total TPH	Qs		**3260**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr		104	mg/Kg	1	50.0	208	70 - 130
n-Octane	Qsr	Qsr		108	mg/Kg	1	50.0	216	70 - 130
n-Tricosane	Qsr	Qsr		121	mg/Kg	1	50.0	242	70 - 130

Sample: 396941 - RP

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	123383	Date Analyzed:	2015-07-02	Analyzed By:	AK
Prep Batch:	104334	Sample Preparation:	2015-06-29	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,Qs	5	**1650**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr		108	mg/Kg	1	50.0	216	70 - 130

Sample: 396941 - RP

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	123264	Date Analyzed:	2015-07-21	Analyzed By:	AK
Prep Batch:	104236	Sample Preparation:	2015-07-20	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		5	**1480**	mg/Kg	20	4.00

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)				37.0	mg/Kg	20	40.0	92	70 - 130
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		59.7	mg/Kg	20	40.0	149	70 - 130

Sample: 396942 - STP 1

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122774	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103816	Sample Preparation:	2015-06-29	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	5	<0.0200	mg/Kg	1	0.0200
Toluene	U	5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	5	<0.0200	mg/Kg	1	0.0200
Xylene	U	5	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			2.00	mg/Kg	1	2.00	100	70 - 130

Sample: 396942 - STP 1

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122781	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103853	Sample Preparation:	2015-07-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 396942 - STP 1

Laboratory:	Midland				
Analysis:	TPH - Extended Ranges	Analytical Method:	TX1005	Prep Method:	N/A
QC Batch:	122821	Date Analyzed:	2015-07-02	Analyzed By:	SC
Prep Batch:	103862	Sample Preparation:		Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12	Qs,U		<50.0	mg/Kg	1	50.0
>C12-C28	Qr,Qs,U		<50.0	mg/Kg	1	50.0
>C28-C35	U		<50.0	mg/Kg	1	50.0
Total TPH	Qs		<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			45.6	mg/Kg	1	50.0	91	70 - 130
n-Octane			49.8	mg/Kg	1	50.0	100	70 - 130
n-Tricosane			47.9	mg/Kg	1	50.0	96	70 - 130

Sample: 396942 - STP 1

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	123383	Date Analyzed:	2015-07-02	Analyzed By:	AK
Prep Batch:	104334	Sample Preparation:	2015-06-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
DRO	Qr,Qs,U	5	<50.0	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			47.9	mg/Kg	1	50.0	96	70 - 130

Sample: 396942 - STP 1

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	123264	Date Analyzed:	2015-07-21	Analyzed By:	AK
Prep Batch:	104236	Sample Preparation:	2015-07-20	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
GRO	U	5	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.90	mg/Kg	1	2.00	95	70 - 130

Sample: 396943 - STP 2

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	122774	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103816	Sample Preparation:	2015-06-29	Prepared By:	AK

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Benzene		5	**1.57**	mg/Kg	1	0.0200
Toluene	Je	5	**10.8**	mg/Kg	1	0.0200
Ethylbenzene		5	**2.34**	mg/Kg	1	0.0200
Xylene	Je	5	**25.2**	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.49	mg/Kg	1	2.00	74	70 - 130
4-Bromofluorobenzene (4-BFB)			2.39	mg/Kg	1	2.00	120	70 - 130

Sample: 396943 - STP 2

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	122781	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103853	Sample Preparation:	2015-07-01	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**377**	mg/Kg	5	4.00

Sample: 396943 - STP 2

Laboratory:	Midland				
Analysis:	TPH - Extended Ranges	Analytical Method:	TX1005	Prep Method:	N/A
QC Batch:	122821	Date Analyzed:	2015-07-02	Analyzed By:	SC
Prep Batch:	103862	Sample Preparation:		Prepared By:	SC

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
C6-C12	Qs		**904**	mg/Kg	1	50.0
>C12-C28	Qr,Qs		**692**	mg/Kg	1	50.0
>C28-C35			**55.6**	mg/Kg	1	50.0
Total TPH	Qs		**1650**	mg/Kg	1	50.0

Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane	Qsr	Qsr		70.8	mg/Kg	1	50.0	142	70 - 130
n-Octane	Qsr	Qsr		89.3	mg/Kg	1	50.0	179	70 - 130
n-Tricosane	Qsr	Qsr		77.7	mg/Kg	1	25.0	311	70 - 130

Sample: 396943 - STP 2

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	123383	Date Analyzed:	2015-07-02	Analyzed By:	AK
Prep Batch:	104334	Sample Preparation:	2015-06-29	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	Qr,Qs	5	**767**	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane Qsr	Qsr		73.2	mg/Kg	1	50.0	146	70 - 130

Sample: 396943 - STP 2

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	123264	Date Analyzed:	2015-07-21	Analyzed By:	AK
Prep Batch:	104236	Sample Preparation:	2015-07-20	Prepared By:	AK

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		5	**482**	mg/Kg	20	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			39.3	mg/Kg	20	40.0	98	70 - 130
4-Bromofluorobenzene (4-BFB)			48.1	mg/Kg	20	40.0	120	70 - 130

Method Blanks

Method Blank (1) QC Batch: 122774

QC Batch:	122774	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103816	QC Preparation:	2015-06-29	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		5	<0.00533	mg/Kg	0.02
Toluene		5	<0.00645	mg/Kg	0.02
Ethylbenzene		5	<0.0116	mg/Kg	0.02
Xylene		5	<0.00874	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.82	mg/Kg	1	2.00	91	70 - 130

Method Blank (1) QC Batch: 122781

QC Batch:	122781	Date Analyzed:	2015-07-01	Analyzed By:	AK
Prep Batch:	103853	QC Preparation:	2015-07-01	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

Method Blank (1) QC Batch: 122821

QC Batch:	122821	Date Analyzed:	2015-07-02	Analyzed By:	SC
Prep Batch:	103862	QC Preparation:	2015-06-29	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	Units	RL
C6-C12			<5.66	mg/Kg	50
>C12-C28			<7.50	mg/Kg	50
>C28-C35			<7.50	mg/Kg	50
Total TPH			<5.66	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane			59.8	mg/Kg	1	50.0	120	70 - 130
n-Octane			58.3	mg/Kg	1	50.0	117	70 - 130
n-Tricosane			60.2	mg/Kg	1	50.0	120	70 - 130

Method Blank (1) QC Batch: 123264

QC Batch:	123264	Date Analyzed:	2015-07-21	Analyzed By:	AK
Prep Batch:	104236	QC Preparation:	2015-07-20	Prepared By:	AK

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		5	<2.32	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.85	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.62	mg/Kg	1	2.00	81	70 - 130

Method Blank (1) QC Batch: 123383

QC Batch:	123383	Date Analyzed:	2015-07-02	Analyzed By:	AK
Prep Batch:	104334	QC Preparation:	2015-06-29	Prepared By:	SC

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		5	<7.41	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			60.2	mg/Kg	1	50.0	120	70 - 130

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 122774 | Date Analyzed: 2015-07-01 | Analyzed By: AK
Prep Batch: 103816 | QC Preparation: 2015-06-29 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	1.80	mg/Kg	1	2.00	<0.00533	90	70 - 130
Toluene		5	1.81	mg/Kg	1	2.00	<0.00645	90	70 - 130
Ethylbenzene		5	1.86	mg/Kg	1	2.00	<0.0116	93	70 - 130
Xylene		5	5.63	mg/Kg	1	6.00	<0.00874	94	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		5	1.76	mg/Kg	1	2.00	<0.00533	88	70 - 130	2	20
Toluene		5	1.78	mg/Kg	1	2.00	<0.00645	89	70 - 130	2	20
Ethylbenzene		5	1.83	mg/Kg	1	2.00	<0.0116	92	70 - 130	2	20
Xylene		5	5.48	mg/Kg	1	6.00	<0.00874	91	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.89	1.86	mg/Kg	1	2.00	94	93	70 - 130
4-Bromofluorobenzene (4-BFB)	1.88	1.88	mg/Kg	1	2.00	94	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 122781 | Date Analyzed: 2015-07-01 | Analyzed By: AK
Prep Batch: 103853 | QC Preparation: 2015-07-01 | Prepared By: AK

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2450	mg/Kg	5	2500	<19.2	98	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued . . .

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2550	mg/Kg	5	2500	<19.2	102	85 - 115	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 122821 | Date Analyzed: 2015-07-02 | Analyzed By: SC
Prep Batch: 103862 | QC Preparation: 2015-06-29 | Prepared By: SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
C6-C12			216	mg/Kg	1	250	<5.66	86	75 - 125
>C12-C28			252	mg/Kg	1	250	<7.50	101	75 - 125
Total TPH			471	mg/Kg	1	500	<8.31	94	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
C6-C12			225	mg/Kg	1	250	<5.66	90	75 - 125	4	20
>C12-C28			220	mg/Kg	1	250	<7.50	88	75 - 125	14	20
Total TPH			448	mg/Kg	1	500	<8.31	90	75 - 125	5	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	58.2	57.9	mg/Kg	1	50.0	116	116	70 - 130
n-Octane	61.8	58.5	mg/Kg	1	50.0	124	117	70 - 130
n-Tricosane	62.8	61.6	mg/Kg	1	50.0	126	123	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 123264 | Date Analyzed: 2015-07-21 | Analyzed By: AK
Prep Batch: 104236 | QC Preparation: 2015-07-20 | Prepared By: AK

continued ...

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		[5]	14.2	mg/Kg	1	20.0	<2.32	71	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		[5]	14.1	mg/Kg	1	20.0	<2.32	70	70 - 130	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.92	1.87	mg/Kg	1	2.00	96	94	70 - 130
4-Bromofluorobenzene (4-BFB)	1.93	1.85	mg/Kg	1	2.00	96	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:	123383	Date Analyzed:	2015-07-02	Analyzed By:	AK
Prep Batch:	104334	QC Preparation:	2015-06-29	Prepared By:	SC

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		[5]	237	mg/Kg	1	250	<7.41	95	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		[5]	224	mg/Kg	1	250	<7.41	90	70 - 130	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Tricosane	62.8	61.6	mg/Kg	1	50.0	126	123	70 - 130

Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 396942

QC Batch: 122774 | Date Analyzed: 2015-07-01 | Analyzed By: AK
Prep Batch: 103816 | QC Preparation: 2015-06-29 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		5	1.60	mg/Kg	1	2.00	<0.00533	80	70 - 130
Toluene		5	1.69	mg/Kg	1	2.00	<0.00645	84	70 - 130
Ethylbenzene		5	1.81	mg/Kg	1	2.00	<0.0116	90	70 - 130
Xylene		5	5.45	mg/Kg	1	6.00	<0.00874	91	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		5	1.51	mg/Kg	1	2.00	<0.00533	76	70 - 130	6	20
Toluene		5	1.64	mg/Kg	1	2.00	<0.00645	82	70 - 130	3	20
Ethylbenzene		5	1.76	mg/Kg	1	2.00	<0.0116	88	70 - 130	3	20
Xylene		5	5.30	mg/Kg	1	6.00	<0.00874	88	70 - 130	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.78	1.92	mg/Kg	1	2	89	96	70 - 130
4-Bromofluorobenzene (4-BFB)	1.86	2.01	mg/Kg	1	2	93	100	70 - 130

Matrix Spike (MS-1) Spiked Sample: 396943

QC Batch: 122781 | Date Analyzed: 2015-07-01 | Analyzed By: AK
Prep Batch: 103853 | QC Preparation: 2015-07-01 | Prepared By: AK

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3020	mg/Kg	5	2500	377	106	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2740	mg/Kg	5	2500	377	94	78.9 - 121	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (xMS-1) Spiked Sample: 397055

QC Batch: 122821 | Date Analyzed: 2015-07-02 | Analyzed By: SC
Prep Batch: 103862 | QC Preparation: 2015-06-29 | Prepared By: SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
C6-C12			286	mg/Kg	1	250	<5.66	114	75 - 125
>C12-C28			1250	mg/Kg	1	250	1010	96	75 - 125
Total TPH			1740	mg/Kg	1	500	1280	92	75 - 125

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
C6-C12	Qs	Qs	319	mg/Kg	1	250	<5.66	128	75 - 125	11	20
>C12-C28	Qr,Qs	Qr,Qs	1680	mg/Kg	1	250	1010	268	75 - 125	29	20
Total TPH	Qs	Qs	2240	mg/Kg	1	500	1280	192	75 - 125	25	

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate			MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	Qsr	Qsr	75.2	110	mg/Kg	1	50	150	220	70 - 130
n-Octane			52.0	71.7	mg/Kg	1	50	104	143	70 - 130
n-Tricosane	Qsr	Qsr	95.8	138	mg/Kg	1	50	192	276	70 - 130

Matrix Spike (MS-1) Spiked Sample: 398916

QC Batch: 123264 | Date Analyzed: 2015-07-21 | Analyzed By: AK
Prep Batch: 104236 | QC Preparation: 2015-07-20 | Prepared By: AK

continued ...

matrix spikes continued ...

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		5	17.6	mg/Kg	1	20.0	<2.32	88	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		5	15.8	mg/Kg	1	20.0	<2.32	79	70 - 130	11	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.95	1.85	mg/Kg	1	2	98	92	70 - 130
4-Bromofluorobenzene (4-BFB)	1.85	1.94	mg/Kg	1	2	92	97	70 - 130

Matrix Spike (xMS-1) Spiked Sample: 397055

QC Batch:	123383	Date Analyzed:	2015-07-02	Analyzed By:	AK
Prep Batch:	104334	QC Preparation:	2015-06-29	Prepared By:	SC

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		5	1090	mg/Kg	1	250	844	98	70 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	Qr,Qs	Qr,Qs 5	1430	mg/Kg	1	250	844	234	70 - 130	27	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane Qsr Qsr	95.8	138	mg/Kg	1	50	192	276	70 - 130

Calibration Standards

Standard (CCV-1)

QC Batch: 122774 Date Analyzed: 2015-07-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		5	mg/kg	0.100	0.0860	86	80 - 120	2015-07-01
Toluene		5	mg/kg	0.100	0.0877	88	80 - 120	2015-07-01
Ethylbenzene		5	mg/kg	0.100	0.0904	90	80 - 120	2015-07-01
Xylene		5	mg/kg	0.300	0.272	91	80 - 120	2015-07-01

Standard (CCV-2)

QC Batch: 122774 Date Analyzed: 2015-07-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		5	mg/kg	0.100	0.0878	88	80 - 120	2015-07-01
Toluene		5	mg/kg	0.100	0.0899	90	80 - 120	2015-07-01
Ethylbenzene		5	mg/kg	0.100	0.0940	94	80 - 120	2015-07-01
Xylene		5	mg/kg	0.300	0.276	92	80 - 120	2015-07-01

Standard (ICV-1)

QC Batch: 122781 Date Analyzed: 2015-07-01 Analyzed By: AK

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-07-01

Standard (CCV-1)

QC Batch: 122781 Date Analyzed: 2015-07-01 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2015-07-01

Standard (CCV-1)

QC Batch: 122821 Date Analyzed: 2015-07-02 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
C6-C12			mg/Kg	250	220	88	75 - 125	2015-07-02
>C12-C28			mg/Kg	250	227	91	75 - 125	2015-07-02

Standard (CCV-2)

QC Batch: 122821 Date Analyzed: 2015-07-02 Analyzed By: SC

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
C6-C12			mg/Kg	250	210	84	75 - 125	2015-07-02
>C12-C28			mg/Kg	250	210	84	75 - 125	2015-07-02
>C28-C35			mg/Kg	0.00	4.28		75 - 125	2015-07-02

Standard (CCV-2)

QC Batch: 123264 Date Analyzed: 2015-07-21 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	0.977	98	80 - 120	2015-07-21

Standard (CCV-3)

QC Batch: 123264 Date Analyzed: 2015-07-21 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		5	mg/Kg	1.00	0.875	88	80 - 120	2015-07-21

Standard (CCV-1)

QC Batch: 123383 Date Analyzed: 2015-07-02 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	228	91	80 - 120	2015-07-02

Standard (CCV-2)

QC Batch: 123383 Date Analyzed: 2015-07-02 Analyzed By: AK

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		5	mg/Kg	250	213	85	80 - 120	2015-07-02

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	L-A-B	L2418	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	LELAP	LELAP-02003	Lubbock
4	NELAP	T104704219-15-11	Lubbock
5	NELAP	T104704392-14-8	Midland
6		2014-018	Lubbock

Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.

F	Description
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.
Please note, each attachment may consist of more than one page.

WO #: 15062636

CHAIN OF CUSTODY RECORD

APEX

Office Location: 505 N Big Spring St. Midland, TX 79701

Project Manager: Karolanne Toby

Laboratory: Trace Analysis

Address:

Contact:

Phone:

PO/SO #:

Lab use only

Due Date:

Temp. of coolers when received (C°): 7.4

1	2	3	4	5

Page ____ of ____

Sampler's Name: Jake Munsey

Sampler's Signature: [signature]

Proj. No.: 7250715029

Project Name: 1002 #2 (Enterprice)

No/Type of Containers: 5 4oz Jars

ANALYSIS REQUESTED

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	TPH EXT	Chlorides	BTEX 8021B	TPH GRO*	TPH DRO*				Lab Sample ID (Lab Use Only)
S	6-26-15	1300		✓	N wall	3'	3.2'				✓			✓							396939
S	↓	1300		✓	W wall	3'	3.2'				✓			✓							396940
S		1300		✓	RP	13'	13.5'				✓		✓			X (circled)	X (circled)				396941
S		1330	✓		STP 1						✓		✓	✓	✓	X (circled)	X (circled)				396942
S	↓	1330	✓		STP 2						✓		✓	✓	✓	X (circled)	X (circled)				396943

*] Added 7/20/15 per: Karolanne 4:00

*Client is aware per: Nalleley TPH GRO & TPH DRO will be ran out of Hold Time.

Turn around time ❑ Normal ❑ 25% Rush ❑ 50% Rush ☑ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
[signature]	6-26-15	1610	[signature]	6/26/15	16:10

NOTES:

Report Sent 7-2-15 RB

Matrix: WW - Wastewater, W - Water, S - Soil, SD - Solid, L - Liquid, A - Air Bag, C - Charcoal tube, SL - sludge, O - Oil

Container: VOA - 40 ml vial, A/G - Amber / Or Glass 1 Liter, 250 ml - Glass wide mouth, P/O - Plastic or other ____

Analytical Report 514404

for

APEX/Titan

Project Manager: Karolanne Toby

1002 Line Release

7250715029

31-AUG-15

Collected By: Client

12600 West I-20 East Odessa, Texas 79765

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD (L10-135)
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

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)

31-AUG-15

Project Manager: **Karolanne Toby**
APEX/Titan
505 N. Big Spring Ste. 301 A
Midland, TX 79701

Reference: XENCO Report No(s): **514404**
1002 Line Release
Project Address:

Karolanne Toby:

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) 514404. 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. 514404 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,

Julian Martinez
Project Manager

Sample Cross Reference 514404

APEX/Titan, Midland, TX

1002 Line Release

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
CS-1	S	08-27-15 13:25	- 19 ft	514404-001
STP-2-RE	S	08-27-15 13:45		514404-002

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-975723 BTEX by EPA 8021B

Lab Sample ID 514404-001 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Benzene, Ethylbenzene, Toluene, m_p-Xylenes recovered below QC limits in the Matrix Spike. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 514404-001, -002.

The Laboratory Control Sample for Toluene, Benzene, Ethylbenzene, m_p-Xylenes is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 514404

APEX/Titan, Midland, TX

Project Name: 1002 Line Release

Project Id: 7250715029
Contact: Karolanne Toby
Project Location:

Date Received in Lab: Thu Aug-27-15 04:47 pm
Report Date: 31-AUG-15
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	514404-001		514404-002					
	Field Id:	CS-1		STP-2-RE					
	Depth:	19 ft							
	Matrix:	SOIL		SOIL					
	Sampled:	Aug-27-15 13:25		Aug-27-15 13:45					
BTEX by EPA 8021B	***Extracted:***	Aug-27-15 18:00		Aug-27-15 18:00					
	Analyzed:	Aug-28-15 03:50		Aug-28-15 04:07					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Benzene		0.0274	0.00100	0.0153	0.00100				
Toluene		0.0762	0.00200	0.141	0.00200				
Ethylbenzene		0.0125	0.00100	0.0401	0.00100				
m_p-Xylenes		0.146	0.00200	0.468	0.00200				
o-Xylene		0.0380	0.00100	0.118	0.00100				
Total Xylenes		0.184	0.00100	0.586	0.00100				
Total BTEX		0.300	0.00100	0.782	0.00100				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Aug-27-15 16:50		Aug-27-15 16:50					
	Analyzed:	Aug-27-15 23:51		Aug-28-15 00:14					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		186	100	267	100				
TPH By SW8015B Mod	***Extracted:***	Aug-27-15 20:00		Aug-27-15 20:00					
	Analyzed:	Aug-28-15 23:03		Aug-29-15 10:14					
	Units/RL:	mg/kg	RL	mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons		15.6	15.0	276	15.0				
C10-C28 Diesel Range Hydrocarbons		ND	15.0	1050	15.0				
Total TPH		15.6	15.0	1330	15.0				

Julian Martinez
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

Form 2 - Surrogate Recoveries

Project Name: 1002 Line Release

Work Orders : 514404, 514404 **Project ID:** 7250715029

Lab Batch #: 975723 **Sample:** 514404-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/28/15 03:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0256	0.0300	85	80-120	
4-Bromofluorobenzene	0.0242	0.0300	81	80-120	

Lab Batch #: 975723 **Sample:** 514404-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/28/15 04:07

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0243	0.0300	81	80-120	
4-Bromofluorobenzene	0.0295	0.0300	98	80-120	

Lab Batch #: 975861 **Sample:** 514404-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/28/15 23:03

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	185	200	93	70-135	
o-Terphenyl	84.0	100	84	70-135	

Lab Batch #: 975861 **Sample:** 514404-002 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/15 10:14

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	86.2	100	86	70-135	
o-Terphenyl	41.6	50.0	83	70-135	

Lab Batch #: 975723 **Sample:** 697385-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/28/15 01:35

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0260	0.0300	87	80-120	
4-Bromofluorobenzene	0.0278	0.0300	93	80-120	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 1002 Line Release

Work Orders : 514404, 514404 **Project ID:** 7250715029

Lab Batch #: 975861 **Sample:** 697484-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/15 10:59

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	58.8	50.0	118	70-135	

Lab Batch #: 975723 **Sample:** 697385-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/28/15 07:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0330	0.0300	110	80-120	
4-Bromofluorobenzene	0.0348	0.0300	116	80-120	

Lab Batch #: 975861 **Sample:** 697484-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/15 11:21

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	100	110	70-135	
o-Terphenyl	50.0	50.0	100	70-135	

Lab Batch #: 975723 **Sample:** 697385-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/28/15 07:28

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0346	0.0300	115	80-120	

Lab Batch #: 975861 **Sample:** 697484-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 08/29/15 11:44

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	101	100	101	70-135	
o-Terphenyl	45.2	50.0	90	70-135	

* Surrogate outside of Laboratory QC limits

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

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

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

Form 2 - Surrogate Recoveries

Project Name: 1002 Line Release

Work Orders : 514404, 514404 **Project ID:** 7250715029

Lab Batch #: 975723 **Sample:** 514404-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/28/15 00:44

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0273	0.0300	91	80-120	
4-Bromofluorobenzene	0.0312	0.0300	104	80-120	

Lab Batch #: 975861 **Sample:** 514404-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/28/15 23:54

SURROGATE RECOVERY STUDY

TPH By SW8015B 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	40.2	50.0	80	70-135	

Lab Batch #: 975861 **Sample:** 514404-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 08/29/15 00:20

SURROGATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	97.8	100	98	70-135	
o-Terphenyl	40.0	50.0	80	70-135	

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

BS / BSD Recoveries

Project Name: 1002 Line Release

Work Order #: 514404, 514404 **Project ID:** 7250715029

Analyst: PJB **Date Prepared:** 08/27/2015 **Date Analyzed:** 08/28/2015

Lab Batch ID: 975723 **Sample:** 697385-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00100	0.100	0.0801	80	0.100	0.0801	80	0	70-130	35	
Toluene	<0.00200	0.100	0.0868	87	0.100	0.0867	87	0	70-130	35	
Ethylbenzene	<0.00100	0.100	0.0986	99	0.100	0.100	100	1	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.203	102	0.200	0.204	102	0	70-135	35	
o-Xylene	<0.00100	0.100	0.102	102	0.100	0.104	104	2	71-133	35	

Analyst: JUM **Date Prepared:** 08/26/2015 **Date Analyzed:** 08/27/2015

Lab Batch ID: 975659 **Sample:** 697223-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<2.00	50.0	50.3	101	50.0	54.2	108	7	90-110	20	

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

BS / BSD Recoveries

Project Name: 1002 Line Release

Work Order #: 514404, 514404 **Project ID:** 7250715029

Analyst: PJB **Date Prepared:** 08/27/2015 **Date Analyzed:** 08/29/2015

Lab Batch ID: 975861 **Sample:** 697484-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	910	91	1000	879	88	3	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	798	80	1000	722	72	10	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: 1002 Line Release

Work Order #: 514404

Lab Batch #: 975723 **Project ID:** 7250715029

Date Analyzed: 08/28/2015 **Date Prepared:** 08/27/2015 **Analyst:** PJB

QC- Sample ID: 514404-001 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Benzene	0.0274	0.100	0.0655	38	70-130	X
Toluene	0.0762	0.100	0.0942	18	70-130	X
Ethylbenzene	0.0125	0.100	0.0807	68	71-129	X
m_p-Xylenes	0.146	0.200	0.265	60	70-135	X
o-Xylene	0.0380	0.100	0.113	75	71-133	

Lab Batch #: 975659

Date Analyzed: 08/27/2015 **Date Prepared:** 08/26/2015 **Analyst:** JUM

QC- Sample ID: 513742-013 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Chloride	1780	2660	4840	115	80-120	

Lab Batch #: 975659

Date Analyzed: 08/28/2015 **Date Prepared:** 08/26/2015 **Analyst:** JUM

QC- Sample ID: 514317-005 S **Batch #:** 1 **Matrix:** Soil

Reporting Units: mg/kg

Inorganic Anions by EPA 300 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	%R [D]	Control Limits %R	Flag
	MATRIX / MATRIX SPIKE RECOVERY STUDY					
Chloride	86.5	500	631	109	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: 1002 Line Release

Work Order # : 514404 **Project ID:** 7250715029

Lab Batch ID: 975861 **QC- Sample ID:** 514404-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 08/28/2015 **Date Prepared:** 08/27/2015 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B 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-C10 Gasoline Range Hydrocarbons	15.6	1000	858	84	1000	838	82	2	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	739	74	1000	788	79	6	70-135	35	

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

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

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

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

CHAIN OF CUSTODY RECORD

APEX

Office Location: Midland, TX

Project Manager: Karolanne Toby

Laboratory: XENCO

Address: 1211 W Florida Midland, TX

Contact:

Phone:

PO/SO #:

Sampler's Name: Georgiana McSwane

Sampler's Signature: Georgiana McSwane

Proj. No.: 2250715029

Project Name: 1002 Line Release

No/Type of Containers: 2

Lab use only
Due Date: 514404
Temp. of coolers when received (C°): -.2°

1	2	3	4	5

Page 1 of 1

Matrix	Date	Time	Comp	Grab	Identifying Marks of Sample(s)	Start Depth	End Depth	VOA	A/G 1 Lt.	250 ml	Glass Jar	P/O	BTEX 8021B	Chloride	TPH DRO/GRO	Lab Sample ID (Lab Use Only)
S	8/27/15	13:25		✓	CS-1		19'				✓				✓	
S	8/27/15	13:45	✓		STP-2-RE		—				✓		✓	✓	✓	

N.F.E. 8/27/2015

Turn around time ☐ Normal ☐ 25% Rush ☐ 50% Rush ☑ 100% Rush

Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Georgiana McSwane	8/27/15	16:47		8/27/15	16:47
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:
Relinquished by (Signature)	Date:	Time:	Received by: (Signature)	Date:	Time:

NOTES:

* 24 hour rush

* NM samples

Matrix: WW - Wastewater; W - Water; S - Soil; SD - Solid; L - Liquid; A - Air Bag; C - Charcoal tube; SL - sludge; O - Oil

Container: VOA - 40 ml vial; A/G - Amber / Or Glass 1 Liter; 250 ml - Glass wide mouth; P/O - Plastic or other

XENCO Laboratories

Prelogin/Nonconformance Report- Sample Log-In

Client: APEX/Titan

Date/ Time Received: 08/27/2015 04:47:00 PM

Work Order #: 514404

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used :

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	-.2
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seals intact on shipping container/ cooler?	**N/A**
#5 Custody Seals intact on sample bottles?	**N/A**
#6 *Custody Seals Signed and dated?	**N/A**
#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)?	**No**
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#22 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

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

Analyst:

PH Device/Lot#:

Checklist completed by: Caroline Dugan Date: 08/27/2015

Checklist reviewed by: Kelsey Brooks Date: 08/28/2015

APPENDIX E

NMOCD 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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company *Enterprise Field Services LLC*	Contact *Dina Babinski*
PO Box 4324, Houston, TX 77210	Telephone No. *210-528-3824*
Facility Name *Pipeline ROW, 1002 Gathering Lateral*	Facility Type: *Gas Gathering Pipeline*

Surface Owner *Private Owner*	Mineral Owner *NA - Pipeline*	Lease No. *NA*

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	*14*	*24S*	*28E*	*480*	*South*	*55*	*East*	*Eddy*

Latitude: *N 32.22287* **Longitude:** *W -104.05838*

NATURE OF RELEASE

Type of Release *Natural Gas, Pipeline Liquids*	Volume of Release: *251 MCF, 1 BBL Liquids*	Volume Recovered: *N/A*
Source of Release *Pipeline Leak.*	Date and Hour of Occurrence *03/11/2015 @ 19:10 MDT*	Date and Hour of Discovery *03/11/2015 @ 19:10 MDT*
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Pipeline leak was detected by an Enterprise technician. Pipeline segment was isolated and blown down, and leaking portion was repaired.

Describe Area Affected and Cleanup Action Taken.*

Liquid spill occurred within pipeline ROW. Cleanup activities are currently being performed and additional sampling has been requested to confirm cleanup is satisfactory.

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: *Jon E. Fields*	OIL CONSERVATION DIVISION	
Printed Name: *Jon E. Fields*	Approved by District Supervisor:	
Title: *Director, Field Environmental*	Approval Date:	Expiration Date:
E-mail Address: *jefields@eprod.com*	Conditions of Approval:	Attached ☐
Date: *3-16-2015* Phone: *713-381-6684*		

* Attach Additional Sheets If Necessary

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company *Enterprise Field Services LLC*	Contact *Dina Ferguson*
PO Box 4324, Houston, TX 77210	Telephone No. *210-528-3824*
Facility Name *Pipeline ROW, 1002 Gathering Lateral*	Facility Type: *Gas Gathering Pipeline*

Surface Owner *Private Owner*	Mineral Owner *NA - Pipeline*	Lease No. *NA*

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	*14*	*24S*	*28E*	*480*	*South*	*55*	*East*	*Eddy*

Latitude: *N 32.22287* **Longitude:** *W -104.05838*

NATURE OF RELEASE

Type of Release *Natural Gas, Pipeline Liquids*	Volume of Release: *251 MCF, 7 BBL Liquids (updated)*	Volume Recovered: *N/A*
Source of Release *Pipeline Leak.*	Date and Hour of Occurrence *03/11/2015 @ 19:10 MDT*	Date and Hour of Discovery *03/11/2015 @ 19:10 MDT*
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Pipeline leak was detected by an Enterprise technician. Pipeline segment was isolated and blown down, and leaking portion was repaired.

Describe Area Affected and Cleanup Action Taken.*

Liquid spill occurred within pipeline ROW. Operations personnel originally estimated approximately 1 bbl pipeline liquids spilled to the ground within pipeline right-of-way. After further investigation and excavation, it was determined that the liquid spill volume is approximately 7 bbl pipeline liquids. Cleanup activities are currently being performed and additional sampling has been requested to confirm cleanup is satisfactory.

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: Jon Fields	OIL CONSERVATION DIVISION	
Printed Name: *Jon E. Fields*	Approved by District Supervisor:	
Title: *Director, Field Environmental*	Approval Date:	Expiration Date:
E-mail Address: *jefields@eprod.com*	Conditions of Approval:	Attached ☐
Date: *10-29-15* Phone: *713-381-6684*		

* Attach Additional Sheets If Necessary

APPENDIX F

Waste Disposal Manifests

1002 CLEAN UP

LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

NON-HAZARDOUS WASTE MANIFEST NO 110646 | 1. PAGE ___ OF ___ | 2. TRAILER NO. 14

GENERATOR

3. COMPANY NAME	4. ADDRESS	5. PICK-UP DATE
PHONE NO.	CITY STATE ZIP	6. TNRCC I.D. NO.

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
a.					
b.					
c.					
d.					

12. COMMENTS OR SPECIAL INSTRUCTIONS:

13. WASTE PROFILE NO.

14. **IN CASE OF EMERGENCY OR SPILL, CONTACT**

NAME PHONE NO 24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME | SIGNATURE | DATE

TRANSPORTERS

16. **TRANSPORTER (1)**	17. **TRANSPORTER (2)**
NAME:	NAME:
TEXAS I.D. NO.	TEXAS I.D. NO.
IN CASE OF EMERGENCY CONTACT:	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE:	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	19. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME	PRINTED/TYPED NAME
SIGNATURE DATE	SIGNATURE DATE

DISPOSAL FACILITY

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE	CELL NO.	DATE	TIME
			14

GENERATOR: COPIES 1 & 6 DISPOSAL SITE: COPIES 2 & 3 TRANSPORTERS: COPIES 4 & 5

COPY 5

1002 CLEAN UP

LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

NON-HAZARDOUS WASTE MANIFEST NO 110647 | 1. PAGE ___ OF ___ | 2. TRAILER NO.

GENERATOR

3. COMPANY NAME / PHONE NO.	4. ADDRESS / CITY / STATE / ZIP	5. PICK-UP DATE / 6. TNRCC I.D. NO.

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	8. CONTAINERS Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
a.					
b.					
c.					
d.					

12. COMMENTS OR SPECIAL INSTRUCTIONS:

13. WASTE PROFILE NO.

14. **IN CASE OF EMERGENCY OR SPILL, CONTACT**

NAME | PHONE NO | 24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME | SIGNATURE | DATE

TRANSPORTERS

16. **TRANSPORTER (1)**	17. **TRANSPORTER (2)**
NAME:	NAME:
TEXAS I.D. NO.	TEXAS I.D. NO.
IN CASE OF EMERGENCY CONTACT:	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE:	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	19. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME	PRINTED/TYPED NAME
SIGNATURE / DATE	SIGNATURE / DATE

DISPOSAL FACILITY

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048

PERMIT NO. WM-01-035 - New Mexico

20. COMMENTS

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE | CELL NO. | DATE | TIME

GENERATOR: COPIES 1 & 6 | DISPOSAL SITE: COPIES 2 & 3 | TRANSPORTERS: COPIES 4 & 5

COPY 5

1002 CLEAN UP

LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

NON-HAZARDOUS WASTE MANIFEST NO 110619 | 1. PAGE ___ OF ___ | 2. TRAILER NO. 14

GENERATOR

3. COMPANY NAME	4. ADDRESS	5. PICK-UP DATE
PHONE NO.	CITY STATE ZIP	6. TNRCC I.D. NO.

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
a.					
b.					
c.					
d. 41 C 41 O 44140					

12. COMMENTS OR SPECIAL INSTRUCTIONS:	13. WASTE PROFILE NO.

14. IN CASE OF EMERGENCY OR SPILL, CONTACT

NAME | PHONE NO | 24-HOUR EMERGENCY NO.

15. GENERATOR'S CERTIFICATION: I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC

PRINTED/TYPED NAME	SIGNATURE	DATE

TRANSPORTERS

16. TRANSPORTER (1)	17. TRANSPORTER (2)
NAME:	NAME:
TEXAS I.D. NO.	TEXAS I.D. NO.
IN CASE OF EMERGENCY CONTACT:	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE:	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	19. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME _____	PRINTED/TYPED NAME _____
SIGNATURE _____ DATE _____	SIGNATURE _____ DATE _____

DISPOSAL FACILITY

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. DISPOSAL FACILITY'S CERTIFICATION: I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE	CELL NO.	DATE	TIME
			14

GENERATOR: COPIES 1 & 6 | DISPOSAL SITE: COPIES 2 & 3 | TRANSPORTERS: COPIES 4 & 5

COPY 5

1002 CLEAN UP

LEA LAND DISPOSAL SITE NEW MEXICO

MILE MARKER #64 US HWY 62/180 • 30 MILES EAST OF CARLSBAD, NM • PHONE (575) 887-4048

LEA LAND, LLC

1300 WEST MAIN STREET • OKLAHOMA CITY, OK 73106 • PHONE (405) 236-4257

NON-HAZARDOUS WASTE MANIFEST NO 110618 | 1. PAGE__OF__ | 2. TRAILER NO.

GENERATOR

3. COMPANY NAME	4. ADDRESS	5. PICK-UP DATE
PHONE NO.	CITY STATE ZIP	6. TNRCC I.D. NO.

7. NAME OR DESCRIPTION OF WASTE SHIPPED:	8. CONTAINERS No.	Type	9. TOTAL QUANTITY	10. UNIT Wt/Vol.	11. TEXAS WASTE ID #
a.					
b.					
c. 37450 37450 43960					
d.					

12. COMMENTS OR SPECIAL INSTRUCTIONS:	13. WASTE PROFILE NO.

IN CASE OF EMERGENCY OR SPILL, CONTACT

14. NAME | PHONE NO | 24-HOUR EMERGENCY NO.

15. **GENERATOR'S CERTIFICATION:** I Hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations, including applicable state regulations, and are the same materials previously approved by LEA LAND, LLC.

PRINTED/TYPED NAME | SIGNATURE | DATE

TRANSPORTERS

16. **TRANSPORTER (1)**	17. **TRANSPORTER (2)**
NAME:	NAME:
TEXAS I.D. NO.	TEXAS I.D. NO.
IN CASE OF EMERGENCY CONTACT:	IN CASE OF EMERGENCY CONTACT:
EMERGENCY PHONE:	EMERGENCY PHONE:
18. **TRANSPORTER (1):** Acknowledgment of receipt of material	19. **TRANSPORTER (2):** Acknowledgment of receipt of material
PRINTED/TYPED NAME: Joe Sotelo	PRINTED/TYPED NAME:
SIGNATURE: Joe Sotelo DATE	SIGNATURE DATE

DISPOSAL FACILITY

Lea Land, LLC	ADDRESS: Mile Marker 64, U.S. Hwy 62/180, 30 Miles East of Carlsbad, NM	PHONE: 575-887-4048
PERMIT NO. WM-01-035 - New Mexico	20. COMMENTS	

21. **DISPOSAL FACILITY'S CERTIFICATION:** I Hereby certify that the above described wastes were delivered to this facility, that the facility is authorized and permitted to receive such wastes.

AUTHORIZED SIGNATURE	CELL NO.	DATE	TIME
			1:40

GENERATOR: COPIES 1 & 6 | DISPOSAL SITE: COPIES 2 & 3 | TRANSPORTERS: COPIES 4 & 5

COPY 4